

Islamic Republic of Afghanistan  
Afghanistan National Development Strategy  
1387 - 1391 (2008/09 - 2012/13)



A Strategy for Security, Governance,  
Rule of Law, Human Rights, Social & Economic  
Growth and Poverty Reduction

VOLUME THREE  
Social and Economical Development Pillar  
Energy, Transportation, Water Resource Management,  
Information and Communications Technology, Urban  
Development, and Mining Sector Strategies



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بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

*In the Name of Allah, the Most Compassionate, the Most Merciful*

إِنَّ اللَّهَ لَا يُغَيِّرُ مَا بِقَوْمٍ حَتَّىٰ يُغَيِّرُوا مَا بِأَنفُسِهِمْ

*Verily, never will Allah change the condition of people unless they  
change it themselves (Holy Quran, 013,011)*

## VISION FOR AFGHANISTAN

*By the solar year 1400 (2020), Afghanistan will be:*

- A stable Islamic constitutional democracy at peace with itself and its neighbors, standing with full dignity in the international family.
- A tolerant, united, and pluralistic nation that honors its Islamic heritage and the deep seated aspirations toward participation, justice, and equal rights for all.
- A society of hope and prosperity based on a strong, private-sector led market economy, social equity, and environmental sustainability.

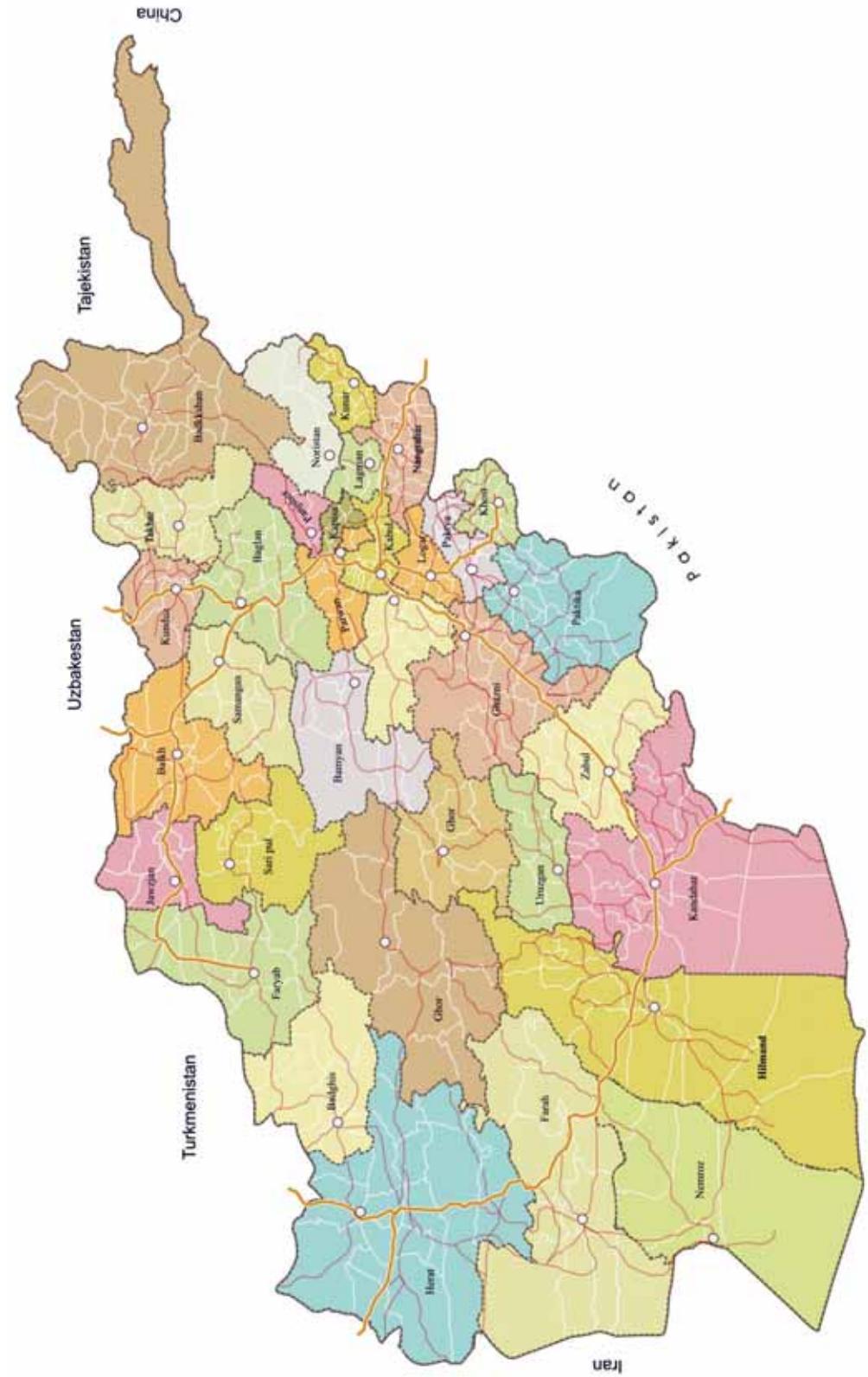
## ANDS Goals for 1387-1391 (2008/09-2012/13)

*The Afghanistan National Development Strategy (ANDS) serves as Afghanistan's Poverty Reduction Strategy Paper (PRSP) and uses the pillars, principles and benchmarks of the Afghanistan Compact as a foundation. The pillars and goals of the ANDS are:*

1. *Security: Achieve nationwide stabilization, strengthen law enforcement, and improve personal security for every Afghan.*
2. *Governance, Rule of Law and Human Rights: Strengthen democratic processes and institutions, human rights, the rule of law, delivery of public services and government accountability.*
3. *Economic and Social Development: Reduce poverty, ensure sustainable development through a private-sector-led market economy, improve human development indicators, and make significant progress towards the Millennium Development Goals (MDGs).*

*A further vital and cross-cutting area of work is eliminating the narcotics industry, which remains a formidable threat to the people and state of Afghanistan, the region and beyond.*

# Map of Afghanistan



Afghanistan National Development Strategy (ANDS) Structure

(3 Pillars, 8 Sub-Pillars, 17 Sectors and 6 cross-cutting issues)

# Foreword

For the preparation of Afghanistan National Development Strategy



*In the name of Allah, the most Merciful, the most Compassionate*

Six and half years ago, the people of Afghanistan and the international community joined hands to liberate Afghanistan from the grip of international terrorism and to begin the journey of rebuilding a nation from a past of violence, destruction and terror. We have come a long way in this shared journey.

In a few short years, as a result of the partnership between Afghanistan and the international community, we were able to create a new, democratic Constitution, embracing the freedom of speech and equal rights for women. Afghans voted in their first-ever presidential elections and elected a new parliament. Today close to five million Afghan refugees have returned home, one of the largest movements of people to their homeland in history.

Thousands of schools have been built, welcoming over six million boys and girls, the highest level ever for Afghanistan. Hundreds of health clinics have been established boosting our basic health coverage from a depressing 9 percent six years ago to over 85 percent today. Access to diagnostic and curative services has increased from almost none in 2002 to more than forty percent. We have rehabilitated 12,200 km of roads, over the past six years. Our rapid economic growth, with double digit growth almost every year, has led to higher income and better living conditions for our people. With a developing road network and a state-of-the-art communications infrastructure, Afghanistan is better placed to serve as an economic land-bridge in our region.

These achievements would not have been possible without the unwavering support of the international community and the strong determination of the Afghan people. I hasten to point out that our achievements must not distract us from the enormity of the tasks that are still ahead. The threat of terrorism and the menace of narcotics are still affecting Afghanistan and the broader region and hampering our development. Our progress is still undermined by the betrayal of public trust by some functionaries of the state and uncoordinated and inefficient aid delivery mechanisms. Strengthening national and sub-national governance and rebuilding our judiciary are also among our most difficult tasks.

To meet these challenges, I am pleased to present Afghanistan's National Development Strategy (ANDS). This strategy has been completed after two years of hard work and extensive consultations around the country. As an Afghan-owned blueprint for the development of Afghanistan in all spheres of human endeavor, the ANDS will serve as our nation's Poverty Reduction Strategy Paper. I am confident that the ANDS will help us in achieving the Afghanistan Compact benchmarks and Millennium Development Goals. I also consider this document as our roadmap for the long-desired objective of Afghanization, as we transition towards less reliance on aid and an increase in self-sustaining economic growth.

I thank the international community for their invaluable support. With this Afghan-owned strategy, I ask all of our partners to fully support our national development efforts. I am strongly encouraged to see the participation of the Afghan people and appreciate the efforts of all those in the international community and Afghan society who have contributed to the development of this strategy. Finally, I thank the members of the Oversight Committee and the ANDS Secretariat for the preparation of this document.

A handwritten signature in black ink, appearing to read "Hamid Karzai".

Hamid Karzai  
President of the Islamic Republic of Afghanistan

# Message from the Oversight Committee

For the preparation of the Afghanistan National Development Strategy



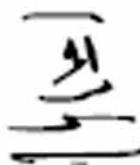
*In the name of Allah, the most Merciful, the most Compassionate*

We are pleased to present the Afghanistan National Development Strategy, which reflects the commitment of the Islamic Republic of Afghanistan to poverty reduction and private sector-led economic growth for a prosperous and stable Afghanistan. The ANDS Oversight Committee (OSC) was mandated by the Government to produce a Millennium Development Goals-based national strategy that is Afghan-owned and meets the requirements for a Poverty Reduction Strategy Paper. The OSC met on a regular basis to design, discuss and oversee the development of the strategy, including the identification of the needs and grievances of the people, and the prioritization of resource allocations and actions. To embrace 'Afghanization' and ownership, the OSC facilitated inclusive and extensive consultations both at national and sub-national levels.

Sustained fiscal support and continuous evaluation and monitoring are essential now to meet the challenges ahead related to ANDS implementation. The democratic aspirations of the Afghan people are high, yet financial resources remain limited. While much has been accomplished since 2001, more remains to be done as we move from "Compact to Impact". The Afghan Government with support from the international community must act decisively, strategically, and with an absolute commitment to the ANDS goals and vision.

We look forward to working with our government colleagues, civil society representatives, tribal elders and religious scholars, the private sector, the international community and, most importantly, fellow Afghans to implement the ANDS, to help realize the Afghanistan Compact benchmarks and Millennium Development Goals.

Prof. Ishaq Nadiri  
Senior Economic Advisor to the President  
Chair, ANDS and JCMB



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First Vice-President

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National Security Advisor

Haneef Atmar  
Minister of Education

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For the preparation of the Afghanistan National Development Strategy



*In the name of Allah, the most Merciful, the most Compassionate*

The Afghanistan National Development Strategy (ANDS) could not have been developed without the generous contribution of many individuals and organizations. The ANDS was finalized under the guidance of the Oversight Committee, appointed by HE President Hamid Karzai and chaired by H.E. Professor Ishaq Nadiri, Senior Economic Advisor to the President and Chair of the ANDS Oversight Committee. The committee included: H.E. Rangeen Dadfar Spanta, Minister of Foreign Affairs; H.E. Anwar-ul-Haq Ahady, Minister of Finance; H.E. Jalil Shams, Minister of Economy; H.E. Sarwar Danish, Minister of Justice; H.E. Haneef Atmar, Minister of Education; H.E. Amin Farhang, Minister of Commerce; and H.E. Zalmay Rassoul, National Security Advisor.

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All Ministers, deputy ministers and their focal points, religious leaders, tribal elders, civil society leaders, all Ambassadors and representatives of the international community in Afghanistan; and all Afghan citizens. National and international agencies participated actively in the ANDS consultations. Their contributions, comments and suggestions strengthened the sectoral strategies, ensuring their practical implementation. Thanks are also due to the Ministry of Rural Rehabilitation for their significant contributions to the subnational consultations. Special thanks are further due to the Presidents Advisors, Daud Saba and Noorullah Delawari for their contributions, as well as Mahmoud Saikal for his inputs. We are also indebted to the Provincial Governors and their staff for their contributions, support and hospitality to the ANDS preparations.

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Finally, I would like to thank all who contributed towards this endeavor in preparation of the first Afghanistan National Development Strategy, a milestone in our country's history and a national commitment towards economic growth and poverty reduction in Afghanistan.

Adib Farhadi,  
Director, Afghanistan National Development Strategy, and  
Joint Coordination and Monitoring Board Secretariat

See complete list of contributors in next page

**The Energy Sector Strategy** was developed as a result of the commitment and efforts of members of key Afghan ministries, United Nations, donors, NGOs, civil society and the private sector.

The invaluable contribution of H.E. Mohammad Ismail Khan, Minister of Energy & Water, H.E. Dip. Eng. M. Ibrahim Adel, Minister of Mines, H.E. Mohammad Ehsan Zia, Minister of Rural Rehabilitation and Development, has been invaluable in the development of this sector strategy.

Finally, we would like to thank everyone who assisted the ANDS Secretariat in working to develop the Energy Sector Strategy. We look forward to the firm commitment of all our stakeholders throughout the implementation of this strategy.

Certainly, contributions to the Energy Sector will remain key to the success of this strategy in particular, and of the ANDS in general.

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# Table of Contents



<b>Energy Sector Strategy .....</b>	1
Executive Summary .....	1
Introduction .....	5
Chapter 1: Current State Of The Energy Sector .....	11
Chapter 2: Energy Sector Strategy .....	31
Chapter 3: Energy Sub-Sector Strategies .....	53
Chapter 4: Cross-Cutting Issues.....	79
Chapter 5: Monitoring And Evaluation.....	83
Annex I. Energy Sector Strategy Action Plan .....	86
Annex II: Energy Sector Strategy Monitoring Matrix.....	90
Annex III: List Of Programs And Projects .....	91
Annex IV: List Of Provincial Priority Projects.....	95
<b>Transport And Civil Aviation Sector Strategy .....</b>	99
Executive Summery .....	103
Introduction .....	113
Chapter 1: Context .....	117
Chapter 2: Policy Framework.....	139
Chapter 3: Transport Sector Sub-Strategies.....	179
Chapter 4: Cross Cutting And Other Sector Related Issues .....	189
Annex I: Transport Sector Stategy Action Plan .....	194
Annex II: Transport Sector Strategy Monitoring Matrix.....	198
Annex III: Transport Sector Strategy Programs And Projects List .....	201
Annex IV: List Of Provincial Priority Projects (Transport Sector).....	208
<b>Water Resource Management Sector Strategy.....</b>	215
Executive Summary .....	219
Chapter 1: Introduction.....	223
Chapter 2: Context .....	227
Chapter 3: Overall Strategy For The Water Sector .....	239
Chapter 4: Priority Policies And Objectives.....	251
Chapter 5: Inputs And Outputs .....	257
Chapter 6: Cross Cutting Issues.....	269
Chapter 7: Implementation Framework .....	271
Annex I: Water Sector Strategy Action Plan .....	276
Annex II: Water Sector Strategy Monitoring Matrix.....	278
Annex III: List Of Programs And Projects (Water Sector) .....	279
Annex IV: List Of Provincial Priority Projects (Water Sector).....	282
<b>Information And Communication Technology Sector Strategy .....</b>	293
Executive Summary.....	297
Introduction .....	303
Context.....	311
Chapter 1: Policy Framework.....	319
Chapter 2: Ict Sub-Sector Strategies.....	333
Chapter 3: Cross Cutting And Other Sector Related Issues .....	337
Chapter 4: Implementation Framework .....	341

Appendix I: Sector Investment Program .....	342
Appendix II: Achievements (2002-2007) .....	343
Annex I: Ict Sector Strategy Action Plan.....	344
Annex II: Ict Sector Strategy Monitoring Matrix.....	345
Annex III: List Of Programs And Projects (Information And Communication Technology Sector).....	347
Annex IV: List Of Provincial Priority Projects (Information And Communication Technology Sector)...	348
 Urban Development Sector Strategy.....	351
Executive Summary.....	357
Introduction .....	361
Chapter 1: .....	365
Chapter 2: Key Urban Sector Programmes .....	395
Chapter 3: Cross Cutting And Other Sector-Related Issues.....	401
CHAPTER 4: MONITORING AND EVALUATION .....	407
Annex I: National Action Plan .....	415
Annex II: Urban Sector Strategy Monitoring Matrix .....	417
Annex III: List Of Programs And Projects.....	418
Annex IV: List Of Provincial Priority Projects .....	420
 Mining Sector Strategy .....	425
Chapter 1: Afghanistan Mining Resources.....	429
Chapter 2: Current Plans.....	437
Chapter 3: Strategy To Achieve The Expected Results.....	441
Chapter 4: Implementing Mines Strategy .....	445
Annex I: Mines Sector Strategy Action Plan .....	454
Annex II: Mines Sector Strategy M&E Matrix .....	455
Annex III: List Of Programs And Projects (Mines Sector Strategy).....	456
Annex IV: List Of Provincial Priority Projects (Mines Sector Strategy).....	457

# Acronyms and Abbreviations

AC	Afghanistan Compact
ACRC	Afghan Center for Regional Cooperation
ACSA	Afghan Computer Science Association
ADB	Asian Development Bank
ADC	Area Development Councils
ADF	Afghan Development Forum
AFG/ Afs	Afghani (Currency)
AGS	Afghan Geological Survey
AHA	Afghan Highway Administration
AIP	Aeronautical Information Publication
AIRD	Afghanistan Institute of Rural Development
AISA	Afghanistan Investment Support Agency
AMU	Aviation Maintenance Unit
ANDS	Afghanistan National Development Strategy
ARDS	Afghan Reconstruction & Development Service
AREU	Afghanistan Research and Evaluation Unit
ARN	Afghan Road Network
ARTF	Afghan Reconstruction Trust Fund
ASAP	As soon as possible
ASYCUDA	Automated System for Customs Data
ATRA	Afghanistan Telecommunication Regulation Authority
AUWSSC	Afghanistan Urban Water Supply and Sewerage Corporation
BCM	Billion cubic meters
BGR	Bundesanstalt fuer Geowissenschaften und Rohstoffen
BOT	Build-Operate-Transfer
BPD	Barrels per Day
BTFB	Border Transit Facilitation Bureaus
BTU	British Thermal Units
CAA	Civil Aviation Authority
CAP	City Action Plans
CAR	Central Asian Republics
CAREC	Central Asian Regional Economic Cooperation
CASA	Central and South Asia
CAWSS	Central Authority for Water Supply and Sewerage
CCN	Copper Cable Network
CDC	Community Development Council
CDCs	Community Development Councils
CDMA	Code Division Multiple Access
CDP	City Development Plans
CENTCOM	U.S. Department of Defence Central Command (covers Afghanistan)
CEO	Chief Executive Officer
CFL	Compact Fluorescent Lights
CG	Transport Sector Consultative Group
CIDA	Canadian International Development Agency
CMBS	Community-Based Monitoring Systems
CN	Counter Narcotics
CSO	Central Statistics Office
CUM	cubic meter
DABM	Da Afghanistan Breshna Moassessa (the Afghan electric utility)
DCN	District Communication Network
DfID	Department for International Development
DM	Deputy Minister
EC	European Commission
ECOTA	Economic Cooperation Organization Trade Agreement
EIA	Environmental Impact Assessment
EIRP	Emergency Irrigation Rehabilitation Program
ETP	Evapotranspiration
ETS	Eastern Transmission System
EU	European Union
UNFAO	United Nations Food and Agricultural Organization

FDI	Foreign Direct Investment
FS	Feasibility study
FSO	Financial Support Operation
FY	Fiscal Year
G2B	Government to Business (Application)
G2G	Government to Government (Application)
GCN	Government Communication Network
GDP	Gross Domestic Product
GDP	Gross development product
GEF	Global Environmental Facility
GIPI	Global Internet Policy Initiative
GIS	Geographic Information System
GOA	Government of Afghanistan
GPRS	General Packet Radio Services
GPS	Global Positioning System
GSI	Globecomm Systems International (Contractor)
GSM	Global System Mobile
GTZ	Deutsche Gesellschaft fur Technische Zusammenarbeit
GWH	Giga-Watt Hour
GWP	Global Water Partnership
H/H	Households
Ha	Hectare
HDM – 4	Highway Developments and Maintenance Model, Version 4
HPP	hydro-power plant
I-ANDS	Interim Afghan National Development Strategy
IARCS	Administrative Reform and Civil Service Commission
IATA	International Air Transport Association
ICAO	International Civil Aviation Organization
ICE	Inter-Ministerial Commission on Energy
ICT	Information and Communication Technology
ICTTC	ICT Training Center
IDLG	Independent Department for Local Governance
IDPs	Internal Desperate Population
IMF	International Monetary Fund
IN	Intelligent Network
IPP	Independent Power Producers
IROA	Islamic Republic of Afghanistan
IRRIP	Interim Rural Roads Investment Plan
ISP	Internet Service Provider
IWRM	Integrated Water Resources Management
IXP	Internet Exchange Point
JCMB	Joint Coordination and Monitoring Board
JICA	Japan International Cooperation Agency
KfW	Kredit fuer Wiederaufbau
KIA	Kabul International Airport
Km	kilometer
KM	Kabul Municipality
KW	Kilowatt (Unit of electric capacity)
KWH	Kilowatt-Hour (Unit of electric energy)
LFSP	Local Fixed Service Provider
LOE	Level of Effort
LOS	Level of Service
Lpcd	liters per capita per day
M&E	Monitoring and Evaluation
MAIL	Ministry of Agriculture, Irrigation and Livestock
MCIT	Ministry of Communications & Information Technology
MCN	Ministry of Counter-Narcotics
MDG	Millennium Development Goal
MEW	Ministry of Energy and Water
MFA	Ministry of Foreign Affairs

MHP	Micro-Hydro Plant
MIS	Management Information System
MIS	Management Information System
MoA	Ministry of Agriculture
MoC	Ministry of Commerce
MOCI	Ministry of Commerce and Industries
MoE	Ministry of Economy
MOF	Ministry of Finance
MoF	Ministry of Finance
MOFA	Ministry of Foreign Affairs
MOI	Ministry of the Interior
MOJ	Ministry of Justice
MoM	Ministry of Mines
MoPH	Ministry of Public Health
MORR	Ministry of Refugees and Returnees
MOT	Ministry of Transport
MOTCA	Ministry of Transport and Civil Aviation
MoU	Memorandum of Understanding
MoUD / MUD	Ministry of Urban Development
MoWA	Ministry of Women Affairs
MPW	Ministry of Public Works
MRRD	Ministry of Rural Rehabilitation and Development
MUD	Ministry of Urban Development
MW	Mega-What (measure of energy capacity)
MW	Megawatt
MWH	Mega-Watt Hours (measure of energy flow)
NA	Needs Assessment
NATO	North Atlantic Treaty Organization
NDC	National Data Center
NEEP	National Emergency Employment Programme
NEPA	National Environmental Protection Agency
NEPS	North-East Power System
NGO	Non-Governmental Organization
NGOs	Non-Government Organizations
NHCA	National Hydrology Committee for Afghanistan
NRAP	National Reconstruction Program
NRAP	National Rural Access Program
NRRDC	New & Renewable Energy Research and Development Center
NRVA	National Risk and Vulnerability Assessment
NSP	National Solidarity Programme
NSS	National Surveillance System
NTS	Northern Transmission System
NURC	National Utility Regulatory Commission
O&M	Operation and Management
O&M	Operation & Maintenance
OFC	Optical Fiber Cable
PABX	Private Automatic Branch Exchange
PAR	Public Administration Reform
PCU	Project Coordination Unit
PDP	Provincial Development Program
PIA/MVK	Personal injury accidents per million vehicle kilometers
PKI	Public Key Infrastructure
PMMR	Performance Based Management & Maintenance of Roads
PPA	Power Purchase Agreement
PPP	Public-Private Partnership
PRC	People's Republic of China
PRR	Priority Reform and Restructure
PRT	Provincial Reconstruction Team
PSA	Production Sharing Agreement
PV	Photovoltaic

RAMU	Railway Maintenance Unit
RBA	River Basin Agency
RBC	River Basin Council
RBM	River Basin Management
RED	Rural Road Evaluation Model
RFP	Request for Proposals
RH	Regional Highways
RIMU	Reform Implementation Management Units
RLED	Rural Livelihoods and Energy Department
RMU	Road Maintenance Unit
ROR	Rate of Return
SAARC	South Asian Association for Regional Cooperation
SAFTA	South Asian Free Trade Association
SBA	Sub-Basin Agency
SBC	Sub-Basin Council
SCO	Shanghai Cooperation Organization
SCWAM	Supreme Council for Water Affairs Management
SDP	Strategic Development Plans (SDP)
SEPS	South-East Power System
SHS	Solar Home System
SIA	Sociological Impact Assessment
SIDA	Swedish International Development Agency
SIDA	Swedish International Development Agency
SIDA	Swedish International Development Agency
SIM	Subscriber Identification Module
SOE	State Owned Enterprises
Sq km	square kilometer
SSDG	Sector Strategy Development Group
SSO	Single-Sign On
SWOT	Strengths, Weaknesses, Opportunities, and Threats Analysis
TA	Technical Assistance
TAP	Trans-Afghan Pipeline
TAT	Technical Assistance Team
TCF	Trillion cubic feet
TSC	Technical Standards Committee
UAE	United Arab Emirates
UNDP	United Nations Development Program
UNESCO	United Nations Educational, Scientific, and Cultural Organization
UNHCR	United Nations High Commission for Refugees
UNOPS	United Nations Office for Project Services
USA	United States of America
USAF	United States Air Force
USAID	United States Agency for International Development
USGS	United States Geological Survey
USS	Urban Sector Strategy
UWSS	Urban Water Supply and Sewerage
UWSS	Urban Water Supply and Sewerage
VCN	Village Communication Network
WB	World Bank
WLL	Wireless Local Loop
WRD	Water Resources Development
WRM	Water Resources Management
WRPU	Water Resources Planning Unit
WSS	Water Supply and Sanitation
WTO	World Trade Organization
WTS	Western Transmission System
WUA	Water User Association



# **Energy Sector Strategy**

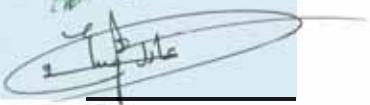
**1387 - 1391 (2007/08 - 2012/13)**



**Pillar III - Economic &  
Social Development**

# Energy Sector Strategy

Approved by  
Sector Responsible Authorities

Ministry/Agency	Name of Minister	Signature
Ministry of Energy and Water	HE M. Ismail Khan	
Ministry of Mines	HE Dip. Eng. M. Ibrahim Adel	
Ministry of Rural Rehabilitation and Development	HE Mohammad Ehsan Zia	

Date of Submission  
February – 2008



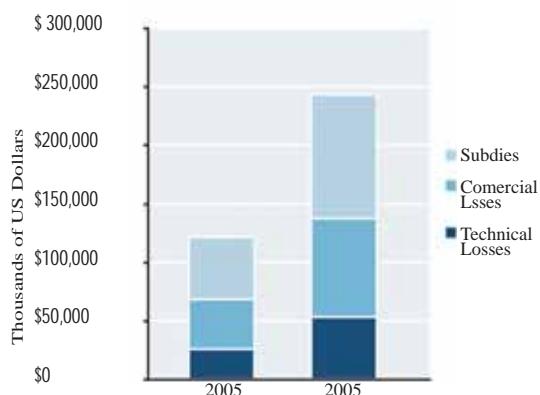
## EXECUTIVE SUMMARY

# ENERGY SECTOR STRATEGY

Afghanistan's energy sector and its economy are at a crossroads. Energy, abundantly and cost effectively supplied, can be a very important input in the sustainable development of Afghanistan. However, energy is no panacea. In fact, if it is supplied imprudently, instead being a vehicle for growth, it will pull down the Government's development efforts and be a drag on economic growth. Capital investment in energy is rising rapidly attesting to the efforts to the Islamic Republic of Afghanistan (IROA) and the donor community. At the same time though, the efficiency of energy operations is not increasing. If left unchecked, much of the investment that is being made will be wasted.

To illustrate this gravity of the problem, the cost of losses has been estimated. Because of the state of the infrastructure and the familiar short comings of Government owned and operated energy provision, losses are enormous. Losses in 2005 amounted US\$ 128.5 million.

Figure 1. Annual Impact of Poor Commercial Operations and Subsidies



The actual cost to the economy is greater! What this highlights is that continuing to operate on a business as usual basis is unsustainable. The number one priority in the energy sector must be on operating efficiency: commercialization of DABM, investments in transmission and distribution to reduce losses, and, repair and maintenance of all power assets. Moreover, it is important to focus now on efficient use of energy and the enabling policy, legal and regulatory frameworks should address this issue.

When this is considered against the Afghan Compact Goals, the importance of efficiency becomes even more important. By 2010 the number of connections to meet the AC goals will rise by 211 percent while capacity will increase only 194%, assuming that imports go according to plan. This means that unless there are changes in efficiency, the average kWh consumed per connection **must** go down. This is not a recipe for economic growth. Compounding the problem and not included in this analysis are that the demand for power will actually rise and that with more connections the cost of un-served energy will rise. While it is imperative that additional infrastructure be added, it is even more important that the IROA focus on efficiency. While much can be done by the Government, the real solution lies in creating and expanding a meaningful role for the private sector.

Realizing that the Afghan economy is starved of reliable and cost effective energy, the immediate task of the IROA, with assistance from the Donor community, is then to provide energy to those that

can use best use and pay for it (and that may well be business), in the quantities and quality that they need, at a price that covers cost (for all but the poorest members of society), and to do so in the most cost effective manner. At the same time though, it must begin to take steps that will provide a solid footing for the transition of the sector from Government provision to Private Sector provision. This strategy acknowledges that there are many steps that need to be taken on the road to fully involving the private sector. It will begin with changes in policy and laws and involvement of the private sector in rural energy provision and in outsourcing at DABM. It is a gradual process that will be enhanced by a deliberate process of reform.

The availability of secure energy supplies within Afghanistan was significantly disrupted by the conflicts of the past two decades. Post-conflict efforts by the Islamic Republic of Afghanistan (IROA) and international donors to date have focused on expanding the availability of energy resources throughout the country. Particular emphasis has been on expanding and rehabilitating the electricity sector in the major economic hubs of the country and providing basic service in rural areas. Efforts also have been taken to improve the supply of natural gas, increase availability of hydro-electric generation, rehabilitate and expand electricity and natural gas transmission and distribution systems, develop renewable energy resources in rural and remote areas, increase low-cost power imports and improve the capability of energy sector institutions.

Since 2001, Afghanistan energy efforts have focused on “bailing out the boat” or keeping the lights on and providing heat in the winter. At some point, one must also focus on stopping the flow of water before they become exhausted. The short term focused activities alone can continue only so long before the long term growth path of the country is adversely impacted. Having achieved moderate success in these areas, the time is ripe to review current activities and programs

and place greater emphasis on behalf of the IROA and donors on a more long-range, sustainable future for the energy sector. This would include balancing on-going efforts to rehabilitate and expand energy resources with a longer-term strategy for the sector.

The Afghan Energy Strategy contains an implicit prioritization of energy sub-sector activities. Electricity is given far greater preference or priority than other sectors because modern economies are built on electricity. Priority is then assigned to other sub-sectors based on their supporting role in electricity and in overall economic activity. In practical terms this means that MoM and MoCI need to prioritize their policies, programs and projects towards the production of fuels for electricity generation. The strategy is based on five<sup>3</sup> prongs or pillars.

### *1 Increased Efficiency in Existing*

*Operation:* At this time, it is easier, faster and cheaper to gain a megawatt of power from increasing efficiency than from building a new generating plant. For example, for every US \$5 the Government spends in providing compact fluorescent light bulbs, it actually saves US \$51 and 49 watts.

### *2 Improved Sector Governance and Public-Private Partnership Promotion:*

The ultimate success of the energy sector depends critically on mobilizing the private sector. This can begin now with establishing a multi-sector regulator, looking to outsource at State Owned Enterprises, preparing the enabling legal, policy and regulatory infrastructure for business, and the commercialization of SOEs.

### *3 Improved Coordination and Capacity Development:*

Additionally, coordination among the Government entities must increase and coordination between the Government

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<sup>1</sup> Clearly there is overlap between pillars 1 and 2. Increased efficiency will in some part necessitate improved Governance and the ultimate efficiency gains will be possible only with private provision. These commonalities notwithstanding, these two areas are different in their major focus.

and the Donor community must likewise be strengthened. Assistance needs to be given to ICE to strengthen its capacity. An integrated energy master plan is required to serve as a road map for the Government and Donors alike. To accomplish this, capacity must be significantly strengthened and training is an imperative

**4      *Rural Energy versus Rural Electrification:*** Most rural Afghans are unable to pay for expensive electricity. Energy is required for growth but energy alone won't do the job. The role of rural energy to seek out opportunities for economic activities that lack energy, that will pay for energy and thereby subsidize rural energy consumption while raising rural incomes at the same time.

**5      *Expanded or New Supply:*** Investments in new capacity or energy infrastructure: A lot of progress has been made, but not enough, in creating new supply. It is time now that the Government and Donor community can consider alternative supplies such as wind energy or reducing consumption alongside the more traditional methods. New supply must be rationalized and efforts focused on a few large projects such as the North East Power System.

These are the pillars of Afghanistan's near term energy strategy. Alongside addressing the immediate and short term needs, it is imperative that the country look to longer term issues. Because it is building its energy infrastructure anew, it can learn from the lessons of experience in other countries. It can focus on energy efficiency, renewable energy and decentralized energy. If it does this at the same time it builds its industrial base, then the benefits are enormous. Thus, while a national grid is important to transport power from cheaper markets, it will prove more beneficial

in the long run to focus on decentralized power. A recent British study concluded that 61 percent of the energy value of the primary fuel disappears. "Another 4 percent vanished in transmission." This means that roughly two thirds of the energy is lost in a centralized system. By locating power generation closer to users, these losses can be significantly reduced. Thus, the long term strategy will increasingly focus on cogeneration, distributed power, renewable and end-use efficiency as well as the more traditional areas.

The strategy is focused on poverty reduction through all its five pillars. First, by improving operating efficiency, the drain on government resources is reduced. More is available for other programs. Similarly, by focusing on end-use efficiency, the drain on the customer's resources is reduced. More of their income is available for other things. Second, improving sector governance will also have a significant impact on poverty. It will bring about better subsidy mechanisms so that the subsidy is targeted to those that need it the best way possible. While it will reduce the overall level of subsidy in the sector but the neediest members of society will have access to energy at subsidized rates. Moreover, every Afghani of subsidy that can be freed up in this sector can be used in other sectors. Third, this strategy reorients rural energy to focus on income generating activities. Thus, by definition this is a poverty reduction activity. Fourth, the economy is starved for energy. The fifth pillar is the investment in new energy supply and the economy can't grow without energy; poverty can't be reduced in Afghanistan without economic growth. Finally, the combined impact of these policies, programs and projects will be more energy supplied more efficiently and reliably. This is a solid prescription for economic growth, which growth is important for poverty reduction.



# INTRODUCTION

Energy, abundantly and cost effectively supplied, is an important input in the sustainable development of Afghanistan. It is a necessary but not sufficient condition for economic growth. Energy provided cost effectively in sufficient quantity and quality on a sustainable basis will support economic development and employment; help reduce poverty; contribute to social and political stability both within Afghanistan and regionally; improve living standards; and contribute to a reduction in environmental impacts. Energy alone, though, is no panacea to Afghanistan's problems. In fact, if it is supplied imprudently, instead being a vehicle for growth, it will drag down the Government's development efforts and be a drag on economic growth.

Realizing that the Afghan economy is starved of reliable and cost effective energy, the immediate task of the IROA, with assistance from the Donor community, is then to (1) provide energy to those that can use best use and pay for it, (2) in the quantities and quality that they need, (3) at a price that covers cost (for all but the poorest members of society), and (4) to do so in the most cost effective manner. At the same time though, it must begin to take steps that will provide a solid footing for the transition of the sector from Government provision to Private Sector provision.

The availability of secure energy supplies was significantly disrupted by the conflicts of the past two decades. Post-conflict efforts by the Islamic Republic of Afghanistan (IROA) and international donors have focused on expanding the availability of energy resources throughout the country. Emphasis has been on expanding and rehabilitating the electricity sector in the major economic hubs of the country and providing basic service in rural areas. Efforts also have been taken to improve the supply of natural gas,

increase availability of hydro-electric generation, rehabilitate and expand electricity transmission distribution system, develop renewable energy resources in rural and remote areas, increase low-cost power imports and improve the capability of energy sector institutions.

Since 2001, Afghanistan energy efforts have focused on "bailing out the boat" or keeping the lights on and providing heat in the winter. The short term focused activities alone can continue only so long before the long term growth path of the country is adversely impacted. Having achieved moderate success in these areas, the time is ripe to review current activities and programs and place greater emphasis on behalf of the IROA and donors on a more long-range, sustainable future for the energy sector. This would include balancing on-going efforts to rehabilitate and expand energy resources with a longer-term strategy for the sector.

To illustrate this gravity of the problem, the cost of losses has been estimated. Because of the state of the infrastructure and the familiar short comings of Government owned and operated energy provision, losses are enormous. Total losses is 40% (Technical 23% and 17% commercial) where as in a reasonable system they would be on the order of 10%. This 20% loss of energy equates to a substantial financial drain. In 2005, Afghanistan produced and imported 1,162.3 Gwh of power<sup>1</sup>. If 20% of this is lost, this means 232.5 MWH and at \$0.12 per kWh<sup>2</sup>, the cost of these losses amounts to \$27.9 million annually. To this must be added the cost of subsidies, or \$56 million a year.

Finally, there are commercial losses. This covers everything from theft to that the fact that (1) not all power sold is billed and (2) not all power billed

<sup>1</sup> AEIC website 2005 electricity production.

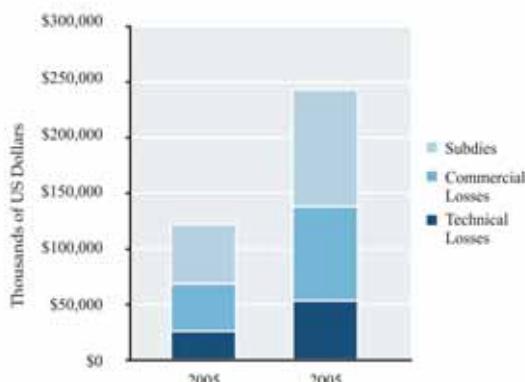
<sup>2</sup> Source: MEW Power Sector Strategy.

is collected. Collections are 60% of billing. It can safely be assumed that total losses are 40% (23% technical and 17% commercial), or 371.9 mWh for a cost of \$44.6 million. This is dramatically illustrated in the following figure.

The total cost of losses and subsidies equaled \$128.5 million in 2005. The actual cost to the economy is greater! What this highlights is that continuing to operate on a business as usual basis is unsustainable. The number one priority in the energy sector must be on efficiency: commercialization of DABM, investments in transmission and distribution to reduce losses, repair and maintenance of all power assets. Changing business as usual also means changing how subsidies are provided. For example, if DABM provided each connection with one CFL to replace one incandescent bulb at the manufacturers cost of \$5, it would save 38.8 thousand mwh per year in generation and reduce its losses by \$US 3 million per year. It would cost DABM only \$1.2 million to change out the bulbs, a rate of return of 17% and the bulb program would pay for itself in 2.5 years. Beyond the financial rewards, this is the easiest way to reduce commercial losses and make more power available. This is equivalent to a 38.8 MW boost in power with no additional investment and in a very short time frame. A 38.8 MW power plant would cost on the order of \$40 million.

Figure 1. Annual Impact of poor commercial operations and subsidies

The IROA will continue to rely on energy from diversified sources. However, modern economies are driven by electricity and the paramount objective in jump starting Afghanistan's energy



sector and its economy is to give priority to electricity and then transportation fuels. In rural areas, it means linking income generating activities to energy and this means providing a slate of energy supply options. This will mean a great deal of coordination among ministries and agencies and it may mean subordinating one Ministry's plans to that of another. This report provides an overview of Afghanistan's energy sector highlighting basic elements and issues and then offers an Energy Sector Strategy to address these issues over the next 2-to-10 year period.

### Importance of Energy for Economic Development

The goal of the Afghanistan Energy Sector Strategy is to deliver sufficient energy to support economic growth of about 9% per annum,<sup>3</sup> which in turn will help lower poverty by 3% a year<sup>4</sup> and to do so in the most cost effective manner. In accordance with the AC, this is translated into the following sector specific goals.

*By end-2010: electricity will reach at least 65% of households and 90% of non-residential establishments in major urban areas and at least 25% of households in rural areas; at least 75% of the costs will be recovered from users connected to the national power grid. A strategy for the development and use of renewable energies will be developed by end-2007."*

Economic growth that raises incomes and reduces poverty is strongly correlated with increased energy use. Energy is used in the production process of every sector of the economy. The provision of adequate and reliable energy services at affordable and cost-based prices, in a secure and environmentally sustainable manner, and in conformity with social and economic development needs, is an essential element of sustainable development. A sufficient supply of energy is a vital input for eradicating poverty, improving human welfare and raising living standards. The correlation between commercial energy and

<sup>3</sup> This has been the Government's growth goal for the economy since 1383 (2004) (See: Securing Afghanistan's Future), and is estimated to be sufficient growth to build a legal economy while eliminating illicit trade without causing devastating poverty.

<sup>4</sup> Afghanistan Compact benchmarks.

development is aptly shown in Figure 3 where per capita GDP is measured against per capita energy consumption. If Afghanistan is to grow and take its place among industrializing nations, then it must have more electricity, petroleum products, and natural gas. Modern economies require modern fuels.

Correlation does not imply causation and adequate supply of commercial energy is a necessary but not sufficient condition for economic growth. Economies can't grow without commercial energy but simply providing more energy to an economy does not guarantee growth. What this means for the Energy Sector Strategy is that energy must often be combined with other interventions. Providing adequate, cost effective energy supplies to an area where there is commercial and/or industrial activity, may lower costs and allow things to be done. This in turn will create jobs and expand the economy. Jobs will include those in the sector; for example, miners, electrical workers and oil rig workers as well as those in industries set up because energy was available. However, supplying the same energy to an area where there are few economic activities is no panacea. In that case, energy supply must be coupled with economic activity if it is to be effective and sustainable. Energy & Economic Development

Figure 1. Energy Poverty Framework

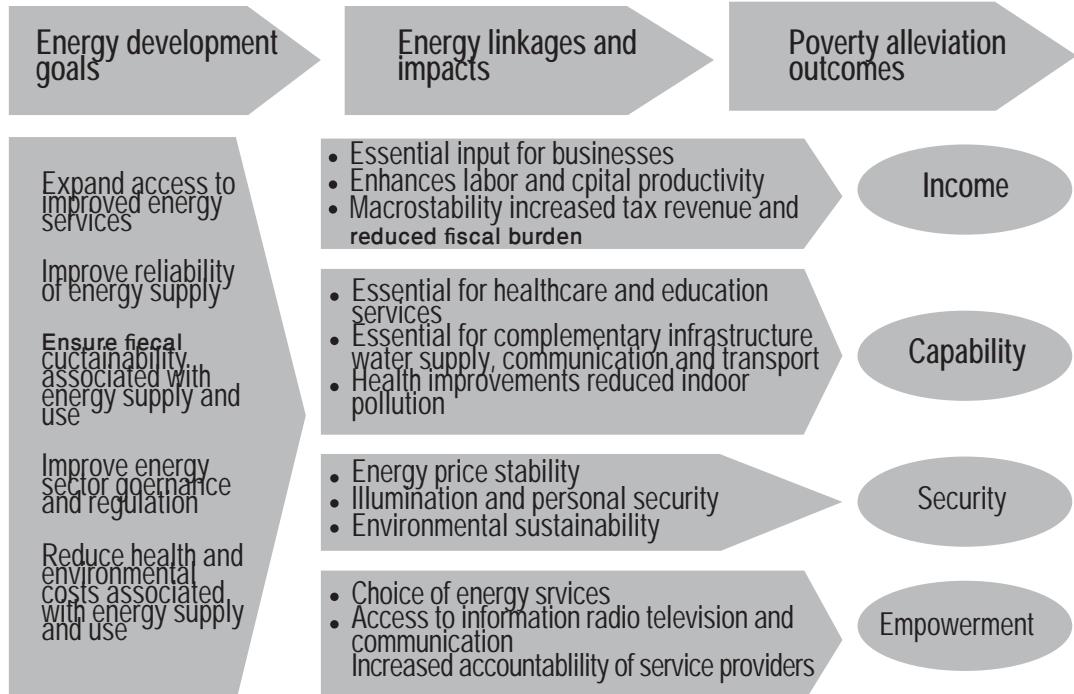
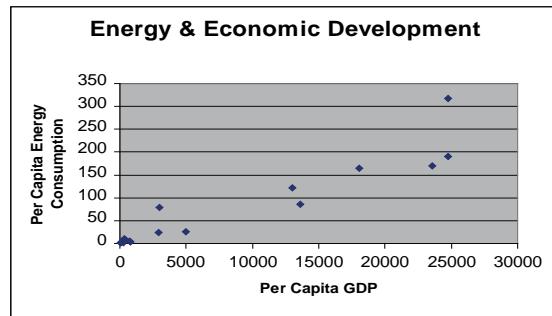


Figure 2. Energy & Economic Development



The overwhelming majority of the population of Afghanistan lives in rural and remote areas. Over the medium to long term is where energy investments and policy reforms can make the greatest impact in reducing poverty, improving the quality of life, and supporting achievement of the ANDS cross-cutting goals. A priority effort in this regard will be to conduct a comprehensive energy needs and consumption survey to support more focused and effective delivery mechanisms for rural projects. *Figure 4: Energy-Poverty Framework* highlights goals, impacts and outcomes, as they relate to the energy-poverty nexus.

## **1 Leveraging Donor Support**

- Since 2002, Government has worked with donors to assess sector needs and has developed a power sector master plan (2003-04), gas sector master plan (2004-05), and renewable energy plan (2006). These require continued updating but have provided foundation information.
- Donors have contributed to rehabilitation of the power grid, millions \$USD funding for diesel fuel and support of more than 1700 small renewable energy projects.
- Since 2006, some commercialization of operations in power.

## **2. Sector Governance and Institutional Reform**

- Establishment of the Inter-Ministerial Commission for Energy (ICE) in 2006 to coordinate government policy in energy, leverage donor resources and integrate sector planning.
- Establishment of Cadastre , monitoring/ evaluation and environment maintenance departments to better implement/organize gas/petroleum and minerals agreements and environment preservation.
- Cabinet approval of Minerals Law; under review by Parliament according to plans envisaged; Mineral Regulations is in the process of drafting and review.
- Cabinet approval of Hydrocarbon Law, Hydrocarbon Regulations draft has been under review by MoJ.
- Gas Law is in the process of drafting

## **3. Promotion of regional energy linkages**

- Afghanistan signed as a member of the Central Asia South Asia (CASA) 1000MW project November 2007.
- Power purchase agreements (PPA) in the process for regular power imports from Iran,

Turkmenistan, Uzbekistan and Tajikistan; new PPA agreements being negotiated for increased power imports.

- Ongoing Afghan participation in the Turkmenistan-Afghanistan-Pakistan-India (TAPI) natural gas pipeline

## **4. Sector Governance.**

Existing governance arrangements are inherently flawed to support a market-based energy system. The inadequacy of sector governance will continue to provide areas for imprudent practices and, if left unchanged, the financial, resource and environmental consequences could be devastating for long-term development of the sector.

- Dispersed institutional support. Seven ministries include energy as part of their portfolio. In addition national programs such as the National Environmental Protection Agency, Civil Service Reform and ANDS contribute to how sector policy is being developed. The institutional, regulatory and legal framework under which Afghanistan's energy market currently functions is insufficient and in the absence of these frameworks makes virtually every aspect of sector operations vulnerable to corruption.
- No legal or regulatory regime is in place (energy law is under preparation) to guide sector operations; there are no legal professionals trained in commercial energy law or regulatory processes.
- Entrenched way of doing business. A strong legacy of central planning that has not sufficiently shifted where government is regulator and policy-maker while private sector implements sector activities has not transpired. The sector is particularly challenged with the need to rebuild a market structure on-top of a well developed system of informal networks and institutions that have operated as a 'shadow state' over the course of more than two decades of conflict. While

the Modern market-based procurement and public administration is essential for sector development.

- No divesting or meaningful commercialization of state energy assets. Government and energy enterprise operations are overstaffed and highly inefficient, lacking fundamental tools and capacity to support technically and commercially viable operations. These include power, natural gas, coal and liquid fuels. Upon close review, some of the state owned enterprises and budgetary units operate with considerable government support and virtually no audit, fiscal or legal oversight.

##### **5. Prioritization of sector actions.**

Government faces considerable challenge in maintaining and operating the existing system while simultaneously seeking to expand and improve operations. Provinces seek to develop their own energy priorities, an astounding lack of spare parts, virtually no metering of power use and no health and safety equipment for workers results in a primitive setting where quality improvements simply can not be achieved. Prioritizing where to start presents considerable challenge.

##### **6. Funding/Capital Investment.**

Reconstitution of the Afghan energy system and expansion of same will require billions of US\$ over the course of years. Absent private investment, government cannot sustain the investments required to ensure a technically sound system. Government must leverage currently available donor funds to ensure longer term access to private investment and capital. Policies to support private investments must be established. Improved procurement, accounting functions, contracting and reporting at the government level is not sufficiently in place to support sound investment.

##### **Sub-National Consultations and PDPs Integration.**

This Sector Strategy incorporates feedback and comments from the Sub National Consultations (SNCs) and as such is a response to the people of Afghanistan's vocalized needs and development goals, both nationally and with provincial emphasis. Projects identified and prioritized during the SNC process are included in the Energy Strategy (for Details of provincial priorities refer to annex IV):

##### **Energy and Poverty Reduction and Economic Growth.**

The Energy sector of Afghanistan has the potential to drive urban and rural economic growth for years to come. *Energy as a commodity* can provide essential supply service that indirectly helps to create employment. Energy is purchased by consumers to power equipment, facilities and manufacturing processes that generate income. *Energy as a business* can create direct employment in the development of power plants, oil, gas and coal fields, the construction of grid systems and the commercial operations of the sector. For the rural poor, small energy installations are highly successful in cost-recovery and contribute to local economic development. Through improved sector governance and increased private sector participation, budgetary resources may be improved at the national and provincial levels. In addition, as sector governance improves, poor and marginalized populations will have increased opportunity to learn about energy developments that may benefit from them. *Energy as a service* can have dramatic impact on urban and rural health, social well being, security and other quality of life aspects. Basic street lighting provides security; refrigeration and cooling for medical supplies and home light and heat for improved family living, schooling and comfort. Increased attention to energy use can result in improved energy resource and environmental stewardship throughout the country.



# CHAPTER 1

## CURRENT STATE OF THE ENERGY SECTOR

### THE STATE OF THE OVERALL ENERGY SECTOR

As mentioned earlier, modern economies demand energy and there is a strong direct relationship between per capita GDP and per capita energy consumption. Economic growth is not accompanied by declining energy consumption! Perhaps the most compelling description of the energy sector in Afghanistan is shown in Figure 5. In 1980, the per capita energy consumption of Afghanistan was fourth in the region, greater than that of Sri Lanka and Bangladesh. By 2004, per capita consumption had fallen drastically from slightly less than 2 million BTU per person to just around 0.5 million BTU. This is at a time when all other

economies in region exhibited strong growth. The significant jump in consumption between the late 1980s and early 1990s was due to the export of natural gas to Russia.

Reliable energy data for Afghanistan is about as scarce as energy in Afghanistan. The data below are from the US Energy Information Administration, the US National Renewable Energy Laboratory and other Afghan sources. Electricity (hydro and imports) comprises the vast majority of energy consumed or about 77% of commercial energy. This is followed by coal, natural gas and then petroleum. Figure 6 below presents the composition of commercial energy in 2005. Petroleum products account for less than 1% of primary energy consumption

Figure 1. Per capita Energy Consumption

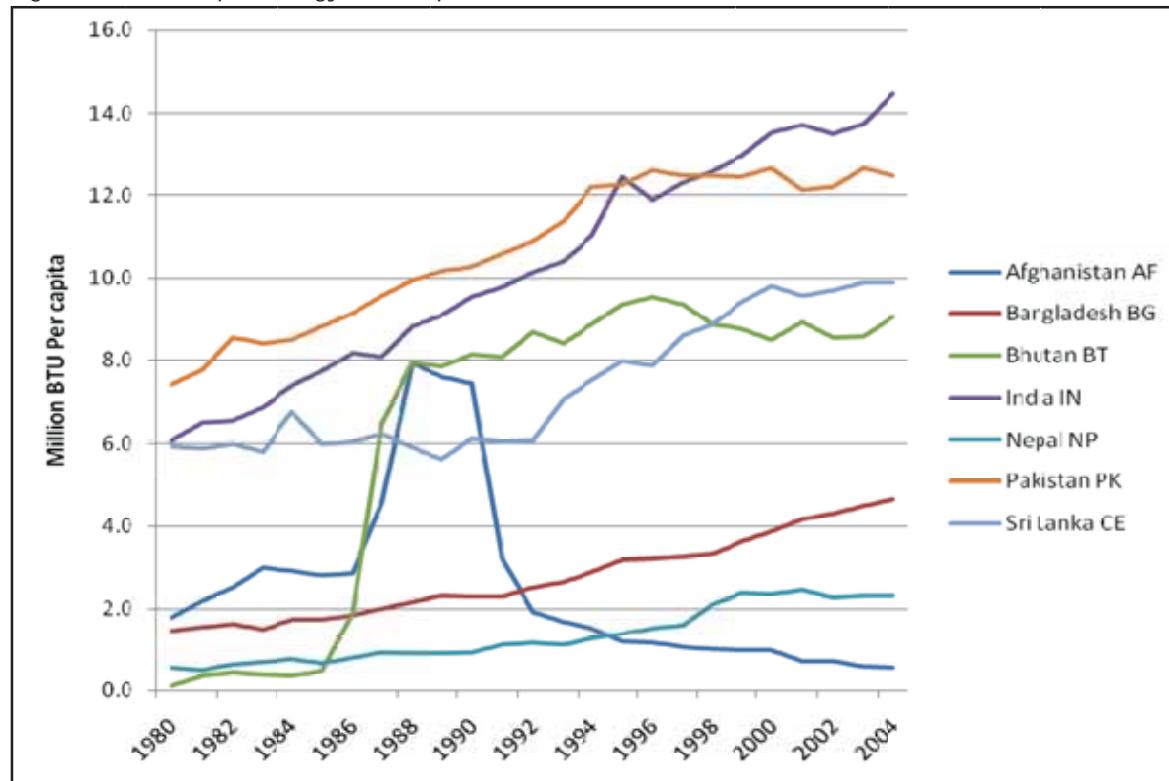


Figure 1. Primary Energy Consumption, 2005

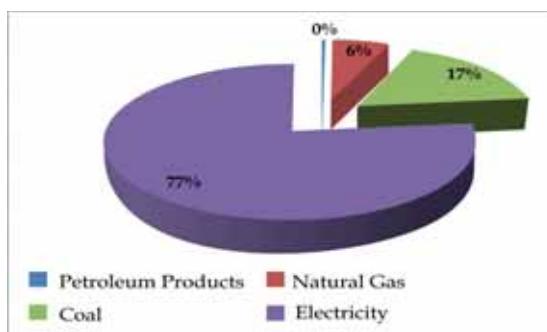


Table 1 presents commercial energy or energy that is bought and sold in commercial markets such as coal, oil, and gas. It excludes the vast amount of biomass energy that is consumed and in countries

like Afghanistan traditional energy represents a major source of energy. Afghanistan has gone from an energy exporter, natural gas to the Soviet Union, to where it imports a substantial amount of energy. In 2005, over half of the commercial energy consumed came from imports. This is due to the deterioration in energy infrastructure rather than an increase in consumption. As can be seen, consumption has remained relatively the same over the last several years being constrained by the ability to import energy

Energy in Afghanistan in recent history can be categorized as a period where supply has always been short of demand, as it has in many similar countries. The demand for energy outstrips current supply in every category of energy,

Table 1. Historical Primary Energy Data (Quadrillion Btu)

v	1980	1990	2000	2001	2002	2003	2004	2005
Production	0.073	0.119	0.014	0.007	0.010	0.009	0.009	0.008
Consumption	0.027	0.109	0.024	0.017	0.020	0.018	0.018	0.019
Imports	-0.046	-0.010	0.010	0.010	0.010	0.008	0.009	0.011

*Source: US EIA*

including traditional energy which is unsustainably harvested. Much of the deficit in supply can be blamed on the lack of investment, cannibalization and carnage that has accompanied Afghanistan's civil crises since 1978. As civil strife strains financial resources new investment is abandoned, routine maintenance is postponed; spares are taken from one plant for another; skilled human resources that are needed to maintain the capital stock leave; and soon parts are stolen and sold for other uses. Sad and unpreventable as this is, a large share of the gap can be blamed on faulty resource allocation policies. Subsidies, as they are so often carried out, create a vicious downward cycle. For example, the electric utility often does not collect enough to pay for operating cost let alone capital costs. This is because (1) thirty percent of the energy it supplies is lost, (2)

some energy that is consumed is not billed, (3) some energy that is billed is not collected, and (4) the price of energy is below the cost of production. When the utility does not collect enough, it begins to let maintenance slip and as a result, technical losses increase; consumers with unreliable service see less reason to pay and so collections are even lower, leading to downward spiral. As mentioned earlier, combined losses and subsidies are costing the Government \$128.5 million annually. As can be clearly seen in Table 2, this is unsustainable. Given that infrastructure investments are growing and increasingly more power is being produced, unless radical changes take place, losses will steadily climb. These losses are not only a drain on the power system. They represent resources that could be going to produce more energy or to other development needs. It is clear that changing this must be a top priority in the electricity sector.

Table 2. The Cost of Losses and Subsidies (2005)

	MWH	US \$ Thousands
2005 (AEIC) Supply	1,162,304	
Technical Losses	232,461	\$ 27,895
Available for Sale	929,843	
Commercial Losses	371,937	\$ 44,632
Subsidies		\$ 56,000
		\$128,528

The energy sector in Afghanistan is predominately state owned and operated with little private sector participation. Although encouraging private investment is a stated goal of the IROA, the substantive work that is required to create the enabling environment for meaningful private sector participation is absent. The proper place to begin is with the adoption of an overarching energy law and redrafting of the sub-sector laws to adequately establish the required enabling frameworks. The energy sector and its sub-sectors (electric power, coal, oil, gas, and renewable energy) are undergoing significant expansion. However, poor infrastructure, insufficient budgetary resources, lack of trained personnel and weak government policies (including non-resolution of inter-ministerial cross-cutting issues) have complicated and in some instances significantly delayed energy resource development and deployment. The result is that each sub-sector's entities often are not able to effectively maintain, repair, manage or expand the system to meet the country's needs. Development of Afghanistan's fossil fuels, in particular natural gas and coal, require large capital investment and significant private sector participation to reach fruition.

## THE STATE OF THE ENERGY SUB-SECTORS

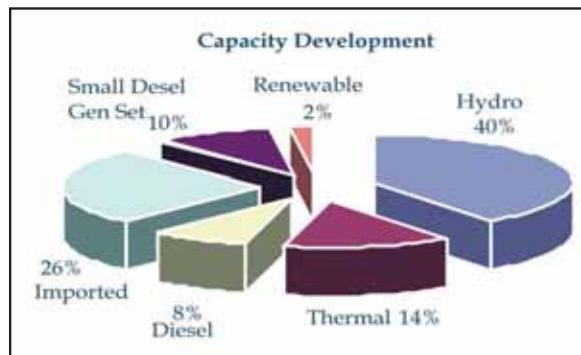
### 1. Electricity

Electricity drives modern economies and per capita consumption of electricity in Afghanistan is one of the lowest in the world. After a long period of decline, generating capacity is beginning to grow again. Hydro plants account the largest share of capacity with imports in second place and growing. The most promising long-term resource for power generation in Afghanistan is hydropower, which accounts for over 50% of grid-connected installed capacity<sup>1</sup>. Following hydropower, thermal generation, primarily diesel generation, supplies power mainly to urban areas. Utilization of indigenous fossil fuels (natural gas

<sup>1</sup> In the 1980 Master Plan it was estimated that Afghanistan has the potential of developing about 23,000 MW of additional hydro generating capacity, with 18,000 MW located on the Panj and Amu Rivers that form the border with Tajikistan and Uzbekistan. The remaining 5,000 MW potential is primarily in two areas, about 1,800 MW on the Kokcha River and 3,200 MW in the Kabul River basin.

and coal) for power generation is very limited as is utilization of solar, wind and other renewable energy resources. Reliance on diesel is both expensive and environmentally hazardous. Diesel generation costs almost 30 US cents per kWh compared to natural gas at 3.5 US cents per

Figure 1. Power Capacity (MW) 2007



kWh. Efforts are underway to utilize local natural gas for power production and this should remain a top priority.

Rural power supply continues to rely mostly on micro-hydro plants (MHPs), limited diesel (mostly privately owned), and batteries, with very limited availability to the rural population.<sup>1</sup> Most rural power generation efforts are funded by donors with limited cost-sharing by the Government.

<sup>1</sup> There is no reliable estimates of rural electricity coverage; some anecdotal evidence, including discussions with senior executives with DABM, indicates coverage from all sources is over 7%, other estimates place it as high as 14%.

Table 3 provides historical data on generation, consumption and capacity.

Connecting each new customer to the system

Table 3. Historical Electricity Data

	1980	1990	2000	2001	2002	2003	2004	2005
Generation (billion kWh)	0.94	1.10	0.47	0.39	0.69	0.81	0.76	0.75
Imports (billion kWh)	0.00	0.00	0.10	0.20	0.15	0.10	0.10	0.10
Consumption (billion kWh)	0.88	1.02	0.53	0.56	0.79	0.86	0.81	0.80
Capacity (million kW)	0.426	0.494	0.405	0.265	0.264	0.323	0.323	0.320

is expensive, and can cost up to \$1,000 or more in distribution costs alone. For Kabul, total costs to expand the distribution system are estimated at US \$310 million. Weak distribution systems can lead to significant power losses, with estimates for the Kabul system at about 30%. As stated earlier, technical losses amount to around \$28 million per year. Since most initial assistance focused on rehabilitating and upgrading generation, funding for and implementation of transmission and distribution system improvements must now be a high priority.

Since it is faster and cheaper to correct technical losses than to put in a new large scale power plant, this should take equal, if not greater, priority with capacity additions.

with other energy sources through a least-cost expansion plan can reduce costs significantly. Moreover, it excludes the cost of transmission and distribution. When this cost is included, extension of the grid may often be more expensive than decentralized generation including many renewables. The financial condition of the sector and the utility is going from bad to worse because there has been little improvement in tariffs and operations while at the same time substantial assets have been added to the system. Maintaining and operating these is expensive and if the Government does not shift its focus from building new infrastructure alone to efficiently operating and maintaining what is has, the burden on the economy will be enormous.

So, what Table 4 clearly shows that if DABM wants to expand generation, then there is a rank order based on cost? Clearly, hydro and imports are preferred to diesel as is natural gas.

However, what Table 4 does not show is the cost of increasing electricity supply and this is a more important concept in the case of Afghanistan given both the imperatives of cost and time. Electricity supply can be increased by increasing generation, increasing efficiency (reducing technical and commercial losses) and by reducing the demand for electricity. In fact, because the Government subsidizes electricity, it actually saves money for every kilowatt hour it can reduce demand while it loses on every kWh that it generates.

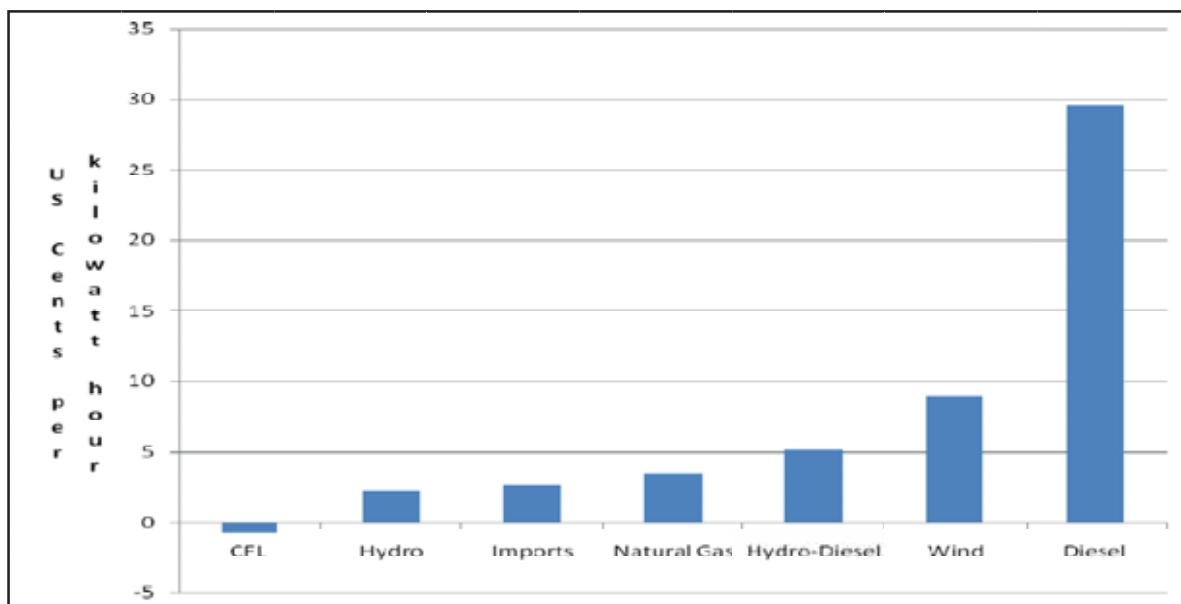
One simple example will explain the importance of concentrating on reducing demand. For every compact fluorescent light (CFL) bulb used, there is a saving in energy over the standard incandescent bulb. If a 60W bulb is replaced with a 14 watt CFL, there is a saving of 46 watts. Over the life of the bulb, 10,000 hours on average, this is a saving of 657 kWh. If the bulb costs US\$ 5, then the cost of freeing up a kWh is US subsidy amounts to 0.8 US cents per kWh or one third that of hydro and it takes far less time to do this. If the subsidy is considered, then the Government actually saves money by helping consumers to be more efficient. For every US\$ 5 the Government spends (on a new CFL), it reduces the amount it spends on the subsidy by US\$ 51. This can be seen in Figure 8.

Table 4. shows the cost of generating power from various sources on the Afghanistan power system.  
The cost of generation differs significantly and displacing diesel generation

S/N	Type	Average Estimated Unit Price (USc/kWh)
1	Hydro	2.29
2	Thermal (NW Kabul)	27.115
3	Imported	2.62
4	Diesel (All Provinces)	29.53
5	Hydro and Diesel	5.19
6	Hydro, Thermal and Diesel	6.473
7	Natural Gas	2.8 to 3.5
8.	Coal	1MW=4.5 ton of coal, cost of one ton of coal is priced Afs.2200.

Source: DABM. The estimated cost of power from natural gas is based on Sheberghan power plant; no estimate of cost of coal fired capacity is available at this time.

Figure 1. Cost of Supply



## 2. Petroleum

According to geological studies already made, considerable resources of gas/petroleum existed in Afghanistan and due to the last few decades problems, sufficient growth has not been made in this respect. Based on MoM strategy and policy, growth of resource to be undertaken by private sector.

## 3. Natural Gas

Natural gas is not yet a significant energy resource, although it has the potential to be a significant

source of energy for the country and an important source of revenue to the Government. The consumption of natural gas is supply constrained just as it is for all other energy resources.

Consumption and production have been declining from the highs of the 1990s because the infrastructure has been abandoned in practical terms and there has been very little effort to locate new resources. The data in the table below.

(Billions of Cubic Feet)

Table 5. Natural Gas Energy Data

	1980	1990	2000	2001	2002	2003	2004	2005
Production	60	104	8	2	2	1	1	1
Consumption	2	67	8	2	2	1	1	1
Reserves	NA	NA	3,530	3,530	3,530	3,530	3,530	3,530

Source: US EIA.

## 4. Production and Reserves

Production of gas is estimated at about 21.2 million cubic feet/day, although it is likely that this is an overestimate<sup>1</sup>.

Like other energy prices, current gas prices are too low to cover costs of rehabilitation, O&M and expansion of production and infrastructure. For incremental gas production, tariffs may be less than half of the level needed to cover costs. Also, extraction, delivery, distribution, sale and collection of gas payments to be made by Afghan Gas enterprise and the gas cost payment is directly transferred to the government account. . . A large part of the infrastructure for storage, transmission and distribution has been damaged while the remaining capacity is in need of rehabilitation.

According to estimate of US geological survey ,the evaluation made is indicative of 444 billion cubic meters of natural gas reserves, 219 million tons of petroleum, and 75 ml tons of condensation.

## 5. Crude Oil

According to the studies made, there existed some 45 ml tons of geological petroleum reserves whilst with respect to the above, the recent studies indicate that the reserves seem to have been much more than the above estimation.

Ministry of mines plans to lease one petroleum area and two gas areas in 2008 through biddings to private sector for exploration, extraction that also includes filtration, delivery and sale process.

## 6. Petroleum Products

Afghanistan does not have an operating refinery and so imports all of its refined

<sup>1</sup> Engineer Amir Zada, Director of Oil and Gas, Ministry of Mines, November 2006

products. During the Taliban regime a 3,000 bpd refinery had been constructed but was never operational. To increase value added output, the IROA is considering construction of an oil refinery (approximately 10,000 bpd) in North East Afghanistan to refine crude oil produced domestically in the region. If constructed, this refinery would reduce Afghanistan's dependence on imported oil products and improve the quality of refined products consumed in the country. Preliminary estimates for this investment range from \$12-\$32 million, depending on configuration, infrastructure requirements and other factors.

In Afghanistan, due to lack of oil filtration unit, all petroleum products are imported from foreign countries.

All petroleum are imported through the neighbouring countries of Pakistan, Iran, Turkmenistan, Uzbekistan, and Tajikistan<sup>2</sup>. Afghanistan consumes approximately 1,200,000 tons of state-supplied fuel per year<sup>3</sup>. This includes all types of petrol and diesel as well as mazut and kerosene. It is estimated that about 80% of these fuels are consumed for automotive purposes, while 20% are used for power auto-production (gasoline mainly) or small-scale grid power generation (diesel mainly), and water pumps. Demand for liquid fuels in Afghanistan has increased dramatically in the past five years. With continued and increased reliance on diesel generation, air traffic and home uses, this demand is expected to continue to increase. Additionally, fuel quality is quite poor compared to international standards and is often adulterated.

While previously the government had a monopoly on petroleum products trade, this sector is now entirely in private hands. Ten traders are registered with the Ministry of Transport, as are the 2,658 trucks that are authorised to import petroleum products into Afghanistan. The

<sup>2</sup> Energy Sector Review and Gas Development Master Plan; ADB TA 4088; Sofregaz, June 2004.

<sup>3</sup> This figure excludes privately imported or other fuel imports not reported to the state.

Petroleum and Gas Enterprise (Liquid Fuels), under the auspices of the Ministry of Commerce and Industries, provides oversight for 1600 gas stations and 1300 fuel trucks. Infrastructure as well as operational improvements could provide an opportunity for private investment and more transparent operations.

There has been no donor support to this sector. Instead, more than 30 reported private contractors work with the Petroleum and Gas Enterprise to supply Afghanistan's gas stations with fuel as well as to import diesel fuel for power generation.

LPG has been increasingly popular as a residential fuel in Afghanistan and the monthly consumption is estimated to have increased to 12 000 tons over Islamic year 1382. The retail price of LPG in Kabul is of 50-60 Af / kg, and far less in Herat, which is closer to the supplying countries. Turkmenistan is the main supplier, followed by Iran. The product is carried within Afghanistan in 15-20 tons trailer vessels, or in cylinders. LPG is stored in three dedicated depots: Kotal-e-Khain near Kabul, (80 tons capacity), Herat (110 tons capacity), and Hairatan near the Uzbekistan border (120 tons capacity). The unloading and bottling capacities at these plants are unknown, but these storage capacities seem small in comparison with the estimated overall LPG demand. LPG is sold to final consumers in cylinders with capacities of 10, 20, and 40 kg.

## 7. Coal<sup>4</sup>

Like all other energy products in Afghanistan, the demand for coal is very extensive, however the coal production that solves the country's demand seems extremely low... The table below illustrates the production and consumption position of coal since 1980. The Afghan coal industry is operating at low production rates, less than 300,000 tons reported per year; devastation of more than 3 decades of war and years of neglect, has affected

<sup>4</sup> This section is taken from the work of Mary Louise Vitelli.

very seriously the Afghanistan's coal mines. The supply of coal is essential for domestic energy/heating and industrial uses. Based on studies and laboratory analysis that has been fulfilled concerned with the coal mines is indicative of the fact that Afghanistan has got tremendous coal deposits that exist in high level quality. And it needs to be explored further. This operation can be completed within 3 to 5 consecutive years. The preliminary studies indicate that the coal deposits are hundred times further than the preceding figures and till now approximately some 40 mine deposits have been identified in 80 areas of Afghanistan.<sup>5</sup>

Until the end of 2006, Afghan coal operations were primarily contained in state enterprises of Northern Coal Enterprise and Sabzak Coal with oversight of the Ministry of Mines. Following the enforcement of mining material law, a number of coal mines including Karkar, Dodkash, Sabzak of Herat, Chalaw of Kabul province, Parsa of Ghorband district have been leased to private sectors through biddings. Also it is intended that tens of other coal mines according to government economic policy to be submitted to private sector for exploration and exploitation, through which ground will be prepared for establishment of private companies having the right of mining especially in the sphere of coal and cement. In May 2007, President Karzai announced the establishment of a Coal Commission aiming at evaluating and studying coal for generation of thermal electricity. As the commission in its initial gathering considered coal throughout the country and strongly affirmed its significance as an important fuel resource for power production and responding other industrial demands. Although Afghanistan is seriously in need of energy, no programmatic assistance has been provided to the Afghan coal sector.

*Coal deposits and cost:* according to preceding studies, in general terms there are 11 coal mines in Afghanistan the total number of which fortunately

reaches 40 mines at present, as majority of that are under exploration and exploitation. Considerable coal reserves have yet to be explored in Afghanistan. Coal is used in these mining areas as well as transported into Kabul and other cities; transport of coal is generally conducted by private market entities although some mines maintain their own transportation as well. The current price of coal is indicated to be \$65-\$90 per ton depending on transport costs – the actual coal price per ton is estimated to be around \$25-34. In terms of regional coal costs, this is high.

The health and safety conditions at the mines, many of which are underground, are horrific. An example is the ongoing fires at the Dahne Tor coal mine. US Geological Survey (USGS) experts visited the site in 2006 and indicated that unregulated mining observed is conducted in a seam that is several hundred feet (stratigraphically and topographically) higher than the main seam that was mined decades ago. The main mine was semi-mechanized, but everything is now collapsed, attributed by Afghan coal managers to landslides, poor technical oversight and general subsidence. It is estimated that millions of dollars are required to sufficiently upgrade the health and safety conditions at these mine operations. Longer-term strategies for growth in the Afghanistan coal sector remain several years away but consideration of coal power is underway; the Ministry of Mines has included a 100MW coal fired power plant in its 1386 budget figures; this presents interesting inter-ministerial issues as the Ministry of Energy and Water is responsible for state power generation which is implied in this budget proposal. The confirmed quantity and quality of coal resources remains relatively unknown but appears good. *Coal Uses:* Afghan coal is primarily used for home cooking and heating needs. The estimated demand for coal in Afghanistan is approximately 250,000 tonnes per year (for residential, commercial, and light industrial uses nationwide). Over the next three years it is expected that demand for coal will also increase as a result of the manufacture of cement

<sup>5</sup> Emergency Mine Rehabilitation assessment, World Bank, 2004.

and possible coal power development. Therefore, recovery of the cement industry will significantly alter the total demand for coal. Mechanisms are not in place to transparently and rapidly address winter coal issues.

**Coal for power:** In addition to the Aynak copper power needs, Government has begun to assess the power needs of the proposed Hajigak Iron Ore deposit as well as simply the generation of coal for power to supply the central and western parts

of the country that now have no or limited power access. This is a topic where both the Ministry of Mines and the Ministry of Energy and Water have important roles but have yet to determine strategic priorities for development of coal for power including methods to attract sustainable investment. Opportunities such as this argue for the development a cogeneration policy and simplified power purchase agreements for co-generated power.

(million short tons)

Table 6. Coal Energy Data

Coal	1980	1990	2000	2001	2002	2003	2004	2005
Production	0.131	0.116	0.089	0.092	0.096	0.099	0.103	0.099
Consumption	0.131	0.116	0.089	0.092	0.096	0.099	0.103	0.099

Source: the US Energy Information Agency

## 8. Rural and Renewable Energy

Renewable energy offers the greatest hope for Afghanistan in general and rural energy in particular. Renewable energy includes hydro, solar, wind, geothermal, biomass and wood.

Hydro, both large and small, represents significant untapped resources. According to the ADB, there is 18,400 MW of untapped hydro potential in the country<sup>1</sup>. Afghanistan has excellent wind potential in many areas and is economical compared to diesel as shown in the table below.

Not all of this potential wind energy can be economically converted into electricity because of a number of factors such as distance from population centers and wind speed. However, the first initial survey indicates that there is significant potential which can be tapped at around US\$ 0.09 per kWh.

There is significant solar potential but it still

Table 7. Wind Potential

Wind Resource Utility Scale	Wind Class	Wind Speed m/s	Total Capacity Installed (MW)
Good	4	6.8-7.3	75,970
Excellent	5	7.3-7.7	33,160
Excellent	6	7.7-8.5	33,100
Excellent	7	> 8.5	15,800
Total			158,100

Source: National Renewable Energy Laboratory remains a high cost energy resource for electricity. The Indian Government has funded a solar village initiative. While solar PV is expensive compared to the cost of generation for other alternatives, there is strong evidence that with the proper enabling environment of micro credit and training, solar home systems are a viable electricity source<sup>2</sup>. Solar cookers have shown significant promise in other countries and may have widespread application here.

<sup>1</sup> Renewable Energy in Afghanistan, Regional Economic Cooperation Conference, Ali Azimi, 2006.

<sup>2</sup> For example, according to Micro Energy International solar PV in Bangaldesh cost between US\$ 0.45 to US\$ 0.60 per kWh. Despite this high cost Grameen Shakti 70,000 solar home systems between 1996 and 2004.

Solar cookers were deployed in Afghan refugee camps in Pakistan.

There are many environmental benefits from using renewable energy such as reduced emissions (both indoor and outdoor) but the development of renewable energy must also consider the potentially negative environmental impacts. It is important that EIA guidelines be followed and the as with any energy project, public debate is an important tool.

There is an overwhelming view that rural areas need electricity and that providing access is the best use of resources for energy. An Asia Foundation survey in 2006 concluded that lack of reliable electricity at the local level was the second most important problem behind unemployment. When survey respondents were asked that what the largest problems at the national level were, they have cited electricity as the ninth most important problem. The Asia Foundation sample was not representative of the country from an energy perspective and used a definition for rural that obfuscates the real patterns of importance in planning development assistance<sup>3</sup>.<sup>4</sup> The results from other countries consistently indicate that there is a hierarchy for demand to services and electricity is usually further down on the ladder than services such as an all weather road, water supply, schools, and clinics. For example, if the preponderance of survey respondents already has access to road, water and schools, then electricity may well be their next choice of service. In rural-remote Afghanistan, if Afghans are similar to the peoples of the region, then access to electricity will not be their most urgent priority.

<sup>3</sup> According to their survey, 49% of rural respondents had access to electricity and 89% of urban respondents had access. Their sample was not representative of the country with regard to energy access. In part, what they call rural actually represents sizable population centers. Moreover, their question did not ask if access to energy was an issue but rather the extent to which energy is a problem.

<sup>4</sup> *The distinction between rural and urban in Afghanistan also causes blurring of responsibilities between MEW and MRRD and so we use the term rural-remote to denote those areas of very low population density that are far removed from population and commercial centers and lack access to basic services. More will be developed on this later in the strategy.*

Additionally, experience the world over has provided an important lesson with regard to blindly providing access to electricity. There is no guarantee that increased access to electricity will bring economic benefits. Simply look around in Kabul and other urban areas where residential access has increased. If access to electricity is not targeted to or coupled with income generating activities, then rural access brings lighting and little else.

## 9. DEMAND

Although there is little data for Afghanistan on rural energy use, inferences can be drawn from similar countries in the region. There is a tendency to assume that grid connected electricity offers the best form of energy for rural populations. Experience throughout the world has shown that there is a progression in the use of energy. Due to the dispersed nature of the rural population, renewable energy offers the best solution for electrification for the majority of Afghanistan's rural population that currently does not have access to electricity and has no real expectation of connection to the grid<sup>5</sup>.

It is very important that the economic conditions and opportunities of rural population be fully understood when devising a rural energy strategy. Too often donors and Government officials have blindly followed a policy of rural electrification. The result has been much higher cost energy delivered than people can afford and little, if any, associated economic activity. The goal of increasing energy is poverty reduction and economic growth. Electricity alone in rural areas is unable to do that job.

What is not known about rural Afghan's economic and energy characteristics? First, rural Afghani's are poor by most countries' standards. "Over 20.4% of the rural population cannot meet

<sup>5</sup> *Government of Afghanistan; Ministry of Energy and Water: Policy for Renewable Energy Rural Electrification, December 8, 2006.*

the minimum level of dietary energy required to sustain a healthy life.”<sup>6</sup> Unemployment is rampant. Average household income is estimated to be no greater than \$231 a year.<sup>7</sup>

Probably less than 4% of rural households have access to electricity<sup>8</sup>. Of those with access, 7% use electricity for lighting. Kerosene lamps are the major source of lighting, representing roughly 86 percent. It is highly likely given what is known about other countries, that the main source of cooking fuel is from self collected fire wood from which there is no monetary outlay or charcoal. This information is valuable because it tells us how much of a rural household’s money income is devoted to energy. Using detailed data for Balochistan, the average rural household spends only 3.5% of its budget on energy and this includes imputed or noncash outlays. Clearly, for many families on the lower end of the income spectrum, the vast majority of energy services are self supplied – that is through the gathering of fuel wood, crop residues, and other biomass. Energy expenditures were dominated by wood, charcoal, and kerosene. Wood and charcoal are used mainly for cooking and heating, while kerosene is the main source of lighting. Rural Afghanistan is similar.

Extreme poverty in rural areas also is related to lack of income earning opportunities. The productive use of energy helps reduce poverty by providing alternative sources of livelihoods and increase educational and training opportunities. The remoteness of rural locations and the rough terrain make expansion of the electricity grid into these areas economically infeasible. Therefore, the application off-grid technologies to these areas—including renewable energy resources—and other forms of energy is the primary focus of IROA activities.

<sup>6</sup> ANDS Macroeconomy and Poverty Diagnostic, Chapter 7 This was based on the ratio of rural household income to urban household income in Pakistan. Clearly, the rural population of Pakistan is on average better off than that of Afghanistan.

<sup>8</sup> AEIC <http://www.afghanenergyinformationcenter.org/Rural.html>

## 10. SUPPLY

There is no reliable data on traditional energy use in rural Afghanistan. The bulk of commercial energy is supplied by kerosene, Hydro power and diesels. Hydro, wind and solar offer opportunities for small scale supply. Following hydro, solar energy has the greatest potential as a renewable energy source, but cost remains a major barrier. Estimates indicate that in Afghanistan solar radiation averages about 6.5 kWh per square meter per day and the skies are sunny about 300 days a year. Consequently, the potential for solar energy development is high, not only for solar water heaters for homes, hospitals and other buildings, but also for generating electricity. In addition, some 125 sites have been identified for micro-hydro resource development with the potential to generate 100 MW of power.

Other renewable energy technologies, particularly micro-hydro and wind energy, have broad applicability within rural areas of Afghanistan and offer employment opportunities directly through operation and maintenance requirements, and indirectly through businesses like agro-processing that provide off-farm work.

The IROA, primarily through the Ministry of Rural Rehabilitation and Development in cooperation with the MEW has developed projects to promote micro-hydro development in rural areas. In

addition, under the US National Renewable Energy Laboratory, wind mapping has been undertaken for many parts of Afghanistan as a basis for developing individual projects. The data indicate good potential for generating wind electricity in several parts of the country. The lead institute to support development of these resources in Afghanistan is the National Renewable Energy Research and Development Center, a part of MEW.

Hydropower, solar, wind and biomass offer the most potential to contribute to energy

supply. Development, however, requires sound institutional and financial support, sustained commitment and a long-term development horizon. Use of renewable energy is beset by a number of factors, including high upfront costs,<sup>9</sup> lack of suppliers, inadequate financing mechanisms, and weak institutional and technical capacity.

## 11. Afghanistan as an Energy Transit Route

Due to its location between the oil and natural gas reserves of the Caspian Basin and the Indian Ocean, Afghanistan has long been mentioned as a potential energy route. This might include power transmission via high tension lines, or perhaps eventually a gas pipeline.

Afghanistan is well positioned to be a transit route for electricity produced in CAR countries and exported to South Asia, and perhaps eventually it might also become a net exporter of power produced from its own hydro, natural gas, and coal resources. Efforts are currently underway to increase electricity imports from Uzbekistan, Tajikistan, Turkmenistan and Iran and to upgrade cross-border transmission links. Development of a regional power network with Afghanistan as a transit route between CAR and South Asia is an important potential medium-term objective.

At the present time, with support from the ADB and the World Bank, the four countries of Tajikistan, Kyrgyzstan, Afghanistan and Pakistan are actively exploring construction of a high tension line that would transmit 1300 MW of power from Central Asia through Afghanistan to Pakistan, with Pakistan receiving 1,000 MW, and Afghanistan gaining 300 MW. Construction of such a project would directly address Afghanistan's need for power, and might also help to lay the groundwork for an eventual natural gas pipeline.

<sup>9</sup> For example, estimate for Photovoltaic electricity, as per MRRD (Mostafa Torkan, May 24, 2007) is \$12,000/kW, as compared to: (i) Micro-hydropower at \$1,200/kW and Diesel generated power at \$500/kW.

During the mid-1990s, Unocal had pursued a possible natural gas pipeline from Turkmenistan's Dauletabad-Donmez gas basin via Afghanistan to Pakistan, but withdrew after 1998. The Afghan government has recently tried to revive the Trans-Afghan Pipeline (TAP) plan, and has held talks on these matters with Pakistan, and Turkmenistan. Little progress appears to have been made. The President has stated his belief that the project could generate \$100-\$300 million per year in transit fees for Afghanistan, while creating thousands of jobs in the country. Given the obstacles to development of a natural gas pipeline across Afghanistan, it seems unlikely that such an idea will make any progress until the security position is resolved. The estimated cost of the pipeline is \$2.5-\$3.5 billion which represents a further obstacle to its implementation.

**CASA-1000 and Proposed Power Levels.** CASA-1000 is a proposed transmission system to transmit 1,000 Megawatts of surplus electricity from Tajikistan and the Kyrgyz Republic to Pakistan, with power transiting through and energy deliveries happening within Afghanistan. If it goes forward, it would start operations circa 2011. Kabul would have a substation, which initially would receive approximately 100 MW going up to about 300 MW by 2016. Over the life of the project about 90% of the power would be used by Pakistan while, 10% would be taken by Afghanistan.

With 562 km of HTDC transmission, Afghanistan has the largest share of CASA 1000 transmission lines, representing about 52.1% of the total project costs. Total estimated project costs are \$545.6 mil of which Afghanistan's allocation is \$284.5 mil. Afghanistan would receive common equity of \$59.8 mil and begin receiving dividends following a grace period. Current analysis indicates a return of 16% on equity by year 2033. In addition, Afghanistan would begin receiving a 52.1% share of Transit Fees once CASA-1000 becomes operational.

## 12. Energy for the New City at Dehsabz

Guiding the energy strategy for Dehsabz is the Trias Energetica concept comprising three pillars: Reduce energy demand to the lowest rate possible; supply the energy that is required from sustainable resources; and, where fossil energy is required, use it as efficiently as possible. Although Afghanistan has one of the lowest per capita energy consumption rates in the world, that rate is expected to increase to a level comparable to that of Kazakhstan and Turkmenistan over the next 30 years. Energy demand will increase as the city grows, so the energy supply must keep pace with the anticipated demand if project momentum is to be achieved and maintained. Consequently energy generation and distribution infrastructure will be a priority in each construction phase.

Reducing energy demand is a design consideration incorporated in every building and system in DehSabz. From the use of concrete core activation methods to heat and cool floors walls and ceilings via geothermal sources, to the correct solar orientation of each building, the demand for energy is minimized. Energy that is required is generated as much as possible through sustainable means including hydro-electricity, micro hydro-electricity, passive and active solar generation, biomass and refuse combustion, deep geothermal power. But, as exciting as the possibilities of zero ecological footprints through sustainable energy production are, there will be gaps in the energy production cycle that will have to be filled by diesel generators. But even here sustainable technologies can be applied. Afghanistan is searching for replacement crops for Opium Poppies so as to ensure sustainable livelihoods in rural districts. The production of biodiesel for the generators will require a yield of approximately 42,000 dry Tonnes of oil seed per year. Combined with the biodiesel requirements of other cities and local rural requirements it is conceivable that the production of biomass for fuel could gradually replace poppy cultivation in large parts of the nation.

The energy strategy includes the concept of a robust network, able to withstand the rigors of the climate and the terrain. Traditional power networks operate on the concept of centralized production and wide area distribution, making them vulnerable to environmental effects, system defects and, if the generation capacity is outside the nation, market effects. The Dehsabz energy strategy is founded on the principle of widely distributed and diverse generation, coupled to network enabled but localized distribution. In effect energy is consumed as close to the point of production as possible, reducing losses in the transmission system while reducing the expense and engineering required in a high tension distribution system. The power grid is networked however so that power can be distributed among the districts at peak times and to mitigate system failures or environmental effects.

Such a fully integrated and sustainable energy network has never been built before, thus Dehsabz has the potential to become a world leader in the field, showcasing leading edge technologies. The national prestige accruing from such a project will generate national pride and help to restore Afghanistan to its rightful place as a valued regional trading partner and economic ally.

## INSTITUTIONAL PLAYERS

Responsibility for energy is complicated; at present, four ministries have portfolios that include direct engagement with the energy sector and its development in Afghanistan:

- Ministry of Energy and Water (electricity generation (hydro, imports), transmission, distribution)
- Ministry of Mines (oil, gas, coal)
- Ministry of Rural Rehabilitation and Development (rural electrification)
- Ministry of Commerce and Industries (liquid fuels)

The Ministries maintain Kabul headquarters and regional offices (i.e., MoM has seven regional offices) in addition to state owned enterprise

offices throughout the country (i.e., the Ministry of Energy and Water (MEW) oversees DABM that maintains 19 regional “breshnas” or operations). A fifth ministry, the Ministry of Urban Development, is engaged with energy in two forms: (1) street lighting primarily in Kabul and (2) heating<sup>10</sup> of the five Kabul-based “Macrorayon Apartment blocks” constructed during the Soviet era. Until late 2006 there was weak coordination of energy related development among these ministries. Coordination has continued to be weak through 2007. Coordination may improve somewhat in the years 2008 – 2010.

In addition, the Ministry of Finance plays an integral role in determining and agreeing to development and national budget funds for energy-related projects. The Ministry of Economy was identified in August 2006 to lead and coordinate the above ministries as members of the Inter-Ministerial Commission for Energy (ICE) discussed below. Finally, the Cabinet of Ministers and High Economic Council of Ministers (comprised of key economic ministers) have undefined but definite roles in reviewing energy project selection, funding levels and approval at various times to various degrees. Parliament’s Economic Committee has included energy in its portfolio and conducted occasional meetings with energy ministers and their staff.

There are eleven state owned enterprises operating in the energy sector. They include companies such as DABM and Afghan Gas.

The Inter-Ministerial Commission for Energy (ICE) was established by a Presidential Decree signed in December 2006 as the coordinating and policy making body for energy sector activities. Chaired by the Minister of the Economy, it includes the Ministries of Energy and Water, Finance, and Mines as core members and the Ministries of Commerce and Industry, Foreign Affairs, Urban Development and Rural Rehabilitation and Development as ad hoc members.

The establishment of ICE was designed to help the Government understand, support, design, and monitor energy development based on

<sup>10</sup> District heating was installed as part of the initial construction.

commercial principles. It has oversight of energy sector policy and infrastructure investments and coordinates support from development partners. ICE brings together a wide array of government and donor interests to assure coordinated action and practical planning. It is not responsible for project implementation but develops sound policy in line with fiscal and policy priorities and international standards. ICE is supported by an ADB grant, which includes formation of a commercial advisory team within the Commission that assists the Government in identifying energy investments and shaping ongoing projects. It also assists the Government in agreements to stimulate private sector investment. The Ministry of Finance is the executing agency for the project.

In addition to the above established institutions, the following advisor positions and national programs play a role in energy sector development in Afghanistan:

- Advisor on Mines and Energy to the Office of the President.
- Afghanistan Investment Support Agency (AISA).
- Afghanistan National Development Strategy (ANDS).
- Afghan National Standardization Authority (ANSA).
- MRRD’s National Solidarity Program (NSP)
- Priority Reform and Reconstruction Program (PRR)

The complexity of this institutional framework contributes to the difficulties in developing an effective strategy for the sector and in implementing and monitoring sector rehabilitation and reform measures. Attention to sector governance aimed at streamlining and combining functions within the ministries with the ultimate goal of reducing the IROA’s direct involvement in the energy sector in favor of increased private sector participation need to be an important part of the IROA’s overall Energy Sector Strategy.

## **LEGAL, POLICY AND REGULATORY FRAMEWORKS**

MoM laws and regulations in accordance with the country's constitution form an appropriate basis for attraction of investments.

There are three energy laws:

- Power Consumption Law of 1982; addresses power imports, generation, transmission and distribution;
- Hydrocarbons law has already been dispatched to the parliament for approval.
- Coal: Minerals Law of 2005; regulations to be drafted in 2007-08. Additionally, the Environment Law has been in force since January 2007 and this provides a framework for reviewing projects and their impact on the environment.

## **DONOR PROGRAMS AND PROJECTS<sup>11</sup>**

While there are many donors involved in all aspects of energy production, the largest are the World Bank, the Asian Development Bank, Germany, India and the US. The Table below is a summary of the donor participation in the electric power sector according to Afghanistan Energy Information Center (AEIC) as of mid-2006. Additionally the ADB is involved in the gas field rehabilitation at Sheberghan and WB is supporting coal mine feasibility study. The WB has also sponsored studies of distribution systems for major load centers in the north and has planned similar work in the southern cities of Kandahar and Lashkar Gah once the security situation there has stabilized. Also as indicated in the Table, the donors are active in both actual infrastructure projects as well as in institutional and capacity building efforts.

More recently there have been projects to upgrade the distribution systems at Lashkar Gah, Qalat, and Aybak under billion, depending on the country's absorptive capacity.

The WB is intensively involved in the power sector. It has a five-year plan totaling \$1.2 billion, depending on the country's absorptive capacity. The WBs plan has the following goals for 2008:

- Rehabilitate 94MW of hydropower capacity;
- Establish 25,000 new connections in Kabul;
- Integrate the Energy Programme with the plans for the new city at Dehsabz
- Rehabilitated medium voltage network in Kabul and Mazar-e-Sharif;
- TA in energy sector, including the corporatization of DABM;
- Trade facilitation to encourage energy transfer from Central Asia; and
- Continued involvement in NEPS.

The ADB has also been very active in the energy sector: As a total amount of 12 USD has been allocated in grant for testing and preparing gas wells aimed at settling the requirements of the gas factory of 100 megawatt turbine based in Sherberghan. Also, Afghanistan

Development Bank(ADB) has allocated another 24 ml USD for rehabilitation of gas infrastructures that is 12 for rehabilitation of gas wells and the remaining 12 ml will be for exchange of gas delivery network from the gas based area of Khawja Gogerda till power and fertilizer factories with a length of 100kms. Loan 2165AFG/Grant 0004AFG Power Transmission and Distribution Project (\$50M), and iii) Loan 2304AFG Regional Power Interconnection Project (Afghan side\$35M from ADB out of the total project cost of \$55.5M (in Loan 2303 TAJ, \$21.5M from ADB out of the total project cost of \$54M)).

ADB support has been vital in implementing:

- A capacity-building and training program for the MEW and its enterprises;
- A Project Preparatory Technical Assistance (PPTA) for small and medium hydropower development;
- A capacity-building TA at the MEW;
- A hydropower and transmission project; and
- Continued support for NEPS and the Priority Reform and Restructuring Program.

<sup>11</sup> This section draws heavily from LBG/BV Needs Assessment Infrastructure report.

### A. Rural Energy Donor Operations

At present, about 650 villages are supplied with electricity from photovoltaic (PV), through a program funded by the National Solidarity Program (NSP) and under the auspices of MRRD. The NSP is a nationwide community-driven development program run by the Ministry of Rural Reconstruction and Development (MRRD) and funded by various bilateral and multilateral donors, primarily through the Afghanistan Reconstruction Trust Fund (ARTF). NSP is supported by non-government (NGO) partners that facilitate the election of Community Development Councils (CDCs) and help the councils to identify community development projects. NGOs are contracted as facilitating partners to assist communities in the technical and financial implementation of projects that for energy have include micro-hydro and diesel power installations. NSP's partners have identified over 3000 rural energy projects. NSP has funded around 1700 diesel generators and 500 micro hydro plants.

Other donors (e.g., Government of India) and NGOs (e.g., Norwegian Church Aide) are active in this area. The private sector also is encouraged to participate and invest in rural electrification and deployment of energy efficiency and renewable energy technologies. Although, NGOs and donors provide much assistance, there appears to be no clear IROA policy for rural electrification or for promoting private sector participation in rural energy projects; also coordination among ministries and other project participants' needs improvement.

### THE ROLE OF THE PRIVATE SECTOR

Throughout the world, the role of the private sector in energy is growing and is significant in most countries. In Afghanistan, it is virtually nonexistent. The roles of the private sector vary from managing government owned assets to outright ownership and operation. There are examples where all these mechanisms coexist in one country. There are other examples where countries have chosen one model and others

where the country transitions over time from the simplest model (management contract) to complete ownership and operation.

To be sure, there are obstacles in Afghanistan to greater private sector involvement, primarily to investment, but some of these obstacles can be overcome or offset with innovative mechanisms. The private sector can be called upon to manage, operate, invest and/or own energy entities and operations. Each different mechanism has its advantages and disadvantages. Often, there is a progression from management through ownership that takes into account the current situation. In the electricity sub-sector for example, it is highly unlikely under the current security, institutional, policy and legal/regulatory situation that private investors will be attracted to invest in a large-scale power plant. However, until these issues are resolved, there are many other ways to use the private sector. Billing can be outsourced. The construction arms of DABM could be sold off, allowing DABM to focus on core operations. Following DABM's commercialization, distribution could be given on a management contract. Individual power plants could be given on management contract. There are a variety of mechanisms available now for the IROA to tap the private sector as it prepares the enabling frameworks and other requisite mechanisms to foster full private sector ownership and operation.

One of the questions that have been posed in this strategy exercise is whether or not DABM (and other SOEs) should be unbundled. In this context, unbundling has meant the separation of the utility into different operating units and the privatization by sale of one or more of those units or ownership unbundling. For example, the distribution part of DABM might be separated into several smaller distribution companies and then sold as could be generation. The empirical evidence is mixed and does not strongly support one position or the other. In fact, many of the earlier proponents of unbundling have now taken a more conservative position that the virtues of unbundling depend upon numerous factors such as the size of the

market, the availability of substitutes, the cost of production and the overall structure and position of the sector within the economy. Simply put, when a country or market are small, unbundling may not achieve the results it will in larger, more mature markets. Afghanistan's market is quite small and immature. Ownership unbundling is the last stage of a four step process. At this time it is not possible because the other steps have not yet begun.

To be sure, the commercialization of DABM and other SOEs will require some unbundling. The first step is accounting unbundling or the separation of accounts of different functions. Functional unbundling will follow. This is the separation of functions within the company and the imposition of restrictions on activities such as physical separation of people, of management, separation of information that competitors may need separation of services that should be regulated from those that are competitive in nature, etc. Functional unbundling can either take place within the same company or be unbundled into an affiliate company. Functional unbundling also means accounting unbundling. Then there is legal unbundling but this "does not imply a change of ownership of assets and nothing prevents similar or identical employment conditions applying throughout the whole of the vertically integrated undertakings. However, a non-discriminatory decision-making process should be ensured through organizational measures regarding the independence of the decision-makers responsible." Legal unbundling will of necessity include accounting and functional unbundling. The strategy envisions that with time DABM and other energy sector SOEs will go step by step to legal unbundling. Some non-core functions will either be outsourced or completely divested, reaching the last step of ownership unbundling. The outcome of this strategy exercise is that there are more fundamental reforms required in the laws, rules and regulations and at DABM before large scale ownership unbundling should be considered.

## CHALLENGES, RISKS AND CONSTRAINTS

A number of challenges, constraints and risks, both real and perceived, associated with the ability of the IROA to develop and implement a comprehensive Energy Sector Strategy need to be addressed. These include the following.

### A. Private Sector Provision

The single most important challenge facing energy is attracting the private sector in a meaningful way. The sector is plagued by inefficiency and under investment. While second best measures can be put in place, such as the commercialization of DABM, the optimal solution is eventual private sector provision throughout the sector. Private sector participation in Afghanistan's energy sector is crucial to achieving the long term objectives of the sector. Efforts to attract private investment are incorporated within IROA programs and projects, but there is no coordinated approach to achieving this goal. In particular, options for private participation beyond equipment and supplies and management contracts need to be explored, and effective policies put into place. The IROA and donors, through the "one-stop shop" at the MEW, the Afghanistan Investment Support Agency, or other mechanisms need to address this issue and increase opportunities for local and international investors in the energy sector. The constraints facing greater private sector involvement include legal protection for private sector investors, lack of a regulatory environment, credit worthiness of a potential buyer, and general security.

### B. Capacity

Perhaps the single biggest constraint in the sector is the very limited capacity given the tasks that need to be accomplished. Both the Ministries and the SOEs are characterized by limited capacity and few trained/skilled personnel below the senior levels. It is imperative that basic managerial skills be developed and that training in accounting and finance also take place. Additionally, while a sector PMU is recommended, it is also important that project management, and monitoring and evaluation skills be upgraded at the Ministries and SOEs.

A lot of resources have gone into capacity building and the concern is how to make delivery more effective. First, general management, finance and accounting training are needed and this can take place as part of larger training programs not specifically focused on the energy sector, second, training efforts at the Ministries and SOE's need to be elevated. Third, for technical training, it is recommended to use developing country training venues, for example, in India there are the National Thermal Power Corporation and IREDA; ICIMOD in Nepal; TNB in Malaysia and the Egyptian Electricity Holding Company in Cairo. In petroleum, there are excellent training venues in the Gulf countries. Donors have helped to establish impressive institutionalized training programs in countries throughout the region and relying on these reduces cost and increases effectiveness.

#### C. Information and Planning

As mentioned in several places in this report, the lack of information severely hampers both analysis of current and historical information and planning. While the IROA and Donor strategy has out of necessity focused on immediate needs, the long run health of the sector and the economy depend critically on the collection, dissemination and evaluation of energy information and its use in planning.

#### D. Efficiency

The second most important challenge facing the energy sector is the efficient operation of SOEs and heavy reliance on subsidies to support these SOEs. Focus has been on expanding supply and major rehabilitation of generation and NEPS. The two principal constraints here are (1) the lack of complete and effective commercialization of SOEs such as DABM and (2) lack of priority given to funding these efforts. This is also the result of insufficient capacity.

#### E. Fuel

The cost of fuel to support electricity generation, especially for Kabul and until NEPS is completed,

will be about \$100 million/year and another \$25 million/year for SEPS. Funding and procurement mechanisms to obtain this fuel are not yet established and need to be addressed.

#### F. Imports

Prices and availability of power from other CAR countries also are uncertain. Imported power costs will probably be as much, if not more, than 4 cents/kWh or more in 2010 requiring an annual hard currency requirement of \$160 million and potentially placing a significant burden on the IROA. However, this is still much cheaper than diesel generation.

#### G. Cost Recovery

The average cost of power to residential customers currently is about 3.8 Afs/kWh. However to cover costs of supply, it would need to increase to 7 Afs/kWh or more<sup>12</sup>. The IROA's goal is to raise tariffs to cover 75% of DABM's costs, thus rising to at least 5.3 Afs/kWh or 28% by 2010. This will place a significant burden on households and represents a political risk for the Government, especially if service quality isn't improved significantly commensurate with tariff increases. To help offset this revenue shortage, efforts at DABM to improve billing and revenue collection and reduce losses (currently estimated at a minimum of 40%) need to be a primary focus.

#### H. Rural Energy

Addressing rural energy needs and expanding access to commercial supplies of energy is a daunting task, requiring a long-term commitment of resources, both financial and institutional and a coordinated approach to addressing this issue through regional and local organizations. Moreover, an evaluation and prioritization of rural energy resource and delivery options is needed to ensure the effectiveness of programs and projects, and a comprehensive monitoring and evaluation process is needed. The GOA, with the support of donors needs to review, evaluate and revise its rural energy programs to effectively address these needs.

<sup>12</sup> MEW puts the cost of power generation at US \$0.123 per kWh.

The biggest challenge in addressing effective rural energy needs will be to find innovative ways to couple energy service delivery with economic activities. Constraints are the low levels of income and lack of access to micro credit and the political inertia of providing rural, grid based electricity. Added to this is the need to rationalize rural electrification between MEW and MRRD so that each can best address the problems with their specific resources.

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Additionally, as households transition from biomass to other fuels for cooking, heating and lighting, efforts need to be made to consider the differential impacts and uses between women, children and men. These differences are significant and adoption and use of different energy sources depends on addressing the needs of these different groups.



## CHAPTER 2

# ENERGY SECTOR STRATEGY

### ENERGY STRATEGIC VISION

"An Energy sector that provides citizens of Afghanistan and drivers of growth in the economy with long-term reliable, affordable energy access based on market-based private sector investment and public sector oversight."

### Overall Energy Sector Goals

- Restructured sector governance and cost-recoverable operations
- Rehabilitation and expansion of the public power grid
- The attraction of private investment in the energy sector
- Improved rural energy access
- Development of indigenous resources for power and energy use

There is a time in Afghanistan's future when energy will be abundant, blackouts will be a thing of the past, and most of its energy needs will be provided directly by the private sector. Private investors will develop power plants, operate and own distribution systems and develop in situ resources, just as they have begun to do in many countries. But that is the distant future. For now, Afghanistan must work hard to increase energy production, doing so efficiently and in a cost effective manner. It can do this by building new capacity and by improving the efficiency of existing infrastructure, building capacity in its workforce, and reorganizing its energy operations to make them more transparent, increase operating efficiency and prepare them for eventual entry into the private sector. At the same time though, it must begin laying the ground-work for the eventual large-scale participation of the private sector.

Above all, this means that development of the electricity sector and the fuels that feed it are

the single most important priority in the energy sector!

India, a country with far greater security, more resources, a larger and better trained technical cadre and a much better established framework for energy and commercial ventures, began serious embarking on IPPs in 1992. The first IPP, a gas combined cycle by a local company, was commissioned in late 1996. Many foreign IPP developers such as Enron, Congentrix and AES all started the IPP process but only a handful finished. The bottom line is that today, 15 years after the IPP program started, most generation is still Government owned and most IPPs are Indian owned and financed. Afghanistan can learn from India's mistake and their success but can't expect to have large IPP projects in less time than they did. This is not to say that we can't and won't have private sector involvement; we must and we will. And the time to begin preparing for the private sector is now.

Afghanistan must not only focus on the immediate energy needs but turn attention to the longer run. It knows where it is going and but not necessarily how to get there. This strategy will address the questions of where we are going and how we get there. What this means for energy is that as we continue to focus our efforts on short run options to increase supply<sup>1</sup>, one must begin developing the foundation that will support long run sustainable growth. It means stemming the losses at SOEs like DABM, reorganizing them and commercializing them. It means investing in repair and maintenance and in loss reduction. It means making difficult choices among various projects of the different Government entities for the next two to five years. It means in some

<sup>1</sup> Increasing supply can come about through building new capacity, increasing imports or reducing technical losses.

cases organizing other Ministries' projects around electricity supply because this is what will drive the economy. It is imperative that in the near future more electricity be provided to more people in the most expeditious manner possible while being mindful of the long run economic impact. At the same time, Afghanistan must be laying the legal, regulatory, commercial and institutional foundations to unleash the power of the private sector when conditions are appropriate.

Afghanistan does not have an integrated energy strategy. Rather, it has a coal strategy, an electric power strategy, and a hydrocarbons strategy. In part, this reflects the government's treatment of energy as separate institutional and sector silos and, in part, it reflects the lack of institutional depth to see that energy markets and, perhaps, more importantly, that electricity supply projects are highly intertwined with other sub-sectors. In part it reflects the nature of assistance activities that focused on keeping the lights on and the vehicles rolling.

Integrated energy planning and policy development are key to a well functioning energy sector. But the IROA is not yet equipped to develop an integrated strategy, plans or policy analysis because the basic energy sector data is missing or rudimentary; energy-economic models do not exist; mechanisms for sharing information and collaborating are not in place. In short, work must begin on all of these so that better sub sector and integrated energy planning and policy analysis/formulation can take place. For example, fundamental gaps in data on energy supply and consumption and the developable resource base coupled with uncertainties in forecasts of key developmental indicators (economic growth, income, level and structure of energy demand, rates of population growth and urbanization) have made development of an effective sector strategy, including determining the effectiveness of short-term assistance activities, all the more difficult.

To date, the primary focus has been short-term, the rehabilitation of generation and expansion of energy services using high cost resources such as diesel. Long-term sustainability requires

promoting development of energy resources on a least-cost<sup>2</sup> basis in an environmentally sound and socially acceptable way. Now is the time to begin developing the tools that will help Afghanistan take a broader more long-term approach, to review options, and to look at developing least-cost energy resources for meeting Afghanistan Compact goals and objectives. This strategy incorporates projects that are already in the pipeline but also considers what policies, programs, and projects could be re-evaluated and given a new priority (e.g., sector governance) to ensure that they provide results at lowest cost and maximize impacts for a given level of assistance.

The broad goals for the energy sector are:

- Increased Private Sector Provision of Energy
- Better Sector Governance
- Increased trade with neighboring countries, focusing on the transmission of energy;
- Expand the availability of electric power;
- Develop a Master Plan for Rural Energy; and,
- Establish market-based tariffs with a clear timetable to phase out subsidies.

The best strategy at this time is a four paralleled prong approach. The first prong is to improve the efficiency of existing operations. This will be accomplished by physical investments such as the repair and renovation of existing energy infrastructure and the procurement of spares. It will involve changes in the operations of energy sector SOEs. The most important of these is DABM. Commercialization of DABM must be fast tracked. It must operate on a commercial basis with clear targets for loss reduction and officers and employees need to be rewarded for increasing efficiency and cutting losses and held accountable for performance.

<sup>2</sup> A correct least cost program would define cost in the economic definition of cost and not the financial definition. Thus, it would include the environmental benefits or costs and price externalities. In this manner, the least-cost method would produce an economically optimal solution. However, this is rarely ever done and cost takes on a purely private definition with the result that too much fossil fuel energy is consumed and produced relative to other forms of energy and, in general, too much energy is used in the economy.

Aside from the financial implication of continued losses, there are other sound reasons for focusing on this area. Adding a megawatt of power through repair and renovation is usually quicker and certainly cheaper than building new capacity. Progress is being made on building new capacity but repair and renovation is slower than it should be. For example, it is only now, in September 2007, that DABM has begun a limited campaign to identify losses. Training is urgently required in all areas from general accounting to advanced power system controls. The second prong must be to significantly improve sector governance and begin involving the private sector in various aspects of energy until the legal, commercial and security climate is conducive to transfer most aspects of the energy sector to the private sector<sup>3</sup>. The single most important governance measure will be the establishment of a multi-sector regulator under the Ministry of Economy. Arguments are frequently made that the private sector won't participate or that it should not participate until and unless significant reform and improvements have been made. The reality is different. Afghanistan can begin now by introducing management contracts for some aspects, outsourcing others and in the case of peripheral operations such as construction, they can be spun off. Small as these measures may be, they will invigorate the sector by tapping private sector resources and management. They will allow Government entities to focus on core activities and build a successful track record in private sector involvement. At the same time though, every effort must be made to lay the foundation of enabling laws, policies and regulations that unleash the full potential of private sector investment and operation of large scale energy facilities.

## THE THIRD PRONG IS RURAL ENERGY INSTEAD OF RURAL ELECTRIFICATION.

### A. Rural Energy in the Vision

Mpirical evidence from the developing world clearly indicates that household's transition to different forms of energy based on complex economic, cultural, technical and social relationships. People do not just go from cooking on firewood to cooking on electricity. Additionally, if they used a certain amount of lumens or btus in, for example, lighting, they do not use the same amount when moving up from candles to kerosene or from kerosene to electricity.

The findings discussed earlier lead to several major conclusions that have profound implications for rural energy.

First, given these income levels, some electricity services will need to be subsidized. As shown above, if rural households were putting all their energy expenditures into electricity, this would mean consumption of 13.5 kWh per month or enough to run two 60 W electric light bulbs for about 4 hours per day.

Second, residential energy use will be very limited and there is a definite transitioning in energy use that takes place. The order of use will most likely be lighting, radio, fan, TV, and then an iron or some other small appliance. It will be a long time before electricity takes on uses for cooking and heating in rural areas. This means that, until incomes rise significantly, only a small portion of energy expenditures will be directed to electricity. Rural residential consumers will consume very small amounts of electricity for the foreseeable future. Income generating activities WILL require other forms of energy as well as electricity.

Third, another problem exists because of low income levels and imperfect markets. Even if consumers were willing and able to afford the full cost electricity per kilowatt hour, they certainly could not afford the connection costs. This is called the first cost problem. For example, it has been estimated that the cost of purchasing a small solar home system (SHS) would be 61% of a typical

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<sup>3</sup> Clearly there is overlap between prongs 1 and 2. Increased efficiency will in some part necessitate improved Governance and the ultimate efficiency gains will be possible only with private provision. These commonalities notwithstanding, these two areas are different in their major focus.

rural Pakistani household's annual income. In essence, it means that even if consumers would benefit or save money by paying their monthly electricity bill, they could not afford the "first cost" of adopting a more electricity intensive consumption pattern. With rural Afghans spending the bulk of their income on food, they would be unable without some form of subsidy to purchase a SHS. This leads many countries to subsidize connection costs even if they do not subsidize consumption or to provide other forms of concessional financing.

Fourth, even when the first cost problem is overcome, the low population density coupled with the low income and low demand, will mean that either: (a) the consumption will need to be met by small modular units like solar; or (b) that a base load needs to be identified and developed such as a school or clinic or a larger scale economic use such as milling or irrigation.

Fifth, where incomes and consumption are unlikely to support electricity, then rural electrification may need to focus on finding or creating a customer that can act as the base load as well as subsidize the other users<sup>4</sup>. Then, productive uses of electricity that will reduce costs, increase incomes or both. This must be the cornerstone for most rural electrification activities. It also means that this productive use will subsidize other consumers. Productive use here can be defined as either income generating activities such as milling or irrigation or end use in clinics or schools.

There is an important difference between these two types of productive uses. In the first case, the productive uses are those that have economic impacts in the near term and those act to increase consumption and ability to pay because the demand for electricity grows as income increases. This first case impacts rural electrification in two ways. First, it acts as a base load with the consequent reductions in the cost of supply. Second, in the near term it increases economic

<sup>4</sup> This subsidization can be indirect in that the increase consumption allows economies of scale in supply and lower costs. For example, the project sponsor identifies the use of electricity for a grain mill and then uses mini hydro instead of solar. This will result in lower costs of production for all users. The subsidization can be direct when the base load user pays more than its marginal supply costs, thereby lowering the amount needed to be covered from other users.

activity in the area and increases demand due to the positive spillover effects. In the second case, those that consume education and health services will see an economic impact but it is usually in the distant future. The second use can benefit rural electrification by acting as a base load and reducing costs in that manner. All of this leads to some important implications for the third prong of the energy strategy. One, focus on income generating activities, Two, determine the type of energy and amount of energy best suited for that specific income generating activity. Three, follow an integrated model that combines energy provision with that of other services. The Global Village Energy Partnership provides an excellent platform for sharing experiences and lessons learned.

Finally, and most importantly, Afghanistan needs a program focused on rural energy needs as opposed to focusing on rural electrification and one that is focused on appropriate technology. The fourth prong is new supply of energy such as new investment in transmission, generation or distribution assets. It is principally concerned with the grid connected systems – generation, transmission and distribution assets. Priority activities here remain the NEPS and SEPS and the activities in other energy sub sectors that support them.

The overall policy framework for the sector is:

1. Restructured energy sector governance and commercialized operations
2. Rehabilitation and expansion of the Afghan public power grid
3. Expansion of rural energy and electricity services
4. Promotion of private investment to develop indigenous energy resources (including renewable, natural gas, coal and oil)

1 Public Power Grid. Emphasis on improved distribution and transmission of power will require funding from international donors and provides opportunity for private investment. Capacity building of Afghan staff to operate and maintain the system is essential.

2 Oil, Natural Gas, Coal. Immediate call for tenders to explore and develop known coal/natural gas reserves, noticeably for power, may be conducted..

3        Liquid Fuels. There is no plan to divest or assess the Liquid Fuels Enterprise under the Ministry of Commerce and Industries. Operating some 1600 gas pump stations and 1300 fuel trucks should provide considerable opportunity for private investment, improved quality of product and competitive pricing.

Renewable Energy. There is not a coordinated approach in place to support the development of renewable energy sources. A number of small renewable projects are underway, many are affiliates of larger programs – i.e., alternative livelihood programs in poppy growing regions. Use of solar water heating and lighting, water pumping and micro-hydro can be expanded and privately operated. In rural locations, communities have gathered resources to construct small hydro and limited solar facilities that support minimal but important light and small power supply. More emphasis required.

## NEEDS ASSESSMENT

Several needs assessments have been carried out. They fall into two broad categories. The first category projects demand and supply or given an assumption about economic growth, investigates how demand and supply will respond. The second category is prescriptive in nature that is it is based upon some policy variables and sets targets about how the sector should respond. For example, it sets a rate of household connections as a target and then uses Government policies and control of the sector to move towards that target. Each of these is useful but one major drawback is that ALL have been at the sub-sector level. “These studies have primarily focused on individual energy sub-sectors such as power or oil and gas, in some specific instances illuminating important aspects of the strategic development of the energy sector in the overall context of Afghanistan’s development agenda. At the same time, the sub-sector-based approach, while necessary to adequately address the technical complexities of the energy sector, has not captured the inter-related nature of energy sector developmental issues and, consequently, the trade-offs that may be entailed in the strategic decision-making process.”<sup>5</sup> This is a consequence of the fragmenting of energy

across institutions and the lack of comprehensive, integrated planning policies and procedures. In reality, no energy sub-sector can stand on its own but is highly dependent upon what transpires in the other sub-sectors. For example, a forecast of the demand and supply of hydrocarbons that does not at the least consider the demand and supply of electricity, a major consumer of hydrocarbons, will surely miss the mark. While as an academic exercise this may have little consequence, nothing can be further from reality when scarce human, institutional and financial resources are required to develop an optimal mix. In short, the failure to forecast and analyze on an integrated sectoral basis means suboptimal investment plans and operating conditions, and a lower rate of economic growth than would otherwise have happened. Thus, an Overall Energy Sector Needs Assessment does not exist and at this will be simply an aggregate of the individual sub-sector needs assessments.

## ELECTRICITY

The Afghanistan Compact developed at the London Conference in Jan-Feb 2006 defined energy benchmarks for Afghanistan:

“By end-2010: electricity will reach at least 65% of households and 90% of non-residential establishments in major urban areas and at least 25% of households in rural areas; at least 75% of the costs will be recovered from users connected to the national power grid. A strategy for the development and use of renewable energies will be developed by end-2007.”

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To achieve these goals, IROA and donor assistance has focused on actions to rehabilitate hydro and thermal generating facilities; increase power imports and develop PPAs with Central Asian countries; purchase small diesel generating sets for supplementing power supply in selected urban areas; develop selected transmission lines to maximize deliverability from domestic generation

5        World Bank Afghanistan Energy Sector Strategy  
2005

sources and increase use of imported power; and develop micro-hydro and other energy resources in rural and remote areas. Through these combined efforts, the supply of electricity throughout Afghanistan has increased by 66% albeit from a very low base. A key objective of these initiatives is to increase the number of

connections, adding about 850,000 residential and non-residential connections by 2010 to increase access in urban areas from an estimated 27% currently to 65% by 2010 ; and, country-wide from 6% currently to almost 25 % by 2010. By 2015 the goal is to increase urban access to 90% and achieve an overall national access rate of 33%.

Table 8. Afghanistan Compact Goals

Year	Number of Customers Residential	Number of Customers Nonresidential	Customer Additions	Capital Cost (\$ mm)	Peak MW Supply
2006	365,221	38,868			323
2007	485,058	51,621	132,591	132.5	429
2008	644,216	68,560	176,096	176.1	570
2009	855,598	91,056	233,878	233.9	757
2010	1,136,339	120,933	310,618	310.7	1,006
Total			853,182	853.2	

Notes: 33% annual growth in customers; \$1,000 cost per customer connection; 800 watts peak demand per customer.

The estimated cost of increasing customer access to electric power to meet Afghanistan Compact goals is \$853 million for the period 2006 to 2010. In addition, the cost of expanding generating supplies (domestic and imported) is approximately \$400 million. Therefore, on this basis the funding needed to meet Afghanistan Compact goals would be about \$1.2 billion for the period 2006-2010<sup>1</sup>, excluding the costs of developing the energy supplies when indigenous resources are used. Meeting these goals in relation to existing budget constraints necessitates developing an overall Energy Sector Strategy that will identify least-cost options to meeting sector requirements in the longer-term; maximize the benefits of IROA and donor initiatives; and increase participation and investment by the private sector. Information on Afghanistan's energy situation is constrained by a serious lack of good quality data. This hampers efforts to develop and implement a clear sector strategy. For example, ANDS goals are clear in the benchmarks that are to be met by 2010, including the percentage of urban and rural households

and non-residential establishments with access to electricity and 75% of the cost of power recovered through tariffs. However, data on the number of households in Afghanistan, on their income and consumption patterns and overall energy demand generally is not available or is of very poor quality. The same situation exists for non-residential establishments; for the cost of power delivered by DABM; and the cost of improving revenue collection in order to recover costs from customers. Until data collection and analysis capabilities are improved, the costs of meeting the ANDS benchmarks cannot be known with any certainty. Given this gap, the Energy Sector Strategy proposes to develop better quality and more complete data and modeling capabilities that are crucial to effective planning and to achievement of Afghanistan's overall national economic and energy sector goals. In this regard, a recent report prepared for USAID estimated electricity demand for Afghanistan for the period 2010-1020 needed to meet ANDS objectives<sup>2</sup>.

<sup>1</sup> Ministry Strategy (With Focus on Prioritization); Ministry of Energy and Water, September 30, 2006.

<sup>2</sup> Needs Assessment Infrastructure Report: Energy and Transport Sector; Infrastructure and Rehabilitation Program (IRP); Contract No. 306-I-00-09-00517-00; prepared for USAID, 2007.

Table 9 on the next page: East Electricity Demand for Afg 2010-2020

NEPS System Area	Required Generation (MW) (including losses)		
	Year 2010	Year 2015	Year 2020
Kabul System	671.6	1,066.9	1,206.8
Balance of Planned NEPS	272.2	405.0	473.4
Subtotal	943.8	1,472.0	1,760.2
Aybak	16.1	25.4	30.0
Khulm	20.0	31.8	37.6
Doshi	6.5	8.8	10.4
Charikar	10.5	20.9	34.1
Subtotal	60.1	94.9	112.1
NEPS with Intermediate Loads	1,003.9	1,566.9	1,872.3
Planned SEPS	160.4	251.3	296.3
Girishk	11.5	18.4	22.3
Qalat	77.9	123.7	146.5
Subtotal	249.8	393.4	465.1
Other Major Load Centers			
Jahalabad	86.2	103.1	121.8
Ghazni	44.9	71.4	84.5
Gardez	32.2	51.2	60.6
Heart	102.1	150.0	164.9
Subtotal	265.4	375.7	431.8
<b>TOTAL ESTIMATED DEMAND</b>	<b>1,519.1</b>	<b>2,436.0</b>	<b>2,769.2</b>

Source: Needs Assessment Infrastructure Report: Energy and Transport Sector; USAID, 2007

Based on available data and information, the results of this analysis are shown in Table 8. This analysis indicates that total electricity generation needed in 2010 is 1,519.1 MW, while MEW estimates that available generating capacity in 2010 will be about 1,200 MW. This indicates a potential shortage of supply of about 320 MW. The data also show a need for an additional 917 MW by 2015.

## PRIORITY POLICIES AND OBJECTIVES

Following from the broad objectives above and using the four prong strategy approach, priority policies to support implementation of the Sector Vision have been put forward. This section provide more detail on elements for an Afghanistan Energy Sector Strategy, including those that address overall energy sector needs (e.g., prioritizing projects based on a cost-benefit analysis) as well as sector-specific elements (e.g., electricity tariff reform and completion of the Sheberghan gas field development). The intent is for this Strategy to provide overall guidance on achieving Afghanistan's energy sector goals in a timely and cost-effective manner and to address five primary areas:

### Adopt policy that:

1. Recognizes the priority of electricity supply projects and develop the mechanism to ensure coordination among the other Government entities as required. This means viewing electricity supply projects on an integrated basis so that development of fuel supply and other required infrastructure is an integral part of the electricity project.

prioritizes projects on the basis of their time and cost focusing on:

- Reducing technical losses in transmission and distribution.

- Reducing demand through end use efficiency such as CFLs.
- Metering of existing cross border transmission.
- Expanding transmission capacity to neighboring countries.
- Rehabilitating the Sheberghan gas fields and construction of its solar power plant.
- Develop New Hydro capacity.
- And investment in oil, natural gas and coal infrastructure based on tenders using performance contracts and a permitting system.

(Greater detail on these and other priority programs are presented in detail in the sub-sector strategy areas.)

2. Energy Sector Governance is the single most important issue for the long run health of the sector. The enabling frameworks and implementing rules and regulations need to be established along best practice guidelines. Activities include:

3. Develop and adopt a modern, comprehensive energy law and then separate laws for electricity, oil and natural gas. Concurrently develop the implementing rules and regulations.

4. Adopt in policy and embody in law, the principle of private sector provision of energy. The overarching energy law should explicitly address the role of the private sector which role is further developed in sub-sector law.

5. Establish a Multi-Sector Regulator for electricity, coal, Petroleum and Petroleum Products and Water.

6. Develop an Energy Policy that establish guidelines for energy production and consumption

that is cross sector in nature, e.g. energy efficiency, cost recovery, environmental issues. The National Energy Policy should provide guidance on the role of energy in the Nation's economy and set guidelines for how energy will be used.

7. Establish procedures to ensure effective coordination among the different sector Government entities and sharing of data by these institutions.

8. Ensure that Government energy entities are effective by implementing capacity building programs and reorganizing these entities as and when their roles change.<sup>1</sup>

9. Improve the production and delivery of rural energy by clarifying the roles of MEW and MRRD and evaluating options for project development and ownership, technical support and pilot projects based on international best practices and attraction of private sector participation.

10. Enhance policy and planning and the effectiveness of donor support by strengthening Inter-agency cooperation and adopting tools that will allow integrated planning and analysis.

11. Develop and deploy tools to evaluate and prioritize options such as a least-cost plan.

12. Improve data collection and analysis.

13. Establish a comprehensive monitoring and evaluation program, and

14. Improving assistance coordination.

15. Accelerate private sector provision while an effective supporting framework is being put into place by such measures as:

1 As the private sector takes on increasingly more aspects of energy, Government's role will change to one of planning, policy and regulation.

16. Making an unequivocal commitment to involving the private sector including an aggressive time-table for action.

17. Recognizing that in the long run diesel power is too expensive but, in short run, it may serve as a stop gap measure. Explore a limited term IPP for diesel, say five years. This meets the immediate objective of getting power while developing some expertise in negotiation and power contractual instruments. It also has the advantage of restricting diesel power to a limited time period, time in which lower cost power can come on line.

18. Issuing tenders for private investment in IPPs based on a ceiling bulk power tariff (avoided cost) or some other method that might promote more competition in cost, and a "one-stop shop" window at the MEW.

19. Using "regulation by contract," management performance contracts and "light handed regulation" concepts<sup>2</sup>;

20. Issuing tenders for coal sector development based on a permitting system.

21. Expediting the commercialization of State owned Enterprises such as DABM; and,

22. Outsourcing activities now that can immediately benefit from private sector involvement such as meter reading and billing

#### **Establish a commercially oriented financial environment by:**

- Increasing tariffs (while maintain a life line rate or mechanism)

<sup>2</sup> Light-handed regulation is based on the Threat of Regulation providing an incentive on companies with market power to exercise self-regulation. Regulatory approval of rate levels resulting from arm's length negotiations, rather than calculated on a cost of service basis, and subject to challenge only under a complaint proceeding.

- Public awareness programs providing information about the link between the cost of energy and its availability.
- GoA to pay subsidy directly to the Utility
- Establish subsidized tariffs for the poor and ensure that they are targeted
- Require both Governments to pay the utility for all power that is has purchased and require the utility to settle its accounts with other Government entities. Given the initial hardship that this could impose, reconcile the accounts up to the value of accounts receivable from other Government entities. Similar treatment to other SOE in the energy sector.
- **Sector Regulation.** Significant change in how the sector is regulated is required. Steps are underway in hydrocarbons and more is required in electricity and liquid fuels.
- **Line Ministries.** As the energy line ministries shift from operating as production based to become policy-making regulatory agencies, staff capacity and in-house functions will need to be reoriented to market practices.
- **Ministry of Finance.** In order to ensure that the introduction of market-based contracting, a predictable royalty regime and tax payments are inherent to the hydrocarbons sector. Liquid fuel and petroleum product import aspects as well as tariffs for power all need to be considered. This strategy supports the establishment of a working group (likely under ICE) that will operate for 5 years to monitor and evaluate the performance of the sector vis-à-vis government return.

## A. Objectives

**1 Reform of Sector Governance.** This strategy supports the consolidation of energy planning and policy-making functions through the Inter-ministerial Commission for Energy (ICE) as well as improved line ministry staff capacity to plan and budget. The law of hydrocarbons was referred to the Parliament for probe into and approval while its regulations are still underway in MoJ that upon its enforcement, appropriate ground will be prepared for participation of private sector in this section.

**2 Institutional Reforms,** A new market paradigm is being supported for Afghan energy; significant institutional changes and relevant staff capacity is required.

- **Inter-Ministerial Commission for Energy (ICE).** Support of the government sponsored institution brings together the seven energy-relevant ministries, donors and private sector to review priority energy development aspects. Offices for ICE are established.

**3 Legal and Regulatory reform and standards.** Finalization of primary legislative and regulatory tools is essential. These include mining and hydrocarbons as well as drafting legislation for the electricity sector. There are no meaningful technical standards for operation are in place; these need to be urgently developed as well as staff capacity to implement them.

**B. Commercialization and/or divestiture of state and “quasi-state” assets,** Development of a plan that includes promotion of private operations will support a new operational market paradigm for the sector. Government will immediately assess its sector assets and a plan for liquidation, restructuring and commercialization or sale. In particular Government will provide more support for the corporation and commercialization of national power operations.

## **DESIRED OUTCOMES**

**1      Restructured energy sector governance/commercialized operations.** Improved governance can mobilize investment, mitigate corrupt practices and improve technical quality of energy supply. This strategy supports the shifting of government as energy producer to energy regulator with viable legal and regulatory frameworks that include the development of market-based power purchase and production sharing agreements. Market-based enterprise operations will support loss reduction, improved billing and collection, market procurements and efficient energy practices that result in more energy supply and cost savings.

### **2      Expanded Public Power Grid.**

Government has committed to improved energy access for the population. Through a series of large and small infrastructure improvements in the generation, transmission and distribution of electricity throughout the country, this objective is becoming a reality. The strategy supports the (1) rehabilitation and upgrading of Kabul and other key infrastructure areas (i.e., distribution – lines, substations, and meters); (2) development of the North East Power System (NEPS); to be followed by the South East Power System (SEPS), Western and Eastern Power Systems; (3) construction of new transmission and related distribution for Uzbek, Tajik and Turkmen power imports. The installation of a Dispatch and Control system as well as Reactive Power system will be under way in 2008.

### **3      Increased Access to Rural energy services.**

Micro-hydro, solar, waste and even small diesel power and energy generating sources will be promoted to improve rural access. Commercial operation of these services and technical standards will be encouraged to ensure cost-recoverability, sustainability and safety.

### **4      An effective enabling environment for private sector investment.**

A market-friendly enabling environment to facilitate private investment will be created. Key areas for investment in the near term: (1) power generation that includes new hydro power, natural gas and coal-fired power; (2) power distribution including lines, substations and metering; (3) power construction and services (i.e., outsourcing); (4) exploration and exploitation of coal, natural gas and oil; (5) installation and operation of rural energy services. Commercial contracts in the areas of accounting, project finance, legal and integrated resource planning will also be considered.

### **5      Reduced Poverty:**

Provide essential energy supply services that will help private sector development, job creation and poverty reduction. Investments in Energy sector will by itself create direct employment in the development of power plants, oil, gas and coal fields, the construction of grid systems and the commercial operations of the sector. Develop small energy installations that are highly successful in cost-recovery, and contribute to local economic development. Increase mobilization of the domestic revenues by improving governance in the energy sector, and stimulating private sector development. Improve public service delivery by providing greater access to electricity for urban and rural communities, and especially for the schools and health institutions. Maintain the subsidies for electricity cost for the poorest households. For details refer to Annex I (Action Plan)

Table 10. Desired short and intermediate term targets

Industry Sector	Short-Term (2-to-5 years)	Intermediate-Term (5 to 10 years)
<b>Cross-Sector Issues</b>		
Sector Governance	Modern Energy Law Modern Electricity Law Modern Hydrocarbon Law	
Sector Governance	Enabling Rules and Regulations in Support of new Energy Legislation	
Sector Governance	Review and reform sector governance to support restructuring and private investment	Significant involvement of the private sector
Improve GOA/ Donor/ NGO coordination	Through ICE improve coordination to increase effectiveness of assistance efforts	Monitor and improve as needed
Sector Governance	Functioning Sector Regulator	Fully Functional Regulator
Capacity Building	Sector capacity enhanced through training	Monitor and evaluate program; up-date as needed
Least-Cost Expansion Plan	Least Cost Expansion Plan for the sector through ICE	Up-date models& expansion plan on a regular basis
Needs Assessment and Data Base	Needs Assessment & data base at the Afghanistan Energy Information Center	Up-dated assessment and data base and modeling & assessment capabilities developed
Sector Governance		Integrated Energy Planning & Policy Analysis
Monitoring & Evaluation Plan	Incorporate an M&E plan for all assistance efforts	Evaluate and update as needed
<b>Electricity Sector</b>		
Corporate Governance	DABM operating on commercial basis Some areas in private hands	Management Contract for DABM (in whole or in parts)
Technical Losses	27.5%	20%
Collections	70% collection to billed	85% collection to billed
Private Sector Investment	Issue tenders based on ceiling bulk power tariff; “one-stop shop” for project approval; regulation by contract; & performance incentive contracts	Implement regulatory reform & institutionalize regulatory process; unbundled & privatize electricity sector
DAMB Commercialization	Complete commercialization; improve metering, billing & collection; implement management performance contract	Unbundle & Privatize
Tariff Reform	Complete tariff reform for DABM	Modify tariff structure & rates as needed
Power Imports	Complete PPAs to support expanded imports from CAR	Develop in accordance with least-cost expansion plan
Installed Capacity	850 MW (2011)	1,019 MW (2013)

Industry Sector	Short-Term (2-to-5 years)	Intermediate-Term (5 to 10 years)
New Connections	730,000	
Dehsabz	1.4 million connections by 2025	
<b>Oil &amp; Gas Sector</b>		
Rehabilitation of Sheberghan gas fields , construction of & power plant	Complete assessment of fields and issue PSA; rehabilitate infrastructure; issue tender for IPP; consider bundling with gas processing & fertilizer plant	Revise procedures as needed & issue new tenders for development of sector
Indigenous Fuels Development	Feasibility Study for CNG including stations and vehicle conversion	Develop CNG Infrastructure if cost-effective.
Complete feasibility study for oil refinery	Complete feasibility study for oil refinery as part of least cost energy sector plan	Develop refinery if cost-effective
Complete Tariff Reform	Complete tariff reform for gas sector based on economic costs of service	Modify tariff structure & rates as needed
Regulatory Reform	Establish National Energy Regulatory Commission	Capacity building and institutional strengthening as needed
Modify Hydrocarbons Law	Modify Hydrocarbons law to clarify roles & responsibilities of IROA and developers for oil and gas development	Develop rules & Regulations to complete implementation of Hydrocarbons Law
Private Sector Investment	Call tenders for instant services of exploration and exploitation of recognized areas of gas/coal aiming at attracting investments in the form of product division(PSA ) in the sections of energy production, construction of plants , gas/ fertilizer process	Complete sector restructuring and implementation of Hydrocarbons Law
Petroleum Imports	Improve control of imports and collection of import duties; enforce quality standards; increase storage capacity	Expand role of the private sector
<b>Coal Sector</b>		
Issue Tenders for exploration and exploitation of coal reserves	Issue tenders for private sector development based on a Permit System with independent evaluation team	Evaluate and up-date process as needed; issue new tenders
Approval of minerals law by the parliament	Implementing rules and regulations	
<b>Rural &amp; Renewable Energy Sector</b>		
Sector Reform	Consolidate all authority for rural energy development within the MRRD	Develop programs consistent with expanded role of the private sector
Develop Rural Energy Policy	Develop “light-handed regulation” and as a policy for rural energy projects	Monitor and up-date as needed
Renewable Energy	Deploy 10 MW of Wind Power	Deploy 50 MW of Wind Power
Renewable Energy	Geothermal Prospecting at 1 site	Geothermal Feasibility Study
Rural Energy	Rural Energy Master Plan and Rural Electrification Master Plan	Updated as necessary

Industry Sector	Short-Term (2-to-5 years)	Intermediate-Term (5 to 10 years)
Assess rural renewable energy technologies	Develop methodology to assess and deploy renewable energy technologies	Develop methodology and develop pilot projects based on assessment
Assess models for project ownership	Assess and develop models for project ownership, including coops, franchises, provincial or district entities	Assess and develop models based on maximum benefits
Assess models for technical support	Assess models for technical support, including university outreach; MRRD/ DABM district offices; franchises; district/provincial government	Assess and develop models based on maximum benefits
Pilot Projects	Develop & implement pilot projects to test best practices	Assess and develop projects and implement bases on maximum benefits

## INPUTS & OUTPUTS

- *Policy actions:* important policy actions in terms of institutional and capacity development, regulation and legislative activities and policy measures to support implementation of the energy sector's overall goals and priorities and achievement of the desired outcomes are: (i) integrated energy policy; (ii) overarching energy law and redrafting of the electricity sub-sector law along with the implementing rules and regulations; (iii) commercialization of DABM and operation on a commercial basis; (iv) institutional reform, including creation of a National Utility Regulatory Commission; (v) accelerate private sector provision through explicit policy and legislative cover for the private sector; (vi) service delivery standards and options; (vii) refocus policy to stress repair and maintenance, loss reduction and commercial operation equally with new investment; and, (viii) tariff reform with a slow but deliberate phase out.
- Programs: Key programs to support implementation of the energy sector's goals and priorities and achievement of the desired outcomes are discussed briefly below and in greater detail in Section V. The overall public investment need for the next five years is ??? The financing gap that will need to be covered externally (donors and private investments) is. A detailed list of programs, sub-programmes

and projects is part of the Sector Investment Program (Annex II).

- Indicative costs
- The energy sector program is projected to cost USD billion, or about USD m per year over. Funding is committed Leaving a balance

This section presents Major Programs and Projects by prong or focus area.

## PRONG ONE – EFFICIENT OPERATION OF INFRASTRUCTURE

- Fast Track Commercialization of DABM. Work here will also provide a model for commercialization of other SOEs in the energy sector. Begin loss reduction programs including metering of retail customers.
- Procure spare parts and fuel
- Repair existing transmission and distribution systems including rehabilitating and/or upgrading substations and distribution networks for towns under NEPS main transmission lines (estimated cost, US \$120 M), Kabul distribution grid reconstruction and extension (estimated cost, US \$ 250-300 M)
- Install meters for cross border transmission
- Repair existing thermal plants

- National Energy Conservation Program (NECP),<sup>1</sup> and (iv) implement complementary activities to achieve its targets which may include such measures as demand side management and other best practice energy efficiency measures. For details of projects refer to annex III.

## PRONG TWO – SECTOR GOVERNANCE

- Improved GOA, Donor & NGO Coordination. Effective assistance and achievement of long-term sector goals and sustainability require effective coordination and cooperation among all stakeholders. Donor planning on an individual basis is well developed; however, integration of donor plans with firm commitments for funding and well defined integration with energy sector ministries and other stakeholders needs to be improved. Specific attention needs to be paid to these issues within the ICE to ensure that ANDS goals are met efficiently and on time.
- Reduce Subsidies and cross-subsidies in both power and fuel. This will be done so in a way that matches improvements in the sector and recognizes the hardships that quick withdrawal of the subsidy could have. Universal service obligations should be directly funded through Government payments to the utility.

Subsidies are an important and integral tool of Government policy. Energy subsidies that provide a basic level of energy services to the poor exist in almost every country. So the issue is not whether there should be subsidies but rather who gets the subsidy and the how the subsidy is provided. Subsidies need to be identified

<sup>1</sup> To economize for cost-savings, people in Kabul have started using fluorescent bulbs (also called white bulbs), 8,11 and 18 watts; these produce as much light as 60-100 watts (regular) bulbs. White bulbs also do not produce heat and have a longer life, 6 months or more. However, white bulbs are expensive: 18 watts costs 120 Afs, as compared to 20 Afs for a regular 100 watt bulb.

and made transparent during the restructuring process and removed.

In 2004/05, the average tariff collected by DABM was only five cents/kWh, compared to an average unit cost of power production of about 12 cents/kWh. Currently, power subsidies cost the government \$56 M/year, which is unsustainable and undesirable.

Assistance is required to review the existing tariffs and develop a targeted subsidy plan and a phase-in plan for subsidy reduction. Assistance will need to include a public outreach program. This could be one of the first tasks of the regulator (See below). Capacity Building. Current efforts to train IROA energy personnel lack coordination and effectiveness. A comprehensive vocational training program to ensure future human resources adequate for the energy sector and to demonstrate evidence of a comprehensive, multi-disciplinary and multi-ministry approach by the IROA is required. Development of an Afghanistan Vocational Training Center is needed. The recently established National Capacity Building Program may be the proper entity to accomplish this task. Training will also support the commercialization of DABM and other energy sector SOEs. Additionally, all SOEs need training in basic management, accounting and finance.

- Improved Sector Governance. Currently, energy sector governance is spread among numerous IROA Ministries, agencies, and SOEs where effective coordination often is lacking. Moreover, the roles and responsibilities of IROA entities will change as sector restructuring and private participation advances and the role of the Government evolves from direct sector intervention to oversight and regulatory functions. Actions to privatize SOEs need to be completed and the IROA needs to review the roles and responsibilities of Ministries and other IROA entities in light of the structure and expanding private

sector role within the sector. Consolidation of functions and re-definement of roles and responsibilities among IROA entities needs to be addressed. Improved governance is more than just properly aligning Ministries and IROA entities. It includes the establishment of sector regulation, the increased role of the private sector, and integrated policy and planning. Almost all major reviews of the energy sector or sub-sectors conclude that it would be best to consolidate all energy operations under one Ministry, a Ministry of Energy. This is something that needs to be considered in the intermediate term.

#### A. Legal and Regulatory Reform Program.

Currently, there is only an embryonic legal and regulatory framework for the Afghanistan energy sector, which is insufficient to support restructuring and private investment. The laws are silent with regard to private provision of energy. This lack of explicit basis for the private sector will serve to increase risk and cost and delay the entrance of the private sector in a meaningful way. Norway is providing assistance to redraft the hydrocarbons law and it will be completed soon. Drafting of an overarching energy law and the electricity sector law is a top priority.

Government needs to make an unequivocal commitment to involving the private sector including an aggressive timetable for action. Amend the law to restructure the energy sector with a strict timetable specifically mentioning (a) sector restructuring, and (b) private provision of energy.<sup>1</sup>

Establish a multi-sector regulatory body (water, electricity, coal, and petroleum) independent of the energy related ministries. This program would support the creation and ongoing operation of a new Government Entity to regulate the sector. To jump start the process, a shadow regulator would be created composed of expert staff in key positions to actually perform day-to-day functions and train local staff on both on-the-job training and formal training. As local staff is trained, expert assistance would be reduced. This

serves the purpose of immediately providing regulatory assistance in country to establish the necessary frameworks and provide "guidance" so as to create a favorable environment for the private sector.

The lack of a regulator, independent from the Ministries that deal with energy, is an obstacle to efficient operation of the sector even if the operations are under Government control. Because of the importance of catalyzing private sector provision of these services (water, electricity and natural gas), the regulator needs to begin using a more French/Arabic model of regulation and evolve with the sector over time. Emphasis needs to be on acting as a watchdog of SOE commercialization and performance improvement, and providing the early technical input into the contracts used with private sector entities. One of the first activities could be to develop modern production sharing agreements. Develop and implement the organizational structure and staffing plan for NURC.

Recognizing the time to enact legislation and establish an effective regulatory authority, it may be appropriate to accelerate the process through a Presidential Decree that would establish the regulatory authority while legal and administrative issues are being resolved.

#### B. Private Sector Provision Program.

As mentioned earlier, the country can no longer wait to actively begin attracting the private sector to the energy sector. The enabling legislation, policy and regulation will be addressed through other efforts. This program is to establish a Public-Private Partnership Office to facilitate increased private sector involvement in the infrastructure areas beginning first with the energy sector. At a later date, it could focus on non-infrastructure areas. It would be housed in the Ministry of? And be responsible for developing the laws and implementing rules and regulations that are not specific to any sector but rather cross cutting, such as concession law or a BOT law. The PPP office would also develop prototype commercial instruments such as contracts, developing a

tendering system that would be run by the PPP office on behalf of client Ministries or SOEs.

Develop and implement the organizational structure and staffing plan for PPP Office. This needs to be accompanied by a shadow expat staff to provide additional resources and critical on-the-job training.

Reforms that lead to transparency, fair competition, a functioning legal framework, and rule-of-law can meaningfully bring private sector participation. For electricity, private sector can be mobilized through the use of: Independent Power Producers (IPP's), Management and Maintenance Contracts, Concessions, Build, Operate, Transfer (BOT) and Full Privatization of Assets, the highest extent of privatization.

As a start, DABM will outsource Works and Services and Billing/Meter reading. In the works and services area, the utility will no longer undertake construction and rehabilitation but will give them under tender to the private sector. Other areas that will be encouraged include O&M contracts. Moreover, when commercialization is complete and distribution unbundled in an accounting sense, DABM will seek a performance based management contract for distribution. In the regulatory arena, our strategy includes: establishing enabling environment including commercial and power-sector specific contract laws such as for dispute resolution. Moreover, functioning courts can be an important enabler to attract private sector investments. It is proposed to create a Minimum Infrastructure Platform (MIP)<sup>2</sup> for private sector led growth.

Given the on-going power infrastructure activities, including those planned, under proper regulatory environment and security conditions, over time, selectively, there is a good potential

<sup>2</sup> Proposed MIP is a combination of elements including: (i) business environment; (ii) investment facilitation; (iii) human capital; (iv) financial services; (v) Power sector-specific laws including dispute resolution, and (vi) Physical and support infrastructure.

for the privatization of power. While a great deal of success has been achieved in the telecom sector, a key difference is the public's perception that providing power is the government's responsibility, and also much higher costs of power infrastructure as compared to telecom. Nevertheless, areas such as concessions and licenses can be looked into for potential use.

Some of the privatization areas that will be investigated are: (i) Equipment and human resource supply to power construction and rehabilitation projects, (ii) Owning and operating small and medium sized stand-alone grids,<sup>3</sup> (iii) Management/maintenance contracts for regional power programs and major power plants, (iv) The installation and operation of alternative energy sources (solar and wind installations), potentially with subsidies in the short- and medium-terms, (v) For the longer term, through unbundling and divestiture of power generation plants which could operate as stand alone units that sell power to the grid, and (vi) over the longer term (2015 or beyond), subsidized development of coal fired power plants to support major industry such as mining.

Security remains an important issue including for private sector participation and operation. To reduce security-related risks, the Government is increasingly implementing corrective measures including increased security, creating employment opportunities and apprehending criminals.

Additional regulatory improvements are also underway to lower risks to the private sector. Also, the public will be educated to help accept privatization, as it is gradually phased in. MEW will work towards improving the regulatory framework to reduce risks and costs. IROA is committed to encouraging and increasing private sector role in power.

<sup>3</sup> The Ommary Electric Company in Ghazni serves 8,500 customers with 24 hour electricity and only 42 staff (compared to DABM in Ghazni who serve 1,460 customers with 5 hours of supply from 29 staff).

### C. Integrated Policy and Planning.

It is imperative that the energy sector be seen from an integrated point of view and that the Ministries and Agencies involved in energy coordinate their policy and planning exercises so that the complex interactions among sub-sectors are adequately considered. This will result in a more optimal allocation of resources and a more effective capital investment planning process. ICE needs to be strengthened both institutionally and from a capacity point of view for this critical work.

### D. Least-Cost Expansion Plan

based on a rigorous cost-benefit analysis. As the coordinating institution for the energy sector, it is recommended that ICE undertake development of a **Least-Cost Expansion Plan** to achieve IROA objectives for the sector over the next 2-to-10-year period within overall budget constraints. This plan would utilize and expand upon current economic models developed through USAID-funded assistance to evaluate current and proposed projects and be updated on a regular basis. Based on this analysis, a comprehensive expansion plan for Afghanistan's energy resources—including electricity, natural gas, oil, coal and renewables—would be drafted, vetted and put into place; and would include a detailed monitoring and evaluation program, indicating objectives, benchmarks, and reporting requirements. This plan would include capacity building; regulatory, legal and legislative reforms; private sector initiatives, and other programs needed to achieve ANDS objectives, in addition to specific projects to rehabilitate and expand energy sector infrastructure. It would prioritize projects and programs according to short-term (2-to-5 years) and intermediate-term (5-to-10 years) requirements given overall IROA and donor budget constraints.

As the implementing and coordinating entity, ICE could assign specific projects and programs to individual ministries and entities. This Plan should review:

- What is the optimal balance over time of domestic energy production from hydro, natural gas, oil, coal, renewable resources and energy conservation?
- What is the least-cost balance over time between domestic versus imported energy?
- What is the optimal balance over time of energy resource use for rural energy services?
- Given resource constraints, what is the optimal balance over time of IROA versus private sector involvement in the energy sector, including rural energy?
- What policy, institutional, legal and legislative reforms are needed to develop a sustainable energy sector with private sector participation?
- What studies and data and informational resources are needed to fill gaps in understanding and knowledge of the sector and to support development of an effective energy sector strategy?
- What is an effective strategy to increase participation, build support, and maintain realistic expectations among sector stakeholders with regard to assistance efforts?

### E. Needs Assessment and Data Base.

The IROA should undertake a detailed needs assessment and develop a comprehensive data base for the Afghanistan energy sector, including information on energy use by various categories of consumers (households, commercial, small and large industry, transportation); options for meeting sector demand; rural and urban household information, economic growth, level and structure of energy demand, rates of population growth and urbanization; energy

cost and availability; etc. This information would be used to create a comprehensive data base to support achievement of Afghanistan's long-term energy sector objectives located at the Afghanistan Energy Information Center (AEIC).

- Project Management Unit. These energy projects and programs are so large and institutional capacity at implementing entities so thin that is it imperative that a Project Management Unit be established to handle all project management aspects including monitoring and evaluation. The PMU would work with ICE and the implementing entities to develop a comprehensive project management program that would be applied to the largest and most critical projects. At the time, the capability to monitor and evaluate would be strengthened at the ICE and implementing entities addressing all other assistance efforts not brought under the PMU. It is critical that efforts to rebuild and expand Afghanistan's energy sector, to strengthen energy sector institutions and to attract private sector investment be as effective and efficient as possible. Current efforts have produced some important results, but efforts need to be strengthened, particularly with regard to rural energy programs, to ensure that projects are completed on time, that they produce the desired results and that they contribute to Afghanistan's sustainable energy future. For details of projects refer to annex III.

### **PRONG THREE – RURAL AND RENEWABLE ENERGY**

Amend electricity law to clearly demarcate the boundaries between MEW and MRRD with respect to rural energy; concentrate rural-remote energy activities within the Rural Livelihoods and Energy Department (RLED). It is important to more clearly define the areas of control between the MRRD and MEW in providing energy services. MEW is principally concerned with providing electricity services to: (1) urban and

peri-urban areas; (2) secondary towns and cities of 5,000 persons or more; and, (3) large industrial, mining, commercial or agro-industries. To more accurately reflect these differences, the distinction between rural energy and rural-remote will be made following the Bangladesh experience.

Rural-remote energy is energy that serves remote communities of a village or village and where the settlement is less than 5,000 persons that is a reasonable distance from a transmission line, or an urban or peri-urban area or any other area that would be covered by MEW. This is the clear domain of MRRD and this may include conventional energy such as diesel, liquid fuels, and coal and it may include small scale renewable such as biogas and micro or mini hydro.

While demarcating clearer lines of authority for energy services, this does not reduce the need for the two ministries to collaborate. The need to collaborate arises for many reasons such as: The MEW will have expertise in renewable energy, albeit large scale, that may be of use to MRRD; Eventually, some of the MRRD areas will connect to the grid and so a common understanding of the requirements for grid connection is required; and, there is a need to collaborate on technical standards for rural electrification.

Coordinate donor assistance activities for rural-remote energy through RLED.

- In collaboration with NURC, develop Rural-remote Energy Policy and include Light Handed Regulation as an official policy to promote development of stand-alone rural energy systems. Policy and regulation must set guidelines for cost-recovery. In essence projects need to be able to recover operation and maintenance costs and set aside a sinking fund for capital replacement.
- Undertake a Rural Energy Master Plan for rural-remote and develop criteria for project

selection based on the policy of income generation and cost recovery and on the master plan and do so in coordination with MEW as their rural electrification plan is developed.

- Develop and implement the organizational structure and staffing plan for RLED. This needs to be accompanied by a shadow ex pat staff to do the heavy lifting and provide critical on-the-job training.
- Establish the Rural Energy Fund administered by RLED and allocated on the basis criteria developed above.

MEW to develop a rural electrification master plan to cover their area of control and coordinate it with the MRRD. For details of projects refer to annex III.

#### PRONG FOUR - EXPAND SUPPLY

Imports from neighboring countries expanded  
Establishment of a Dispatch and Control Center  
(US \$25 M)

Power Purchase Agreements for Power Imports – Strengthening Power Purchase Agreements (PPA's) with Afghanistan's suppliers to assure guaranteed supplies at agreed upon costs and quality<sup>4</sup>. This is a top priority activity that cuts across several MEW projects and is critical to additional power needs. It is currently covered under an existing USAID project. Focus needs to be on non-western style PPAs that are consistent with the Central-South Asia way of doing business.

#### (1) NORTH EAST POWER SYSTEM (NEPS)

NEPS is the most important supply effort consisting of generation, transmission and distribution. It includes a 100 MW power plant

<sup>4</sup> Currently, PPAs are skeletal and include no terms concerning technical quality, quality of service, or metering. In addition, MOU with Tajikistan has not been finalized.

based on indigenous natural gas<sup>5</sup> and power imports. NEPS's primary objective is to serve urban centers in Kabul, Nangarhar, Parwan, Balkh, Jawzjan, Kunduz and Baghlan. The transmission lines to transmit imported power from Uzbekistan, Turkmenistan, and Tajikistan to major urban centers in the North and East, in particular Kabul are being completed on a priority basis. The completion will help meet the existing shortfall on quicker basis.

In addition to the 100 MW gas fired generation, NEPS will also include the rehabilitation of Hydropower plants (HPPs) in Pul-i-Chumri and Khanabad in the North, and Naghlu, Saurobi and Mahipar in the east. The generated power will feed through the NEPS. For the long-term, 15 years and beyond, it is proposed to establish new hydro power plants in Baghdara and a second plant in Saurobi; pre-feasibility studies for these hydro plants have been completed. In addition, a transmission line will also be extended from Kabul to Logar and Gardez

#### (2) REHABILITATION OF SHEBERGHAN GAS FIELDS AND POWER PLANT.

Afghanistan needs to develop indigenous energy resources, including natural gas reserves in the Sheberghan area. Data on gas reserves indicate that there is sufficient low-cost gas reserves available to operate a combined cycle turbine plant at Sheberghan for 25 years and that the cost per kWh of power generated would be in the 2.8 to 3.5 cent range. While this is more expensive than the cost of imported power, which currently is in the 2.0 to 2.5 cents/kWh range, future prices are expected to be 4.0 cents/kWh or more. Also, it is important to note the domestic benefits resulting from developing the gas fields and gas-fired power plant.

<sup>5</sup> Estimated gas reserves available as of 2006: 1197.17 billion, current demand including for the 100 MW power plant is estimated at 21.09 billion ft<sup>3</sup>; Expected life of gas reserves, 56 years. Plant operational target date: late 2008

USAID is exploring options for some funding of a 100MW gas-fired power plant to be located near the Khwoja Gegertak, Jarkaduk and Yatimtaq gas fields and an associated urea plant. USAID is confirming the sufficient size of the reserves, quality of the gas and delivery prospects for the plant and plans to move forward with construction of the generating plant pending results of these assessments.

A high priority for the Energy Sector Strategy is to complete assessment of the Sheberghan natural gas fields, issue a production sharing agreement for development of the fields, complete the rehabilitation of the gas pipeline and develop the 100 MW Sheberghan gas-fired power plant to feed into the NEPS grid. These activities should include reviewing options for private sector participation in development of the power plant, such as a management contract and bundling the project with rehabilitation and expansion of the gas processing and fertilizer plants. Moreover, the GOA needs to consider options to attract private sector participation and investment in the gas sector, including management contracts for Afghan Gas, to rehabilitate and operate the gas processing facility and to expand and operate the fertilizer plant.

## SOUTH EAST POWER SYSTEM (SEPS)

SEPS aim is to serve urban centers in Helmand and Kandahar). It will enhance power supply to Kandahar and Helmand by rehabilitating two turbines, and by extending a third turbine at Kajakai. In addition to enhancing power supply, another key aim is to gradually reduce reliance on expensive diesel generation. Furthermore, MEW will attempt to advance the proposed time-frame for the feasibility study to expand hydro power production in Kajaki through a second dam.

However, security is a particular concern especially in the South-east including Kajakai-am area. In the event it becomes a serious threat or an actuality, the Government will explore the feasibility of installing, small-scale power systems such as decentralized systems, mini-grids and others, in areas where security becomes a threat.

## RESERVE ESTIMATION AND EXPLORATION

Increased power generation requires the use of indigenous resources of natural gas and coal. The Government is committed to developing the enabling frameworks that will promote private sector investment in exploration and development of gas reserves and coal. Top priority will be given to existing gas and coal fields. For details of projects refer to annex III.

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## CHAPTER 3

# ENERGY SUB-SECTOR STRATEGIES

## ELECTRIC POWER

The goal of the IROA's strategy for the power sector is to provide supplies of reliable, affordable electric power sufficient to support a growth rate in GDP of 9% per year and reduce poverty by 3% per year. If these targets are met, by 2013 these achievements would result in over 90% of residents in the three

major cities and more than 50% of the rural population having electricity. However this remains an extremely ambitious goal. Hydropower holds the greatest promise for Afghanistan followed by natural gas and coal. Utilization of indigenous fossil fuels (natural gas and coal) for power generation is very limited as is utilization of solar, wind and other renewable energy resources



Source: Ministry of Energy and Water.

Figure 9 shows that the cost of delivered power can be significantly reduced through efforts by the IROA and MEW to displace costly diesel power with other sources, such as natural-gas and coal and with lower cost power imports. Most of the cost of power is associated with generation (as opposed to transmission and distribution), so replacing costly diesel generation will have a major impact on the delivered cost of power.

(see Figure 8)

Priority objectives of the Government in electricity include:

- Commercialization of DABM including outsourcing and/or privatization some functions.
- Institute a CFL penetration program.

- Increase operating capacity in Afghanistan from 448 MW to 850 MW by 2012.
- Increase power distribution in Kabul to 500 MW by 2013.
- Increase power distribution in other major urban centers by 100 MW by 2013.
- Provide 100 MW to electrify 25 small towns and 800 representative rural households by 2013 (MRRD estimates that as of 2006, there were over 38,000 villages in Afghanistan.).
- Promote supply of energy services to rural and remote areas.
- Support development of renewable energy resources, particularly micro-hydro, solar and wind.
- Support institutional strengthening and capacity building and private sector involvement in the power sector.
- Tariff reform.
- Reconstruction of East GT (45MW).
- Development of a gas-fired generation plant at (100MW)
- Reconstruction of Thermal Power Plant 50 MW in North West of Kabul
- Construction of Diesel Power Plant 108 MW in East of Kabul
- Power generation activities directed to off-grid supply, including micro-hydro and solar powered systems, potentially adding about 21MW.
- Installation of 25 diesel generators to help meet winter and emergency needs in Kabul and Kandahar (21MW).
- North-East Power System (NEPS) to connect Kabul to Pul-e-Khumri with ties to Tajikistan, Uzbekistan and Turkmenistan for power imports and the addition of thermal power through indigenous gas at Shebergahan.
- North Transmission System (NTS), including constructing 220kV lines from Nahri Shahi (Mazar-e Sharif) to Surkhan Daria in Uzbekistan and to Pul-e-Khumri and beyond.
- Eastern Transmission System (ETS) is being rehabilitated and strengthened, including the existing 110kV lines from Kabul to Mahipar, Naghlu and Sarobi.
- Western Transmission System (WTS) includes strengthening the existing 110 kV line connecting Herat and Mary in Turkmenistan and the 132 kV line connecting Herat to Taiband. The South East Power System (SEPS) which via a 110kV line connects Kandahar to Lashkar Gah and Dural Junction and connects Dural Junction to Kajakai.
- Installation of diesel generation in various cities where no alternatives are available.

## MEASURES TO INCREASE POWER GENERATION AND DELIVERY

Rehabilitation and expansion of power generation, low-cost power imports, and increased access to rural electricity supply are the core components of the IROA's efforts to increase access to electric power in Afghanistan.

Major efforts by the IROA and donors to increase power generation and delivery include the following<sup>1</sup>:

- Rehabilitation of the NW Kabul thermal plant (44MW).

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<sup>1</sup> This list is intended to indicate IROA and donor activities undertaken to expand availability of electric power. The status of these activities often is unclear as to whether they have been completed, are being implemented or have been delayed.

- For small towns and cities, strengthen power availability including: the Qalat Electrification Project and the Aybak Distribution Project to strengthen distribution networks and establish 4,300 new connections in rural areas; micro-hydro projects in various parts of the country; limited wind energy projects (such as in Herat, with over 120 days of potentially strong winds); and an estimated 200 small biogas digesters in Kandahar.

Longer-term initiatives that might be undertaken between 2012 and 2020 might eventually include some of the following:

- Developing a national grid, and becoming a power transit country; plus the following specific projects
- Kajakai 2 (100 MW) and Saurobi 2 (180 MW) hydropower development.
- Kokcha hydro cascade, (perhaps up to 1000 MW)
- Baghdara (280 MW)
- Kunar, (300 MW)
- Panshir (Gulbahar) (120 MW);
- Possible hydro projects in Bali Murghab and Balkh, with currently unknown capacities; and
- Perhaps one or more coal power facilities with a capacity of up to 350 MW.

These activities will take some time to complete. New generation to serve the Kabul area is not expected to be available until December, 2008, including delivery of expanded power imports from Central Asia. Completion of the Sheberghan power plant depends on completion of the resource assessment and finalizing the production sharing agreements; development of other resources options, such as coal-fired generation or new hydro plants, depends on completing a number of ongoing initiatives designed to clarify the roles and responsibilities of the IROA and developers

and to reduce to manageable levels the risks and uncertainties associated with development of these resources. In addition, a recent analysis of the sector indicates a potential electricity supply shortfall in 2010 of about 320 MW, or perhaps more, depending on how 'demand' is defined. Currently most customers receive some power some of the time. There seems to be latent demand for far more power than is planned for any time in the foreseeable future.

### **Institutional, Regulatory and Legislative Policy Requirements**

While physical improvements to the power structure are underway, simultaneously initiatives are being taken to build institutional and implementation capacity across relevant power sector entities many of which will increase transparency. Such efforts include:

- Strengthening institutional capacity at MEW, MRRD and MoM to be completed by 2015.
- Technical training of technicians and engineers at DABM in power sector infrastructure maintenance; management courses and training in procurement, billing and collection and other areas.
- Efforts to unbundle and corporatize DABM

also are underway, including inventorying of DABM's assets; training to selected DABM staff in procurement, billing and collection; and approval of bye-laws to authorize DABM's conversion to a new commercial entity.

- Tariff reform for DABM, including raising tariffs to cover 75% of costs by 2010.
- Establishment of an independent Energy Regulatory Commission with authority over tariffs, service quality, and other issues.
- Energy needs survey.

A major part of the IROA's efforts to increase supply of electric power needs to be development of an effective policy to attract private investment to the sector. Here, lessons learned from other countries in the region may be helpful.

#### A. One-Stop Shop- The Private Public Partnership Office

In 1987, Pakistan requested assistance from the World Bank to increase private sector participation in the electricity sector<sup>2</sup>. An initial framework of incentives to attract private investment was put in place in 1988 to address the following constraints:

- Absence of a comprehensive policy framework concerning incentives, fiscal treatment, reparation of profits, availability of foreign exchange and pricing.
- Lack of long-term financing for projects.
- Inadequacy of institutional arrangements for the review, negotiation and approval of projects.

In 2002 the Government adopted a Strategic Plan for power sector privatization, which included commercialization and unbundling and eventual privatization of the electric utility; establishing an independent regulator for the sector; and issuing tenders for private sector development of power projects based on two important elements:

- A "one-stop shop" to address all issues relating to development of an IPP.
- A ceiling bulk power tariff against which potential developers would bid.

The World Bank provided assistance to the Power Ministry to develop procedures to implement this

<sup>2</sup> Lack of Access to Energy; The Enabling Environment Conference: Effective Private Sector Contribution to Development in Afghanistan; The World Bank Group, June 2007.

Plan, with major elements to: (1) develop policies to support investment; (2) create a vehicle for long-term financing for private power projects; and (3) establish a new entity to evaluate, negotiate and approve private power project investments. This new entity was a "one-stop shop" within the power utility in charge of evaluating proposals and negotiating agreements between the Government and the project developer necessary to bring the project to market (e.g., PPAs, FPAs, pricing, financing, etc.).

This policy and institutional framework proved to be very successful in bringing to market 20 IPPs with a total capacity of 4,500 MW, with an average closing time of 2 years.

This process can be utilized while other activities to commercialize and privatize the government-owned utility, establish an independent regulator and complete tariff reform are ongoing, thereby shortening the time for private sector project development. Major elements of this policy to ensure success include the following (some of these elements were missing from the Pakistan program, but are based on lessons learned from that process)<sup>3</sup>:

- A clear policy and package of incentives to promote private investment.
- A "one-stop shop" to address all issues related to approval, financing and development of projects.
- Establish a bulk power tariff ceiling price indexed to inflation that developers bid against to accelerate project development, rather than using a competitive bidding process (the tariff needs to be evaluated and altered over time in successive tenders to reflect market conditions).
- Standardized security package (including

<sup>3</sup> "Lessons from the Independent Power Experience in Pakistan;" by Julia M. Fraser; Energy and Mining Sector Board Discussion Paper No. 14; The World Bank Group, May 2005.

- Government and Donor guarantees) to reduce country and project risk.
- A standardized and transparent review and approval process (with a dispute resolution procedure) so that the best (most economical) projects are selected and review criteria are known and fairly applied.

This type of procedure could be adapted to Afghanistan as it is designed to address very similar conditions that currently exist in its electric power sector. In addition, this procedure could accelerate development of IPPs in Afghanistan while current efforts at regulatory and tariff reform and commercialization of DABM are ongoing.

## B. Multi-sector Regulator & Regulation by Contract

Regulation by contract is a mechanism that specifies the roles, responsibilities and obligations of the electricity distribution company and the regulator in providing electric power service to retail customers<sup>4</sup>. This contract is similar to, but more detailed than a Power Purchase Agreement, which defines the terms and conditions for the sale of power from a generator to a distribution company. Also management contracts are a type of regulation by contract, in that they specify certain performance requirements for the contractor tied to rewards and penalties in exchange for a commitment by the government to provide revenue to cover costs, including profit.

Recently established regulatory commissions in developing countries often do not have adequate experience or expertise in effectively regulating power providers and also are often not truly "independent" from political influence. In addition regulatory procedures and mechanisms, including dispute resolution procedures, generally are not well established. Therefore, developers may be reluctant to invest in distribution facilities as the

<sup>4</sup> Regulation by Contract: A New Way to Privatize Electricity Distribution?; World Bank Working Paper No. 14, September 2003.

perception of regulatory, financial and political risk remains too high in relation to expended benefits from the investment. To address this situation, and also to speed up the development process while the necessary conditions are being put into place to establish an effective regulatory commission, the concept of "Regulation by Contract" may be usefully applied.

Regulation by contract does not specify prices. It pre-specifies a regulatory treatment for individual cost elements, which taken together determine the prices charged for electric service. The contract is a detailed tariff-setting agreement between the service provider and the regulator that forces the regulator to set tariffs based on a set of specific formulas and procedures. In this way it limits the discretion of the regulator and reduces the risks associated with investing in a power distribution company. In exchange, it establishes certain service and performance obligations on the distribution company to ensure that customers receive adequate service. The key component of the regulatory contract is a performance-based, multi-year tariff setting system. This type of mechanism has been used for a number of years with success in a number of developing and developed countries, including the US, UK, France, India, Brazil, Chile, Peru, Colombia, and Bolivia.

The agreement or contract contains a formula with pre-specified parameters that determine how annual total revenue or average tariffs levels will be established by the regulator. The formulas generally distinguish between controllable and non-controllable costs. Controllable costs are tied to external indexes or benchmarks with performance targets and associated rewards or penalties. Non-controllable costs are allowed to be passed through to customers on a regular basis. There also is usually a mechanism to deal with unforeseen events, such as natural disaster that might affect the company's costs or revenues and a dispute resolution mechanism to address disagreements between the company

and the regulator. The purpose of this regulatory contract is to reduce the risks associated with investment in distribution assets so as to promote private investment while also ensuring adequate protection of customers by supporting adequate, safe, efficient, and economically priced service.

Elements of a regulatory or performance-based contract typically include:

- Pass through of power purchase costs  
Recovery of distribution costs
- Loss reduction and other quality of service requirements for the distribution company
- Obligation to provide service by the distribution company
- Performance requirements on behalf of the distribution company, such as minimum efficiency standard, number of new hook-ups, revenue collection targets, etc.
- Distribute resolution mechanism
- Mechanisms to reduce foreign exchange risk

## PROJECTS

To ensure that ongoing activities to expand electricity supply mesh effectively with the IROA's longer-term objectives for the electricity sector and produce cost-effective results, it is recommended that the following activities be undertaken as part of an overall Afghanistan Energy Sector Strategy:

1. DABM Commercialization and Capacity Building. It is critical that DABM be placed on a sound financial basis. Some progress has been made to commercialize DABM and improve its operational management and efficiency, these efforts need to be completed. Emphasis on improving, metering, billing and collections is needed; consideration also should be given to implementing a management contract to the private sector for these functions.

## Support for full-scale COMMERCIAL AUDIT

- Audit to be performed by one of the three major international audit firms doing business in Kabul.
- Capacity building within the power utility to deal with outside auditors and respond to AUDITOR'S COMMENTS.
- Pre-audit training, or audit preparations, to help DABM become ready to be audited. This would be a major piece of work, given the general condition of financial reporting in DABM over the past (say) 30 years, because of the war, etc.

## Capacity building for Accounting Systems and Software Implementation

- DABM will begin Implementing Microsoft "Great Plains" Accounting Software. Comprehensive integrated package.
- Significant training will be required to:
- Modernize and standardize all accounting procedures at all provincial offices, reporting to central finance department;
- Systematize preparation of all financial reports and statements and develop meaningful financial management reports and annual report that allow decision makers to prioritize activities and focus producing optimal value for money at each decision point
- Design and implement budget planning and control systems
- Systemize cost accounting and resource management to optimize decisions involving outsourcing, management contracting, etc.
- Provide required financial data inputs for tariff models and projection of subsidy requirements.

- Capacity Building for design/ implementation of sophisticated internal Audit Systems
- Computer training in Basic Operations, Programming, Database Management, Networking, and if possible MS Great Plains (needed immediately)

#### Social Safety Net<sup>5</sup>: -- Design & Training Issues.

Retirement Incentives for redundant personnel to leave

- Vocational training plans for up to 3000 DABM employees to enter the labor force
- Labor-intensive activities and performance standards that may make it economically feasible to retrain and retain workers productively.

#### Capacity Building-and Training for Commercial Procurement & Inventory Control Systems

- Design/implement/manage transparent and efficient procurement policy, systems, and procedures, with internal audit procedures and pre award certification by external auditor
- Inventory, warehouse and minimum stock controls training
- Standardization of equipment, parts, and materials training
- Requisition, standardized specifications, purchase order systems, receiving reports and professional inspection at product

<sup>5</sup> DABM has approximately 5,800 employees; the new DABS will probably have something like 2,000 to perhaps 2,500 employees. The residual staff will remain with DABM for some time, and/or remain on the Ministry's complement. These people need a Social Safety Net package, to allow them to retire, (if they are old enough) or be retrained with other marketable skills if they are of a suitable age. It is imperative to address this now so that it does not become an obstacle to full commercialized business practices and provides a model for other SOEs.

delivery to insure compliance with specifications, quantity verification, transfer to job site or warehouse, etc.

- Training in preparing and maintaining specifications sheets

#### Capacity Building-Tariff Policy

- Training in preparation of cost-sheet and cost accounting management
- Training in development of rational tariff development, rate structure, and rate justification
- Strategies for appropriate system wide data collection, data management for rate assessments, and cost accounting procedures suitable for tariff defense
- Training for development, documentation, and presentation of a rate case for tariff modification/adjustment

#### Capacity Building- Equipment Maintenance Management Systems

- Training and technical assistance to help the power utility determine whether to develop and implement in-house equipment maintenance management systems with standard EMMS software or outsource equipment maintenance management through a management contract
- Capacity building for operation of the system - or - for contract development, management, and evaluation if outsourcing is the preferred option. (Including preventive maintenance management systems, schedule enforcement, etc.)
- Capacity Building or training in contract management for specific, high value equipment such as generation plants, dispatching, substations and transformers

- Capacity building for optimization of routine maintenance, cleaning of components, and minor functions that will normally be performed by utility personnel. (planned maintenance management by objectives)

### **Capacity Building-for Corporate Culture Transformation**

- Transition from tradition line item budget and bureaucratic governmental cyclical management approach to cost effective goal setting
- Creative finance solutions, project finance schemes for off-balance sheet (off-budget) systems/equipment upgrades that produce high return on investment [for Senior Management Group, particularly the CEO, CFO, and part of the Change Management Office staff.]
- Project management concepts for specific problem solving and short term transformative projects, inter-departmental projects, and corporate issues
- Commercial Policy Development and implementation<sup>6</sup>
  - Opportunities options and analysis for new services
  - 1. Demand side management and energy efficiency
  - 2. ESCO Services
  - 3. Wiring safety inspections prior to new connections or service upgrade (e.g., from 25 to 50 amp service, or single phase to 3 phase)

<sup>6</sup> There is virtually no local capacity for any of the above services and no licensed electricians. Energy efficiency projects increase service levels without adding generation costs and can be financed through utility bills. Obsolete wiring must be replaced or houses will burn when new capacity is online in late 2008 and customers add appliances that their houses were not wired to sustain. The electric utility can initiate these businesses with some quality control, employing some excess DABM staff. Later these business units can be spun off at full commercial value.

- 4. Re-wiring services for customers
- 5. Certification/sale of energy efficient products
- 6. Project finance of Energy efficiency products
- 7. Vocational training for private service
- 8. Spin-off of non core services, after start-up
- Development and implementation of key performance indicators for each department, business unit, cost/profit center
- H.R. & Personnel Policy Development (Software and hardware)
- Personnel Development and corporate career development
- 9. Job specification with performance standards
- 10. Personnel evaluations
- 11. Individual and group performance incentives based on objective key performance indicators

### **Capacity Building-Information Technology, Information Systems**

- Integrated management reporting systems
- Communications systems and equipment
- Database management (Systems approach to handle financial and technical data referenced in key items above, and relevant information from all departments throughout the corporation)
- Acquisition and installation of technical management systems (hardware and software for line management, GIS and others)

## Capacity Building-/Training in Security Management Systems & Procedures<sup>7</sup>

- Facilities security
- Inter agency security agreements
- Training for basic utility security
- Commercial security outsourcing
- Agreements with Military and Para-military agencies to ensure security at high value installations (Dams, Generation Plants, other major infrastructure)
- Training for implementation of such agreements

## Capacity Development for Revenue Protection Systems

- Practical economics for task prioritization
- Technical training for loss reduction
- Meter replacement programs, transformer replacement programs,( project finance schemes)
- Metering/billing/collection/audit policies, etc.
- Collection strategies
- Baseline verification, best practices, outsourcing only when value-for-money is clearly demonstrable
- Tariff Reform. There is an immediate need for tariff reform and improved financial viability of DABM while regulatory reform and other initiatives are ongoing. In 2004/05 the average tariff collected by DABM was 5 cents/kWh compared with an average unit

<sup>7</sup> DABM has contractual obligations to provide sophisticated security at major installations being commission or turned over by contractors in Feb 2008, but has no capacity to comply.

cost of 12 cents/kWh. The average annual cost of this subsidy to the government is an unsustainable \$56 million. The goal of the IROA is to increase tariffs to cover 75% of costs by 2010. Completion of tariff reform is urgently needed.

- Power Imports. The PPAs for power imports from the CAR region need to be completed and signed in order to reduce the uncertainty of increasing the supply of power to Kabul and other demand centers and support construction of cross-border transmission facilities.
- Regulatory Reform. Currently, there is only an embryonic legal and regulatory framework for the Afghanistan energy sector, which is insufficient to support restructuring and private investment. None of the energy laws address the need for an independent regulatory regime to separate IROA policy functions from sector oversight and to remove political considerations from day-to-day operations of the sector.

As part of the multi-sector regulator, bring electricity regulation under this body. Afghanistan's energy sector is small and technical capacity limited. Therefore, the IROA should consider establishing one regulatory commission with authority over the electricity, natural gas and water sectors. The National Utility Regulatory Commission (NURC) would have responsibility over tariff setting; selection of facility sites; service standards and quality; technical, health and safety issues; dispute resolution; data collection and enforcement authority; grid codes; power and fuel purchasing agreements; and production sharing agreements.

- Private Sector Investment. To encourage development of PPPs including IPPs, the IROA should develop a policy to issue tenders to the private sector based on a

ceiling bulk power tariff against which potential developers would bid and incorporating a clear package of incentives and a “one-stop shop” that would address all issues relating to development and financing of PPP proposals. The IROA also should implement “regulation by contract,” including management performance contracts to encourage private investment in various segments of the energy sector.

Private sector involvement in Afghanistan’s energy sector could include:

- Place metering and billing for DABM under a commercial management contract with performance incentives and inclusion of a training program for DABM staff.
- Distribution area management contracts
- Legitimizing existing informal small local level electricity providers
- Development of IPP facilities, both on- and off-grid.
- In conjunction with ongoing infrastructure projects, such as NEPS, NW Kabul, and Kabul 100MW additions; provide for commercial management contracts with performance incentives and inclusion of capacity development for DAMB staff.
- EPC (Turnkey) contract and O&M for the gas-fired plant in Sheberghan.
- Small-scale manufacturing of turbines, solar installations, networks.
- Suppliers to the on-going reconstruction effort.
- Owners/operators of stand-alone power grids and gas distribution systems.

## PETROLEUM SECTOR

The indigenous fossil fuels in Afghanistan are

coal, oil and natural gas. Currently petroleum products such as diesel, gasoline, and jet fuel are imported, mainly from Pakistan and Uzbekistan, with limited volumes from Turkmenistan and Iran serving regional markets. Turkmenistan also has a petroleum product storage and distribution facility at Tagtabazar near the Afghan border, which supplies northwestern Afghanistan. The Government has given high priority in policy to development of oil and gas infrastructure as a potentially significant source of energy for the country and revenue to the GOA. It also plans to address import issues, including increasing private sector participation and improving quality standards and collection of import duties. But plans have not been substantially put into action!

## NATURAL GAS

Commercially, the most important energy resource in Afghanistan economically includes natural gas following water power and coal. . The natural gas reserves need to be evaluated and estimates of proven and recoverable resources confirmed and fields developed; many existing gas fields and wells need to be rehabilitated and infrastructure rebuilt and expanded. Currently ministry of mines attempts to develop petroleum/gas sector in accordance with law of hydrocarbons and related rules/regulations in the country through the full participation of private sector so that Afghanistan get access instantly to energy of natural gas and oil that are seriously required for rehabilitation and growth of economics in the country. The volume of investment and incomes depend on gradual development of gas/oil sector.

The enforcement and improvement of domestic energy resources in the country

is directly linked with development of the natural gas reserves that helps implement economic growth and reduce negative impacts. There exists sufficient amount of gas reserves in Sheberghan that not only tackles power production but also ensure the needs of local demands of people and

factories as well. Also it is envisaged that the existing gas wells be rehabilitated , gas production be expanded and the pipelines networks to be extended / updated toward fertilizers production plants and other consumers.

Development of Afghanistan's natural gas resources has the potential of improving domestic energy resources, reducing environmental impacts and supporting economic growth. Natural gas reserves are potentially large enough to support development of electricity generation as well as a fertilizer plant and local commercial and residential markets in the Sheberghan area. Plans are underway to rehabilitate the gas fields to expand production and to upgrade the existing gas pipeline network to supply the fertilizer plant and the local market. Activities to promote exploration and development of additional gas resources have been underway for some time.

Data on gas reserves indicate that there is sufficient low-cost gas reserves available to operate a 100 MW combined cycle turbine plant at Sheberghan for 25 years and that the cost per kWh of power generated would be in the 2.8 to 3.5 cent range. Also, gas fired generating capacity would be much less expensive than diesel power at about 30 cents/kWh.

Ministry of Mines has drafted and proposed a series of new modifications in the hydrocarbons law with the purpose to better accelerate the gas sector development process. The Afghan-Tajik and Amu river zones were blocked , and work has been running in provision of tender documents for attraction of private sector investment and it is due that in 2008 MoM would lease two gas fields and one oil filed through biddings to private sector.

#### A. Reserve Estimates

Based on the existing reports, 120 cubic meters of gas reserves and approximately 14,5 million

tons of petroleum reserves have been identified. However in accordance with recent evaluations, the size of gas/coals reported to have been more than the above estimation. As based on the US geological survey , 444 billion cubic natural gas reserves, 219 million tons oil and 75 million tons kandansat have been identified in latest investigations.

In addition to proven reserves, there exist numerous un-drilled prospective structures that have undergone various stages of exploration. If even a small number of these un-drilled structures contained commercial hydrocarbon accumulations, the estimated undiscovered gas resources in northern Afghanistan could dramatically exceed current resource estimates.<sup>8</sup> Based on studies and assessments conducted to date, there is a consensus among most international experts that some important issues require further review:

- The manner in which these undiscovered reserves are categorized.
- It is possible that some of these structures may have no hydrocarbons or only marginal accumulations. Only by drilling and testing the wells can this information be confirmed.
- It is likely that many of these reserves will be categorized as higher risk.

#### B. Production and Infrastructure

Production of gas is estimated at about 21.2 million cubic feet/day. This figure comparing with gas price in the region would exceed to 50 million US dollar in a year.Unless new wells drilling and new production is not commenced , the exact expenditure related to gas price seems very difficult. This is a problem that encounters private investment with difficulty aimed at developing gas sector. Mazar-Sheberghan pipelines that

<sup>8</sup> Evaluation of Investment Options for the development of Oil and Gas Infrastructure; Hill International, 2004-2005.

were not extended technically seem to have been disconnected since the last three years due to lacking natural gas and it will also not be applied in future.

### Afghan Gas

In addition, current gas prices are too low to cover costs of rehabilitation, O&M and expansion of production and infrastructure. Since currently the gasification system is full of technical defects, it causes problems in collecting the exact revenues. The tariffs should be arranged in a way to cover the real cost and implement the interest-based sustainable activities. As now the extraction, delivery, distribution and sale of natural gas has been running by Afghan gas enterprise and the relevant payment of gas price is also collected by the above enterprise and transferred to government account.

The majority of more than 12,000 residential customers and more than 700 business customers are not metered. Afghan Gas management indicates that metered and non-metered customers generally pay the same rate for gas. No meaningful data is available to adequately present the costs of operating and maintaining the system at this time.<sup>9</sup> Moreover, the technical standard of Afghan gas operations is extremely low. There is no incentive to conserve or to optimize use of gas resources as the present cost is so low and operations are so inefficient.

Afghan Gas reports that its customers are \$15 million in arrears for the past 10-15 years. According to Asian Development Bank (ADB) funded data<sup>10</sup> non-payment is high. According to Afghan Gas if a customer fails to pay for gas use on time, they are cut off. However, there is a common occurrence of carrying the customer debt to the next billing period and not cutting them off so long as some payment is made. In the lapse of few years, illegal connection has been reduced

<sup>9</sup> Establishing a Gas Regulatory Framework: ADB TA 4354-AFG; Energy Markets, Ltd., May 2006

<sup>10</sup> Establishing a Gas Regulatory Framework; ADB TA 4354-AFG; Energy Markets, Ltd., May 2006

considerably , legal connections and expansion of gas delivery network is not available due to shortage of natural gas and low pressure of gas ..

### C. Natural Gas Development Program

The natural gas development program supported by the IROA is intended to increase production and develop the transmission and distribution infrastructure so that a higher proportion of the Afghanistan's energy requirements can be met by natural gas and dependence on imported oil can be reduced.

Key issues relating to the natural gas sector are that are receiving IROA attention include:

- Strengthening the capacity of key institutions to rehabilitate and develop its related capacities, to better arrange agreement affairs and investments related to extraction, exploration and exploitation of natural gas
- Reviewing policy, institutional, regulatory and environmental issues based on an efficient policy and regulatory framework.
- Developing a policy framework to support private investment in gas exploration and exploitation.
- Increasing Government revenues by phasing out gradual price subsidies and improving revenue collection.
- Establishment of codes, standards and mechanisms for growth of the sector.

The operational strategy of the Government for the gas sector is to promote economic growth by removing impediments to the reconstruction and modernization program and to open the sector to private investment, particularly for gas exploration and development.

Efforts to attract private investment depend on developing policy reforms and structural changes to support longer-term sector development and expansion. Progress to date has been slow, thereby

limiting investor interest. Options to speed up this process and to increase private sector involvement need to be explored.

#### D. Measures to Support Gas Exploration/development

The following measures are being undertaken to support natural gas exploration and development:

- Complete a detailed study of the gas fields to determine their potential size and development potential.
- Modify the hydrocarbons law to clearly define roles and responsibilities of the government and developers with regard to exploration and development of gas reserves. (Underway through assistance from Norway.)
- Draft a gas sector law to address downstream (delivery, pricing and sale) issues.
- Bring regulatory oversight operations under NURC.
- Capacity building and training for MoM and Afghan Gas.

Efforts need to be undertaken to coordinate ongoing assistance efforts to improve their effectiveness; develop a focused policy for development of the sector, including attracting private investment; and to establish pricing, tax and royalty regimes that promote sustainable development and provide a steady source of revenue to the Government. Activities that need to be taken as part of the Energy Sector Strategy include:

1. **Development of Sheberghan Gas Fields and Power Plant.** Afghanistan needs to develop indigenous energy resources, including natural gas reserves in the Sheberghan area. Data on gas reserves indicate that there is sufficient low-cost gas reserves available to operate a combined cycle turbine plant at Sheberghan for 25 years and that

the cost per kWh of power generated would be in the 2.8 to 3.5 cent range. While this is more expensive than the cost of imported power, which currently is in the 2.0 to 2.5 cents/kWh range, future prices are already moving closer to 4.0 cents/kWh or more. Also, it is important to note the domestic benefits resulting from developing the gas fields and gas-fired power plant.

Based on World Bank and USTDA assessments of the Sheberghan gas fields, USAID is considering construction of a 100MW gas-fired power plant to be located near the Khwoja Gegertak, Jarkaduk and Yatimtaq gas fields. USAID is confirming the size of the reserves, quality of the gas and delivery prospects for the plant and plans to move forward with construction of the generating plant pending results of these assessments.

A high priority for the Energy Sector Strategy is to complete assessment of the Sheberghan natural gas fields, issue a production sharing agreement for development of the fields, complete the rehabilitation of the gas pipeline and develop the 100 MW Sheberghan gas-fired power plant to feed into the NEPS grid. These activities should include reviewing options for private sector participation in development of the power plant, such as a management contract and bundling the project with rehabilitation and expansion of the gas processing and fertilizer plants. Moreover, the IROA needs to consider options to attract private sector participation and investment in the gas sector, including management contracts for Afghan Gas, to rehabilitate and operate the gas processing facility and to expand and operate the fertilizer plant.

2. **Complete Tariff Reform** to raise natural gas prices to cover costs and improve metering, billing and collections.
3. **Come under NURC** for effective oversight of the sector as outlined above in the Electricity Sector section. NURC would have

authority over licensing, siting, tariff, and other rate making and oversight authority. While this authority is being established options to promote development of these sectors, including attraction of private sector investment should be employed, such as a PPP Office to promote development and issuance of management contracts and other PPP instruments.

**4. Revamp the Hydrocarbons Law** to reflect a modern oil and gas sector and incorporate international best practices; clearly define the roles and responsibilities of the government and developers with regard to exploration and development of gas oil reserves and to address environment, health and safety issues; and set a timetable for designated turning sector areas over to the private sector. This is being done through assistance from Norway and the consultants need to work closely with others to incorporate PPP provisions in the law.

**5. Reserve Estimation and Exploration** is important to determine the location, size, and economics of recoverable reserves. This has to be coupled with reform so that the private sector will begin to undertake the exploration and development natural gas.

**6. Conduct a CNG feasibility study.** CNG holds significant promise both economically and environmentally in most countries in South Asia have already embarked on CNG vehicle programs. Clearly, the viability of a CNG program is linked to the availability of natural gas and items 1 and 5 above will provide the basis for the feasibility study.

**7. Afghan Gas Reform.** The Afghan Gas is faced with a couple of problems due to the following factors: inadequacy of tariffs to finance costs, non-existence of appropriate equipment required, methods and update procedures, lacking sufficient funding, low working capacities and unawareness about technology reasons including

tariffs that don't cover costs, a lack of functioning equipment, modern methods and procedures, funds and trained personnel, customers that aren't metered and don't pay and an infrastructure that is crippled. Performance at Afghan Gas can be improved. In addition to the capacity building measures already underway, the company should be unbundled and functionally separated into upstream (resource development) and downstream (gas transmission and distribution) entities with an eventual eye towards some form of private sector involvement. At the earliest, this could take the form a management performance contract, including performance incentives and training requirements for MoM and Afghan Gas staff. The economics do not support metering but there are creative ways of effectively recovering for service and these need to be explored by the NURC.

## CRUDE OIL AND PETROLEUM PRODUCTS

Afghanistan has only limited supplies of oil. Currently oil mines extraction is not fulfilled. The extractive oil wells of Rangot has been under conservation since the last two years extractive oil.<sup>11</sup> As a result, Afghanistan depends on imports for most of its consumption. Oil is produced in limited quantities primarily from the Angot oil field, located in Sar-i-Pol province. Given the serious supply shortfall, in order to meet country's needs, most petroleum products—diesel, gasoline and jet fuel included—are imported primarily from Pakistan and Uzbekistan.

Infrastructure for local production of oil is largely non-existent and what infrastructure is present is functioning inefficiently and suffers from low capacities.. In addition, the level of local expertise in oil exploration and development is limited. As a result, sector entities have been unable to operate effectively, to repair and maintain the system, nor engage effectively in new exploration and

<sup>11</sup> Securing Afghanistan's Future: Accomplishments and the Strategic Path Forward; OIL AND GAS Technical Annex, January 2004.

development. A large part of the infrastructure for storage, transmission and distribution of petroleum products has been damaged, while the remaining capacity is in need of rehabilitation.

All known petroleum reserves of Afghanistan exist in Amu Darya Basin while there are implications signaling that petroleum also exists in Afghan-Tajik basin (north -east) of the country and its existence has been forecasted. Based on the USGS estimation, oil reserves in north of the country reaches to 219 ml tons.

Ministry of mines envisages to lease one oil block in the course of 2008, the oil extraction, exploration, production and filtration affairs will be made by private sector.

The IROA also has a proposal to install a crude oil refinery in the country.

#### A. Petroleum Products

All petroleum products consumed in Afghanistan are imported from the neighbouring countries of Pakistan, Iran, Turkmenistan, Uzbekistan, and Tajikistan<sup>12</sup>. The gasoline produced by refineries in these countries does not conform to the international standard for lead content (0.13 g / l of lead content) to achieve the 91 RON (octane) that modern car engines require. Currently, Angot area isn't extracted and all local refineries have been destroyed and left inactive.

Afghanistan consumes approximately 1,200,000 tons of state-supplied fuel per year<sup>13</sup> This includes all types of petrol and diesel (i.e., JP1, JP4, TC1 – generation, heating, aviation) as well as mazut and kerosene. It is estimated that about 80% of these fuels are consumed for automotive purposes, while 20% is used for power auto-production (gasoline mainly) or small-scale grid power generation (diesel mainly), and water pumps.

12 Energy Sector Review and Gas Development Master Plan; ADB TA 4088; Sofregaz, June 2004.

13 This figure excludes privately imported or other fuel imports not reported to the state.

At present, eight border transfer points exist to facilitate the import of liquid fuels into Afghanistan. Prices to its stations are set by the state monopoly, Petroleum and Gas Enterprise (Liquid Fuels) operating under the auspices of the Ministry of Commerce and Industries. Operations include 1600 gas stations and 1300 fuel trucks that are closely controlled and impact virtually every province in the country. Infrastructure as well as operational improvements could provide an opportunity for private investment and more transparent operations. Demand for liquid fuels in Afghanistan has increased dramatically in the past five years; with continued and increased reliance on diesel generation, air traffic and home uses, this demand is expected to increase.

There has been no donor support to this sector. Instead, more than 30 reported private contractors work with the Petroleum and Gas Enterprise to supply Afghanistan's gas stations with fuel as well as to import diesel fuel for power generation.

The low quality of automotive fuel imports imposes serious health impacts on the urban population as well as financial costs in terms of engine maintenance and higher fuel consumption. The IROA needs to put into place a system for certification of petroleum traders and to randomly test products at retail outlets and storage depots to enforce quality standards. It also should look at increasing storage facilities and review the import duty and collection process to ensure maximum revenue to the Government.

Ministry of mines endeavors to lease one oil area through international biddings to private sector for oil exploration, extraction, production and refining.

#### B. Measure to Support Oil Exploration

The operational strategy of the Government for the hydrocarbon sector is to promote economic growth by removing impediments to the

modernization and reconstruction program. In particular policy, financial, regulatory and institutional constraints need to be addressed. The Government plans to open up the oil sector to private participation, specifically for exploration, extraction, production, petroleum imports and marketing. It is recognized that there is a need to establish separate policy and regulatory functions, to undertake sector restructuring, and to improve operation, maintenance and safety standards. It will take time to put these reforms in place; therefore, a parallel approach is being pursued by using existing Government structures to implement reconstruction and capacity building programs while exploring options and developing a consensus on policy reforms and structural and institutional changes. However, this strategy suffers from a lack of technical expertise and poor coordination among IROA entities.

Given the current security, institutional, policy and infrastructure situation, it may be difficult to attract interest by the private sector to invest in the Afghanistan oil sector. If significant interest is not displayed, other options such as management contracts for development of oil fields could be pursued.

In order to pursue its objectives for the oil sector, the IROA is addressing a number of initiatives relating to strengthening the sector and establishing a basis for future expansion and private sector investment. Key issues relating to the oil sector that are being addressed include:

- Strengthening the capacity of key institutions to support sector rehabilitation and reconstruction.
- Undertaking a review of policy, institutional, regulatory and environmental issues.
- Establishing an efficient policy and regulatory framework, including support for private investment in oil exploration, production, import and marketing.

- Increasing Government revenues by gradually phasing out government subsidies and improving revenue collection.
- Implementing regulatory reform to separate policy, regulatory and operational functions.
- Creating institutional capacity for negotiating agreements and monitoring investments in exploration and extraction of oil.
- Establishing appropriate codes and standards and developing enforcement mechanisms for the sector.

#### **Recommendations:**

The IROA has made broad policy commitments and engaged in technical assistance and capacity building efforts supported by donor funding to restructure and develop the oil sector. However, these activities have not been incorporated into a comprehensive strategic plan for the energy sector. As part of the Energy Sector Strategy, the IROA and donors need to undertake the following activities with regard to the oil sector:

1. **Review Options for Attracting Private Sector Participation** and investment, including management contracts for research and development of oil reserves; development of a small oil refinery and distribution of crude oil products; and development and implementation of the first oil production sharing agreement. It could also take the form of privatizing service stations.
2. **Modify the Hydrocarbons Law of 2005** to clarify ownership and development of resources; to provide for exploration and development by the private sector, including stetting production sharing agreements, establish fiscal, tax, health and safety policies and standards; and establish an independent regulatory authority.

3. Petroleum Imports. The IROA needs to improve control of imports and collection of duties; test products at retail outlets and storage depots to improve quality; and should consider increasing domestic storage facilities.

The government should improve and control revenues collection, monitor quality of oil materials in the areas of importation, storage and market and finally to pay attention to supplying oil through domestic establishments.

### C. Coal

Afghanistan has reasonably good quality coal resources that exceeds almost 2 ml tons and is estimated to have significant coal reserves (probable reserves estimated at about 400 million tons), most of which are located in the northern part of the country in the region between Herat and Badakhshan<sup>14</sup>. Although Afghanistan produced over 100,000 short tons of coal annually as late as the early 1990s, , its production currently reaches to 300.000- 400.000 tons annually

The primary coal resources in Afghanistan occur in the Katawaz Basin south and west of Kabul. Prospective economically viable coal deposits are found in five coal districts: Karkar dodkash, Ishpushta, Dara-i-Suf, chal wa namakab and sabzake Herat. However, the real extent of coal deposits in the country is not known and there is an urgent need for exploration and extraction.

Some current coal operations are taking place at Karkar and Ishpushta mining districts. The literature indicates that Dara-i-Suf appears to have the greatest potential for significant reserves, already estimated to be over 84 million tons. This coal is believed to be of coking grade with a high calorific value in the range of 7,000 kilo-calories/kg. The mines at Kalich in the Ishpushta district are active. Coal in these districts is extracted by either

crude, inefficient, mechanized mining methods or by "artesian" methods. Current production from all operations is estimated to be about 110,000 short tons.

The existing industrial sized coal mines are marginal (if not out of operation) due to antiquated machinery and lack of maintenance and new investment. However, there is considerable small scale production. At present, the small scale mining sector, including coal is wholly unregulated and occupies large numbers of persons in difficult security, health, and environmental conditions. Moreover, coal demand and prices in urban centers have risen due to domestic energy needs during the winter months and also due to increasing industrial demand to fire construction bricks.

Development of coal and other mineral resources requires investments in excess of private sector.. Therefore the IROA's economic policy is to establish an enabling environment conducive to attracting and retaining investment by private sector both local and international groups. However, privatization and/or leasing of existing state owned mining enterprises to private groups is, at present, held up by the lack of adequate mining legislation and the need for a clear policy on sector development. Enabling legislation and a proper mineral concession system is needed to establish clear lines of authority and responsibility for the Government and for private developers in the area of investments.

If appropriate measures are taken to distinguish regulatory from operational functions within the ministry departments responsible for coal; put existing operations on a commercial basis so that they may attract private investment; and establish market prices for coal, it is estimated that the value of annual coal production could increase from the current US\$ 10 million to US\$ 40 million.

14 Securing Afghanistan's Future: Accomplishments and the Strategic Path Forward; Mining Sector, Technical Annex, January 2004.

To develop the coal sector and increase production to support new electricity generation, the Government needs to adopt appropriate policies and programs to stimulate private sector investment, rather than direct government investment in operations. To achieve these objectives internationally competitive mining legislation and fiscal measures are necessary.

There is good potential for the mining sector—including coal—to be an important source of growth for the Afghanistan economy. In assessing that potential, the IROA needs to assess existing constraints on development of the sector in terms of enabling policy; regulatory and taxation regimes for private investment; institutional capacities; infrastructure, safety and other constraints. Upon addressing these constraints, a reasonable sector development scenario needs to be developed, including estimates of benefits (production value, taxes, jobs, value added).

Comprehensive data on the scale and economic recoverability of coal and other mineral resources is largely unavailable and a strategy to exploit these resources in an economic and sustainable basis needs to be developed. The MoM places recoverable coal reserves in Afghanistan at over 1 billion metric tons. Other estimates are quite a bit lower at about 400 million tons.<sup>15</sup> Recent estimates place recoverable coal reserves for Afghanistan at about 200 million tons. Allowing for coal handling losses and preparation processing further losses of about 20% can be expected, bringing the recoverable resource to about 165 million tons.

If conducted in an environmentally sustainable manner, exploitation of coal resources can provide substantial tax revenues to central and local governments, create direct and indirect jobs, and stimulate spin-off industries in and around the mining operations. While Afghanistan has excellent geological potential the mining sector is

significantly under developed. Three difficulties currently hinder development of the sector:

- Mining rules and regulations and taxation arrangements do not reflect modern practices and are not conducive to new private sector investment. Additionally, the capacity and technical know-how of government institutions responsible for the sector are not up to modern standards.
- The security situation in the country has limited the ability of the central government to establish national sovereignty over mineral resources and to promote exploration and development.
- Development of coal and other mineral resources requires investments in excess of government abilities. The IROA needs to establish an enabling environment conducive to attracting and retaining investment by both local and international entities.

Afghanistan's coal reserves are under-surveyed. Current production is about 300.000-400.000 tons annually, of which about 250.,000 short tons comes from government-controlled mines. The supply is far less than the demand. Coal has the potential to displace fuel wood and charcoal used in the vast majority of rural households. The MoM estimates annual demand at about 500,000-600.000 short tons used primarily for kilns in the construction of bricks, cement and commercial and industrial uses, including power generation.

Estimates of the cost of coal produced from new underground mines in Afghanistan at about \$28.5 USD/short ton, not including taxes and royalties, which typically average about 10%. The cost of coal from a surface mine is estimated at about \$18/ short ton, excluding taxes and royalties.

### **Measures to Increase Coal Production**

To increase coal production for power generation

<sup>15</sup> Energy Sector Overview and Gas Sector Master Plan: Final Report; TA-4088AFG; Sofregaz, June 28, 2004; and US Energy Information Administration; Washington, DC.

and other uses, and to attract private investment to the sector, the following initiatives are receiving IROA attention, although a coordinated and comprehensive program is needed:

- Explaining the country's coal fields to attract investors of minerals law aimed at lightening their minds in Afghanistan.
- Explaining minerals law for lightening the minds of investors
- Establishing a clear base for State institutions to attract national/international investors for investing on coal mines as per the laws enforced in the country
- Create a modern and internationally competitive legal and regulatory framework emphasizing the primary role of the private sector, the regulatory role of the Government, and taking into account the special condition of small scale producers. This includes:
  - Clarifying state ownership of mineral resources in their natural state.
  - Clarifying the legal basis for private access to mineral rights.
  - Establishing a clear mandate for government institutions to grant private access to mineral rights.
  - Establishment of a Mining Cadastre.
  - Clear identification of the form and nature of mineral rights available to the private sector.
  - Transparent and uniform fiscal and taxation package.
  - Security of tenure for license holder.
  - Transferability of title.
  - Appropriate environment, health and safety requirements.

- Institutional strengthening for Ministry of Mines.
- Establishment of an internationally competitive taxation regime.
- Reinforcement of the geological and geo-science database.
- Improvement in small, medium and large scale mining.
- Establishment of environmental and social management capacity.

### Coal Sector Policy

Afghanistan's coal sector requires immediate capital investment to support development of resources as well as for development of power plants that utilize coal for fuel. The current process by the MoM to complete resource assessments and invite private participation in the sector to be enforced and improved.. This process relies in the MoM to evaluate development potential, decide which resources and projects to develop and then issue a tender for potential developers to respond to. The MoM is simply capable of strengthening the growth of private sector development based on the market economic policy and according to mineral rule and regulations. As a result, development of projects that could contribute to economic growth and employment, provide an important source of revenue to the Government, and provide a fuel source to support expanded power generation are unnecessarily delayed.

A solution to this dilemma would be for the MoM to issue tenders to which the private sector would respond and propose projects for development of coal resources and associated power plants based on the private sector's analysis of the potential value of the project. The MoM—through a panel of experts convened with donor assistance—would evaluate the proposals and award contracts to those projects with the greatest economic potential, including revenue source to the Government. This

mechanism places the impetus for developing domestic energy resources on the private sector rather than on the MoM, thereby providing a much greater incentive to complete these projects in a timely and efficient manner.

Private sector (national and international companies) can invest with respect to mineral law and the government economic policy concerned with mines and other implications of coal mines in the country.

This type of approach to resource development has proven successful in India, where the Government has issued three types of permits to the private sector to encourage development of mineral resources. These include:

- A Reconnaissance Permit, is a license by which the private sectors can identify coal deposits and its other parameters aimed at exploring an area at the size of 250 km/square in accordance with the mining material law . Of course, the exploitation areas shouldnot be more than 50 km/square. The above permit and its availability: Based on the mining material law and the government economic policy, private entrepreneurs (national / international companies) can avail the above permit toward settling the country's requirements in terms of shortage of energy and growth and improvement of industries in Afghanistan and to expand mining in the area of coal based on mineral law.
- A Prospecting License, which is a license for exploring, locating, and proving a mineral or hydrocarbon deposit. It is granted for a 3-year period for the area where development is to occur.
- A Development License, which permits the project developer to undertake development activities to bring the project to completion and market its output.

There are a number of advantages to this process:

- It relies mainly on development of the private sector, prepares the ground for consolidation and exploration of coal in the country. With implementation of the above program, the exploration and exploitation of deposits as well as coal mines not only improve the country's coal industry, but also provides a secured condition for absorption of investment in the country. This step also helps dissolve shortage of energy, protect environment and prevent the demolition of efficient and non-efficient forests/trees and provide better livelihood and employment opportunities for people in Afghanistan.
- The tenders provide information on which proposals will be ranked and awarded so that all developers know the rules of the game and the best (most economically attractive) projects can be selected. These criteria can be altered with successive tender offerings to reflect new information and market conditions to ensure that new projects provide the greatest benefit.
- The availability and perpetuation of functioning mines(exploration and exploitation) to be handled simultaneously based on the law of mining materials, it takes less time and will also encourage private sector to invest on coal mining.

**Recommendations:** As part of Afghanistan's Energy Sector Strategy, the IROA needs to undertake the following programs:

1. Providing proper condition for private

sector development of coal resources and associated power plants. This would include issuing a Reconnaissance Permit, Prospecting License and Development License as discussed above, with specific deadlines and incentives to develop resources and associated infrastructure.

**2. Provision and completion of functioning mine rules according to law orders of mining materials to clarify ownership and development roles and responsibilities of the IROA and the private sector in this respect.**

## RURAL AND RENEWABLE ENERGY

Due to the dispersed nature of the rural population, renewable energy offers the best solution for electrification for the majority of Afghanistan's rural population that currently does not have access to electricity and has no real expectation of connection to the grid<sup>16</sup>.

Most of Afghanistan's 25 million people have no access to modern forms of energy. Fuel wood accounts for an estimated 75% of total rural energy supplies. This is having an adverse impact on forests and watersheds. In addition, burning these fuels increases indoor air pollution, which adversely affects the health of women and children in particular.

Extreme poverty in rural areas also is related to lack of income earning opportunities. The productive use of electricity helps reduce poverty by providing alternative sources of livelihoods and increase educational and training opportunities. The remoteness of rural locations and the rough terrain make expansion of the electricity grid into these areas economically infeasible. Therefore, the application off-grid technology to these areas—including renewable energy resources—is the primary focus of IROA activities.

The role of the IROA is to provide policy and regulatory frameworks to encourage and facilitate participation by the private sector and civil society in rural electrification and application of renewable energy technologies. Ultimate responsibility for renewable and rural electrification resides in the

Ministry of Energy and Water (MEW), although other entities, particularly the MRRD and its program, NSP, CDCs, NGOs, and donors are active in rural development projects. MEW also is charged with establishing a renewable and rural energy policy in conformance with the development objectives of the IROA and ANDS.

In addition to hydro, solar energy is considered the most important renewable energy source. Estimates indicate that in Afghanistan solar radiation averages about 6.5 kWh per square meter per day and the skies are sunny about 300 days a year. Consequently, the potential for solar energy development is high, not only for solar water heaters for homes, hospitals and other buildings, but also for generating electricity. In addition, some 125 sites have been identified for micro-hydro resource development with the potential to generate 100 MW of power.

Other renewable energy technologies, particularly micro-hydro and wind energy, have broad applicability within rural areas of Afghanistan. The GOA, primarily through the Ministry of Rural Rehabilitation and Development in cooperation with the MEW has developed projects to promote micro-hydro development in rural areas. In addition, under the US National Renewable Energy Laboratory, wind mapping has been undertaken for many parts of Afghanistan as a basis for developing individual projects. The data indicate good potential for generating wind electricity in several parts of the country. The lead institute to support development of these resources in Afghanistan is the National Renewable Energy Research and Development Center, a part of MEW.

It is proposed that a Rural Energy Institute (REI) be established in the MRRD to demonstrate the application of appropriate technologies to rural environments and to demonstrate business models for income generation and cost recovery. The National Renewable Energy Research and

<sup>16</sup> Government of Afghanistan; Ministry of Energy and Water: Policy for Renewable Energy Rural Electrification, December 8, 2006.

Development Center would still remain the focal point for development of large renewable and would coordinate and lend assistance as required to the REI. This is consistent with both the new delineation of roles and the mission of MRRD as working with and through other Ministries.

At present, about 650 villages are supplied with electricity from photovoltaics, through a program funded by the National Solidarity Program (NSP). Other donors (e.g., Government of India) and NGOs (e.g., Norwegian Church Aide) are active in this area. The private sector also is encouraged to participate and invest in rural electrification and deployment of energy efficiency and renewable energy technologies. Although, NGOs and donors provide much assistance, there appears to be no clear IROA policy for rural electrification or for promoting private sector participation in rural energy projects; also coordination among ministries and other project participants' needs improvement.

Hydropower, solar, wind and biomass offer the most potential to contribute to energy supply. Development, however, requires sound institutional and financial support, sustained commitment and a long-term development horizon. Use of renewable energy is beset by a number of factors, including high upfront costs,<sup>17</sup> lack of suppliers, inadequate financing mechanisms, and weak institutional and technical capacity.

The objectives of the IROA's program for rural and renewable energy development are to provide a sufficient level of efficient, clean energy service to all rural customers. Current activities to promote rural and renewable energy projects include:

- Development of micro-hydro and solar power systems in rural areas.

- Installation of diesel generation in small and medium size cities where no alternatives to electricity access are available.
- NSP is working with Community Development Councils (CDCs) to install over 500 micro-hydro projects since 2003.
- Development of wind energy and biogas systems in selected rural locations.
- Institutional reform and capacity building initiatives at MEW and MRRD.
- Rehabilitation of hydro generation plants in Pul-i-Chemri, Khanabad, Saurobi, and Mahipar.
- Feasibility studies for new hydro power plants in Baghdara (280MW) and Saurobi 2 (180MW).
- Electrify 25 Small Towns and 800 Representative Rural Households by 2013 (80MW). The Inter-ministerial Commission for Energy (ICE) is supporting several action items including<sup>18</sup>: (1) strengthening the NSP program; (2) initiating a rural electrification action-oriented agenda and establish an energy committee to connect small towns such as Khulm, Aybak, Doshi, Chatikar and Baghlan.

Rural and renewable energy projects contribute several types of benefits that help improve rural well being. They contribute to physical capital through infrastructure development, financial capital through credit provision, human capital through training, and social capital through enhancing the ability of communities to work together to better the lives of inhabitants. Project activities also focus on rural enterprise development and local empowerment. Alone, they do little to increase economic activity but combined as part of an integrated rural development package they are very effective.

<sup>17</sup> For example, estimate for Photovoltaic electricity, as per MRRD (Mostafa Torkan, May 24, 2007) is \$12,000/kW, as compared to: (i) Micro-hydropower at \$1,200/kW and Diesel generated power at \$500/kW.

<sup>18</sup> ICE is a coordinating body, not an implementing body. It is not clear that it is supporting these actions in any direct way.

Electrifying rural areas faces daunting challenges, including dispersed populations; often difficult terrain; high initial capital and operating costs of power systems; poor load profiles; weak rural energy implementing entities; need for continual subsidies; poor private sector participation; and lack of standards and regulation. A comprehensive strategy is needed to promote an enabling environment that supports project development and also ensures participation by the poor in decision-making and project implementation.

Development of rural and renewable energy resources, including rural electrification, is taking place in Afghanistan without a clear institutional or policy framework. There is a de facto split of responsibility for rural electrification among ministries and coordination between ministries and donor-funded programs needs improvement. The Government needs to articulate a policy that clearly defines goals and objectives; clarifies the role and expected scope of subsidies; and emphasizes the role of the private sector. A clear, standardized procedure for assessing and evaluating renewable energy resources as the basis for supporting development of pilot projects needs to be established. Various methods of supporting rural energy projects, such as community development entities, rural cooperatives, and franchises, need to be evaluated and tested as to their applicability to Afghanistan.

Examples of successful rural energy projects that could be supported by the IROA and donors include the following:

#### **POWER DISTRIBUTION IN GHAZNI**

Ommary Electric Company (OEC) is a private company operating in Ghazni for over 8 years. It operates 8 diesel generators with a total capacity of about 1 MW and distributes power throughout the city on its own low-voltage system. OEC serves more than 8,500 customers with a staff of 42 and offers 24-hour service. The power tariff is

based on the cost of diesel fuel and in July 2006 was 35 Afs/kWH. All customers are metered and new customers pay a non-refundable connection fee of between 1,000 and 3,000 Afs depending on the connection distance. OEC is essentially self-regulated, and provides a good example of private sector initiative that could be encouraged through an official “light handed regulation” policy.

#### **RURAL ELECTRIFICATION IN BANGLADESH<sup>19</sup>**

The Bangladesh off-grid electrification fund supported by the World Bank Rural Electrification and Renewable Energy Development Project (RERED) provides solar home systems to rural households and has supported deployment of as many as 3,000 household systems per month. With the assistance of Participating Organizations (POs), including municipalities, NGOs and the private sector, the program has resulted in the installation of nearly 90,000 solar home systems and has extended its funding to cover biogas and community electricity systems.

The fund is administered by the Infrastructure Development Company Limited, a non-bank financial institution and provides both credit and Global Environmental Facility (GEF) subsidies to 14 Pos to purchase PV household systems from a list of vendors approved by a Technical Standards Committee (TC). Overall, the Fund provides the following benefits:

- Provides loans to POs who pass the funds on to customers (up to 80% of cost of a PV system).
- Provides the GEF-financed grant.
- Develops customer awareness of solar home systems or other rural energy programs.

<sup>19</sup> While the market characteristics of Bangladesh are significantly different than Afghanistan, the example highlights how innovative mechanisms can be effectively used.

- Provides technical assistance to POs in developing proposals for financing.
- Selects POs based on their performance and financial track record.
- Supervises activities of POs and coordinate activities between POs, suppliers and customers.
- Assists the TSC on program-eligible equipment specifications.

The success of the program relies on the ability to mobilize the POs and micro-finance providers based on their experience and knowledge of rural communities in Bangladesh to support development of solar home systems.

## BARRIERS TO ACCESS

For Afghanistan, barriers to increasing access to electric power, particularly in rural areas—in addition to policy constraints—have much to do with the physical nature of the investments required, the large scale of the undertaking, and broad country issues (e.g., security, remote location, difficult terrain). These issues need to be effectively addressed through IROA policies and project development and implementation.

Solutions to these problems can be found through a mixture of policies and programs that continue to rely on IROA involvement in the sector (with donor assistance) particularly over the short-term while the necessary framework is being put into place. These programs also need to unleash the potential of the domestic and international private sector to provide an expanded array of energy services and allow the withdrawal over time of direct involvement in the sector by the IROA and its transition to an oversight and regulatory function.

The IROA needs to explore options for achieving this goal and to put in place policies and programs that will remove barriers to private participation in

the energy sector. Examples of supportive policies and programs include “Light Handed Regulation for Stand Alone Systems” similar to that currently practiced by the Omari Electric Company. However, to be effective this needs to be part of an official IROA policy for rural electrification. The policy would allow self-contained power systems in rural or urban areas to be “self-regulating” in terms of setting service quality, pricing, connection and disconnection standards, billing, etc. and would apply to cooperative or private sector providers. Basic licensing, safety and technical standards would be applied by the GOA.

The need for small-scale, site specific solutions means that significant technical and financial resources are required to bring modern energy services to the bulk of the rural population. Given the scope of the problem and the limitations on Government resources, it is particularly important to prioritize specific measures to be pursued in order to maximize impact and ensure sustainability. The Government should seek to promote rural electrification with an emphasis on income-generating activities where possible.

This underscores the importance of maximizing the benefit of limited resources and of considering the trade-offs within an overall Energy Sector Strategy of rural versus urban programs; government versus private intervention; and fossil versus renewable energy resources. Given the scope of rural energy needs and the limitations on IROA resources, it is important to prioritize specific measures to be pursued, to ensure that they meet IROA objectives and the effort by the GOA, donors and NGOs are properly coordinated to maximize results.

## RECOMMENDATIONS

To accomplish these goals within the Energy Sector Strategy, the following activities should be pursued.

**1. Increase collaboration between MEW and MRRD and Delineate Responsibility for Rural Energy Development.** As noted under the Electricity Sector section, responsibility for all rural-remote energy efforts should be consolidated within one institution, RLED, with membership by all stakeholders to help coordinate rural-remote energy programs and projects. It appears that the MRRD is the proper entity to head up this effort. Rural energy is defined as off grid applications such as SHS, micro-hydro, and diesels in areas of less than 2,500 persons. It could also include the use of wind power for both electrical and mechanical energy, for example. It would not include any grid connected applications. It also includes rural electrification. Since there is no universal definition of rural, the definition for this purpose is something needs to work out. REDA would also be responsible for developing a rural-remote energy master plan.

**2. In collaboration with NURC, develop Rural Energy Policy to include Light Handed Regulation** as an official policy of the IROA and implemented by the MRRD to promote development of stand-alone rural energy systems by cooperatives or the private sector. Policy and regulation must set guidelines for cost-recovery. In essence all project need to be able to recover operation and maintenance costs and set aside a sinking fund for capital replacement. The rural energy policy and master plan will investigate appropriate fuels for cooking.

**3. Develop a Methodology for Assessing Rural and Renewable Energy Resources and Technologies,** including hydro (large scale, mini and micro), diesel, solar, wind, biomass; and

evaluating and prioritizing potential projects based on expected benefits; and a rural and renewable energy development program needs to be incorporated within the

IROA's overall energy sector strategy, including an effective monitoring and evaluation program.

**4. Assess and Establish Models for Project Ownership and sustainability** with emphasis on capital and operating requirements, government subsidies, and financing methods. Models could include electric cooperatives, franchises, provincial or district government entities, or some combination. Any policy needs to incorporate household and community involvement to the maximum extent possible.

**5. Assess and Establish Models for Technical Support** (technical standards, installation, O&M support) such as university outreach or

extension program; MRRD/DAMB offices at the district level to include rural technical support and funding; district or provincial governments; private sector involvement.

**6. Pilot Projects** utilizing alterative project implementation techniques (e.g., coops, franchise) and technologies (e.g., wind, solar, hydro) need to be developed. Best practices in developing, operating, monitoring and assessing the benefits for projects from within the region and elsewhere need to be applied. Pilot projects may also include appropriate cooking and heating that is not electricity based.



# CHAPTER 4

## CROSS-CUTTING ISSUES

To achieve its goals, in addition to providing for affordable and sustainable energy development the Energy Sector Strategy will incorporate mechanisms to support cross-cutting issues that impact all energy sector initiatives. These include the environment, counter narcotics, anti-corruption, gender and regional cooperation—in addition to capacity building.

### ENVIRONMENT

Energy, even renewable energy, has an environmental impact. This strategy directly addresses environmental impacts by:

- Focusing on policies and projects that improve the operating efficiency of energy production. It strives to get the most energy delivered for the minimum environmental impact. For example, reducing technical losses or cogeneration.
- Focusing on policies and projects that improve end use efficiency. These are areas that seek to reduce the amount of energy needed for any given activity. A CFL program is one such measure.
- Shifting investment and production to cleaner sources of energy, for example, wind power.
- Through the promotion of combining energy supply with income generating activities, as incomes increase, there is less pressure on natural assets. And, Through focusing on

appropriate energy such as better cooking fuels and better lighting, thereby reducing indoor air pollution.

- For oil, gas and coal, current law provides a set of environmental requirements to conform to NEA regulations. These will be incorporated into sector implementing rules and regulations. In addition, all environmental impact assessment and pollution control provisions of the Afghanistan Environmental Law will be complied with in regard to the construction, upgrading and operation of facilities and infrastructure for the generation, transmission, distribution and use of electricity developed through this strategy.
- The National Environmental Protection Agency (NEPA) will issue new Environmental Impact Assessment regulations in conjunction with the Ministry of Justice. Energy sector institutions, including the MEW, MoM, and MRRD will establish a working relationship with the NEPA to learn about the EIA process and ensure that its provisions are incorporated into all energy sector activities.

### ANTI-CORRUPTION

The energy strategy directly tackles corruption in several ways. One of the most important measures for reducing corruption is limiting the role or influence of Government. In energy, we are promoting increased private sector participation; we are reducing the role of

Government. Additionally, in SOE's, such as DABM, we introduced loss reduction programs that are targeted at finding and deploying ways of controlling corruption. We are also introducing better, more transparent procurement procedures. Furthermore,

increasing private investment in the energy sector requires rule-of-law and increased transparency and accountability; thereby indirectly strengthening anti-corruption, and anti-narcotics measures. Finally, the introduction of a multi-sector regulator outside the concerned ministries and under the Ministry of Economy will provide greater oversight.

## REGION COOPERATION

The most important areas furthering regional cooperation include expansion of energy trade by upgrading electricity transmission ties with Central Asian countries and exploring options for transport of electricity and natural gas through Afghanistan for regional supply. The NEPS represents one of the largest sector investments and the cornerstone of success in NEPS is expanded energy trade. Technical standards and commercial instruments will be developed. Physical investments are being made to improve trade. CASA 1000 is looking at using Afghanistan as an energy transit corridor. Regional cooperation will be enhanced by projects such as NEPS and efforts to increase cost-effective electricity imports from neighboring countries.

## GENDER AND POVERTY REDUCTION

Most energy interventions have the potential to provide positive benefits for women and children in particular and also for the poor in general. For example, women have specific energy needs in water pumping, agriculture processing, security, work productivity and health – most often that energy is provided by their own effort meaning that work significantly longer days than men.

More efficient stoves, drinking water pumping and agro-processing can reduce women's workloads, improve their health, and expand income-earning potential.

The energy sector has the potential to provide a wide pool of jobs as it is developed; for example, in the construction and repair of thermal plants, in coal mines, and in oil fields. Labor intensive construction methods should be considered. For skilled technical jobs, the energy sector can initiate training and apprenticeship schemes to provide on the job experience for new trade and technical graduates and engineers. Foreign personnel can contribute to such schemes as mentors and can also be tapped to advise on competency based occupational analyses, new curricula for training colleges and universities. Planning for major energy development projects should involve an "employment audit" which indicates numbers of temporary and permanent jobs expected; plans for training and replacement of foreign workers.

## COUNTER NARCOTICS

The strategy does not directly address this issue but it is clear that increased economic growth supported by an expanded energy sector particularly in rural and remote areas will help counter the cultivation of poppies and illicit drug trade. In many programs that have targeted poppy areas, success has been made when alternative livelihoods are found. A cornerstone of this strategy is the linking of energy supply to income generating activities.

## CAPACITY BUILDING

Finally, the major emphasis within the Energy Sector Strategy placed on institutional strengthening and capacity building—and on institutional reform, such as consolidating authority over rural electrification and rural energy projects and separating policymaking from regulatory authority—will result in fostering a professional,

open environment and increase opportunities for participation in energy sector activities on behalf customers and other stakeholders. This, in turn will support achievement of the ANDS cross-cutting goals. The strategy explicitly provides for capacity building projects and capacity building is one of the four pillars of the strategy.

Achieving improvements in capacity building requires a coordinated approach. The IROA has recently initiated the National Capacity Building Policy and Program designed to effectively address capacity building and training needs throughout the Government. It establishes an Inter-Ministerial Committee to coordinate and monitor capacity building efforts throughout the IROA to ensure their effectiveness. To improve program implementation and effectiveness, it established Reform Implementation Management Units (RIMU) within IROA Ministries. All capacity building initiatives developed through the Energy Sector Strategy will operate through this mechanism, and will include elements to address cross-cutting issues.

Moreover, achievement of counter narcotics and anti-corruption goals will be promoted through Energy Strategy efforts to expand access to electricity and promote economic development in rural and remote areas and to reform the sector by separating policy, regulatory, and operational function and promoting involvement by the private sector.

#### **COORDINATION AND EFFECTIVENESS:**

1. **Government.** Use of the ICE mechanism as well as improved public information will be essential for improved government coordination in the energy sector. Ideally, some now related if not duplicated energy functions at various ministries will be consolidated and appropriate line ministry “terms of references” for sector aspects will be drafted and agreed to.

2. **International Community.** While an ICE working group on donor coordination will be effective, it is essential that the donors themselves improve the way in which they are engaged with the Afghan energy sector. At present there are 25 donors engaged in the sector; in addition there are 15 different US agencies. Afghan counterpart resources are limited and stretched; donors need to respect these limits.

#### **RISK ASSESSMENT**

1. **Sector Governance,** Firmly entrenched practices of how Government implements sector operations have resulted in perceived and actual risk for viable private sector investment. A lack of legal and regulatory basis from which investors ordinarily operate, no technical standards and a disperse array of institutions responsible for sector development create serious risk for transparent procurement, contract certainty, predictability of the market and overall investor confidence.

2. **Security outside sector control,** Whether sometimes perceived or often real, security aspects of infrastructure development in Afghanistan remain at the fore of investor concerns.

3. **Hardware and technical capacity** Virtually none of the equipment, supplies or spare parts required to operate the energy sector are produced or even available in the country. When they are on the local market they are often of seriously technically inferior quality and at very high cost. Some of the larger equipment (i.e., diesel generators, drilling rigs) can take up to one year to procure or to lease. Much of the modern technology that is being installed to upgrade the power sector has never been part of the system and no staff capacity exists to operate same; capacity building that includes health and safety awareness is essential.



# CHAPTER 5

## MONITORING AND EVALUATION

### Monitoring and Evaluation Reporting System:

A.1 Overall Reporting, Because of the diversity and breadth of energy sector operations, it is impossible to have one reporting system; different technical, financial and operational reporting is required. Still, there are common reporting requirements and approaches that will be followed.

- Sector Specific Reporting through Regulatory Bodies. It is expected that the cadastre and inspectorate functions for hydrocarbons and mining will be operational by end August 2008. More momentum for power regulation is required but will also provide reporting requirements and monitoring standards presently absent from the sector. Liquid fuels will also benefit from some external regulation.
- Ultimately, the establishment of a multi-sector regulatory body is possible (i.e., would regulate oil, natural gas, coal, electricity, liquid fuels, renewable)
- ICE. Through the ICE mechanism very definite reporting schedules have been instituted tracking high-priority projects (i.e., Northeast Power System) as well as identifying project funding and other gaps. This mechanism will continue to play an important role in how energy developments are tracked and monitored by Government.

A.2 Project-based reporting, Because many energy projects are donor funded, international standard reporting and monitoring mechanisms are in place. Government will abide by these requirements and where possible, adopt them to line ministry and overall sector project developments otherwise funded. Fro details refer to Annex II (Monitoring Matrix).

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# ANNEX I. ENERGY SECTOR STRATEGY ACTION PLAN

PILLAR : INFRASTRUCTURE SECTOR : ENERGY		Policy Actions or Activities	Category	Time frame	Responsible Agency
Outcomes	An enabling environment for private sector investment in energy sector created	Issuance of tenders for exploration and exploitation in northern country notably for power	Development	1387-1388 (2008-2009)	MoM, MoE, MoF
		Develop private sector opportunities to take on long-term production, transport, supply of CNG	Development	1388-1389 (2009-2010)	MoM, MoE, MoCI
		Outsourcing Operations at DABM (audit, billing)	Development	1386-1388 (2007-2009)	MEW
		Implement Private distribution projects	Development	1387-1389 (2008-2010)	MEW, MoM
		Private sector promotion in renewable energy	Development	1387-1388 (2008-2009)	MRRD, MoE, AISA
		Divestiture of the Liquid Fuels Enterprise	Development	1387-1388 (2008-2009)	MoF
		Assess and revitalize oil refinery	Development	1387-1389 (2008-2010)	MoCI, MoM
		Development of Sheberghan Gas Fields and Power Plant	Development	1387-1388 (2008-2009)	MoM
		Promotion of regional cooperation to facilitate various projects under the energy sector	Institution Building / RC Cross Cutting Issues	1387-1389 (2008-2010)	MEW, MoFA
		To mainstream into all administrative reform programs measures required to address the systems and incentives promoting anti-corruption within the public administration system and Development Activities.	Institution Building / AC Cross Cutting Issues	1387-1388 (2008-2009)	MEW, MoM
		To maintain the highest level of transparency, accountability and integrity in the relationship between the public and private sector.	Institution Building / AC Cross Cutting Issues	1387-1388 (2008-2009)	MEW
		Gender mainstreaming in the policies in the energy sector.	Development / Gender Cross Cutting Issues	Continue	MEW, MoWA
		Encouragement to Community Based Natural Resource Management for meeting energy needs of the people.	Institution Building / Env. Cross Cutting Issues	1388-1389 (2009-2010)	MoM, MEW
		Awareness generation of policy makers on the environmental issues so that they are taken care of in all projects in the energy sector.	Institution Building / Env. Cross Cutting Issues	Continue	MEW, MoM

PILLAR : INFRASTRUCTURE						
SECTOR : ENERGY		Policy Actions or Activities		Category	Time frame	Responsible Agency
Outcomes						
	Leveraging available donor assistance; pilot CNG for public vehicles (i.e., buses) and taxis; conversion of engines, fitting gas pump stations.		Development	1388-1391 (2009-2012)	MEW, MoCI, MoM	
	Establishment and operation of a regulatory authority	Legislation	1388-1390 (2009-2011)	Energy Sector Ministries and Institutions		
	Independent Power Producers (IPP) – agreement and incentives	Development	Continue	MEW, MRRD		
Expanded public power grid	Procure spare parts and fuel for thermal generation	Development	1387-1388 (2008-2009)	MEW		
	Repair existing transmission and distribution systems including rehabilitating and/or upgrading substations and distribution networks	Development	1387-1389 (2008-2010)	MEW		
	Install meters for cross border transmission	Development	1387-1388 (2008-2009)	MEW		
	Repair existing thermal plants	Development	1388-1389 (2009-2010)	MEW		
	Starting National Energy Conservation Program (NECP)	Development	Commenced, ongoing through 1388 (2009)	MEW, MoM, MoCI, MoF, MRRD, MoEc		
	Implement ICE technical assistance (ADB)	Development	1387-1389 (2008-2010)	DABM/S, MEW, MoF		
	Take appropriate measures to reduce electricity loss	Development	1387-1388 (2008-2009)	MEW DABM		
	Promotion of energy efficiency	Development	1387-1388 (2008-2009)	MEW, MoF, DABM/S		
	Kabul distribution procurement	Development	1387-1388 (2008-2009)	MEW, MoF		
	Completion of NEPS transmission	Development	1387-1388 (2008-2009)	DABM/S		
	Complete Turkmen assessment	Development	1387-1388 (2008-2009)	MEW		
	Assessments of South, East and West Transmission needs	Development	1387-1388 (2008-2009)	MEW		
	Procurement for meters	Development	1387-1388 (2008-2009)	MEW, MoF, DABM		
	Installation of Dispatch and Control System	Development	1387-1388 (2008-2009)	MEW, DABM		
	Motion detectors	Development	1387-1388 (2008-2009)	DABM/S		
	Line inspections (regular protocols)	Development	1387-1388 (2008-2009)	MEW		
	Health & Safety protocols	Development	1387-1388 (2008-2009)	MEW,MoM		
	Operation & Maintenance protocols	Development	1387-1389 (2008-2010)	MEW		
	Priority to providing energy in areas having substantial narcotics cultivation to promote economic activity to generate alternate livelihoods	Development/ CN Cross Cutting Issues	Continue	MEW		

PILLAR : INFRASTRUCTURE						
SECTOR : ENERGY		Policy Actions or Activities		Category	Time frame	Responsible Agency
Outcomes						
	Repair and rehabilitation of hydropower generation projects	Development	Continue	MEW		
	Independent Power Producers (IPP) – agreement and incentives	Development	Continue	MEW, MRRD		
	Link rural energy with micro and small finance programs	Development	1387-1388 (2008-2009)	MRRD		
	Develop a comprehensive and appropriate rural energy program	Development	1387-1388 (2008-2009)	MEW, MRRD		
	Public awareness on rural energy opportunities, benefits, funding	Development	1387-1388 (2008-2009)	MEW, MRRD		
	Assessment of priority areas based on income-generation opportunities	Development	1387-1388 (2008-2009)	MEW, MRRD		
	Special attention to gender issues in providing energy for rural areas.	Development	1387-1388 (2008-2009)	MEW, MRRD, MoWA		
	Private Sector promotion in close as formalization of existing operator rights; tender for new rights (i.e., to support power generation)	Legislation	1387-1388 (2008-2009)	MoM, MEW, MoF		
	Private power generation policy	Legislation	1387-1388 (2008-2009)	DABM/S		
	In collaboration with National Regulation Utility Commission (NURC), develop Rural-remote Energy Policy	Legislation	1387-1388 (2008-2009)	MRRD, MEW		
	Power Purchase Agreements for Power Imports	Legislation	1387-1388 (2008-2009)	MEW		
	Establishment and operation of a legal/regulatory authority	Legislation	1388-1390 (2009-2011)	Energy Sector Ministries and Institutions		
	Revised 2 laws and 2 regulations related to Hydrocarbons, minerals and Market Cadastre & Inspectorate	Legislation	1387-1389 (2008-2010)	MoM		
	Restructured Energy Sector Governance and Commercialized operations					
	Corporatization and ongoing commercialization of DABS	Legislation	1387-1388 (2008-2009)	MEW, MoF		
	Power tariff reform	Legislation	1387-1388 (2008-2009)	MoI, MEW		
	Establishment of viable ICE working groups	Institution Building	1387-1388 (2008-2009)	MoE, MEW		
	Improved GoA, Donor & NGO Coordination	Institution Building	1387-1388 (2008-2009)	Energy Sector Ministries and Institutions		
	Build Afghan capacity to operate and maintain system	Institution Building	1387-1389 (2008-2010)	Energy Sector Ministries and Institutions		

PILLAR : INFRASTRUCTURE					
SECTOR : ENERGY					
Outcomes	Policy Actions or Activities	Category	Time frame	Responsible Agency	
	Needs Assessment and Data Base	Institution Building	1388-1389 (2009-2010)	Energy Sector Ministries and Institutions	
Establish Project Management Unit		Institution Building	Exist	MEW	
Establish Pricing regime for natural gas		Institution Building	1387-1388 (2008-2009)	MoM, MoF	
Define Government roles in clearly defining TORs for MRRD and MEW on rural energy aspects		Institution Building	1387-1388 (2008-2009)	MRRD, MEW	
Development of basic technical standards based on MRRD materials		Institution Building	1387-1388 (2008-2009)	MRRD	
Annual audit of all operations		Institution Building	1388-1389 (2009-2010)	MoM,MEW,MRRD	
Develop and implement the organizational structure and staffing plan for Rural Livelihoods and Energy Department (RLED)		Institution Building	1387-1388 (2008-2009)	MRRD, MEW	

## ANNEX II: ENERGY SECTOR STRATEGY MONITORING MATRIX

PILLAR: INFRASTRUCTURE SECTOR: ENERGY		Indicator	Baseline	Targets
Expected Outcomes				
An enabling environment for private sector investment in energy sector created	Index on the progress of creating an enabling environment for private sector investment in energy sector.	TBD		Enabling Environment for Private Sector by 2009
Expanded public power grid	% of households electrified in urban areas % of households electrified in rural areas. % of non-residential consumers provided electricity. Index on the progress of expanding public power grid.	30% 10% 35% TBD	65% (2011) 25% (2011) 90% (2011)	
Increased Access to Rural Energy Services	Index on the progress of increasing access to rural energy	6%		A strategy for the development and use of renewable energies will be developed by March 2008
Promotion of Private sector Restructured Energy Sector Governance and Commercialized operations	Index on the progress of promotion of private sector in energy sector Index on the progress of restructuring energy sector governance and commercialized operations	TBD 60%	TBD Energy sector governance restructuring and commercialized operations by 2010	
	% of recovery of cost of supply	60%		75% of the costs will be recovered from users by March 2011

### ANNEX III: LIST OF PROGRAMS AND PROJECTS (ENERGY SECTOR)

S/N	AFG Budget Ref	Program/Project Title	Project Duration		Breakdown of Requirement (US\$ Million)				Requirement (US\$ Million)	Total Funding (US\$ Million)	Gap (US\$ Million)	Major Donor	Core/ External	Responsible Agency	
			Start	End	1387	1388	1389	1390							
1	AFG/0316701	Feasibility Study for Hydro Power Plants on Kokcha Rivers (upper and lower)	1383	1390	2.500	25.00	50.00	100	100	277.500	1.180	276.320	AFG	Core	MEW
2	AFG/0317801	Rehabilitation and Expansion of Power Distribution Networks in Kabul Category 1	1382		1.450					1.450	1.450	0.000	AFG	Core	MEW
3	AFG/0455501	Capacity Building and Institutional Development of (Project Coordination Unit,PMU)Stations	1382		2.260	2.40				4.660	2.260	2.400	WB	Core	MEW
4	AFG/0473301	Emergency Power Rehabilitation Project	1384	1389	41.900	45.00	45.00			131.900	29.000	102.900	WB	Core	MEW
5	AFG/0473705	Feasibility Study for Baghdara Hydro Power Plant	1384		0.460					0.460	0.460	0.000	ARTF	Core	MEW
		Power transmission and Distribution project(110kV Trans Line from Shir Khan Bandar to Himam Sahaib,220/20kV S/S Taliqan,110kV/20kV at Sari Puli,110kV Trans Line From Naghlu to East Jalabad, Mintherlam & Lalabadd								65.200	49.000	16.200	ADB, AFG	Core	MEW
6	AFG/0501701	Taliqan,110kV/20kV at Sari Puli,110kV Trans Line From Naghlu to East Jalabad, Mintherlam & Lalabadd	1385		49.000	16.20									
7	AFG/0524401	Rehabilitation of 220 kv Transmission Line from Hairatan to Pul-e-Khumri, NBD switching station	1382		6.410					6.410	6.410	0.000	ADB, AFG	Core	MEW

S/N	AFG Budget Ref	Program/Project Title	Project Duration	Breakdown of Requirement (US\$ Million)					Total Requirement (US\$ Million)	Total Funding (US\$ Million)	Gap (US\$ Million)	Major Donor	Core/ External	Responsible Agency	
			Start	End	1387	1388	1389	1390	1391	1392+					
8	AFG/ 0524404	Kabul and Mazar-e-Sharif Distribution Network and Construction of Aybak Substation	1386		26.000	20.00					46.000		26.000	20.000	ARTF Core MEW
9	AFG/ 0603801	Extension of 220 Kv transmission line from Tajikistan boarder to Kunduz and pulikhunri including baghlan and kunduz substations	1384		36.500	15.00					51.500		36.500	15.000	ADB, ISDB Core MEW
10	AFG/ 0604601	Procurement of 25 Diesel Generator Sets for Kabul City including synchronizing of diesel generators	1383		0.090						0.090		0.090	0.000	AFG Core MEW
11	AFG/ 0665701	Extension of transmission line from Kabul to Logar, Khost, Paktika and Gardiz including of its network and substations	1385		15.000	30.00	25.00				70.000		15.000	55.000	ADB Core MEW
12	AFG/ 0728901	Extension of 220 kv Transmission line from Kunduz to Taloqan	1386		3.500	4.21					7.710		3.500	4.210	ADB Core MEW
13	AFG/ 0729001	Rehabilitation of Jabolulsaraj Hydro power plant	1386		1.390						1.390		0.000	1.390	Core MEW
14	AFG/ 0729101	Electrification of Robat Sangi Gulran and Koshk districts of Herat province	1386		3.000						3.000		0.000	3.000	Core MEW
15	AFG/ 0729501	Rehabilitation of Pulikhunri 2 Hydropower plant	1386		1.000						1.000		0.000	1.000	Core MEW

S/N	AFG Budget Ref	Program/Project Title	Project Duration		Breakdown of Requirement (US\$ Million)					Total Requirement (US\$ Million)	Total Funding (US\$ Million)	Gap (US\$ Million)	Major Donor	Core/ External	Responsible Agency	
			Start	End	1387	1388	1389	1390	1391	1392+						
16	AFG/0781401	Power distribution networks of Major Urban Centers including Kabul	1387	1390	25,000	50,00	100,00	100,00	35,00	310,000	5,000	305,000	AFG	Core	MEW	
17	AFG/0806401	Design and Construction of Small and medium Power Plants in Provinces (Bamyan, Ghor, Badakhshan and Kunar)	1387		8,790	23,00	23,00			54,790	8,790	46,000	ADB	Core	MEW	
18	AFG/0806601	Feasibility Study of Olambagh Power Plant in Orogzgan Province at Capacity of 90 MW	1387		0,500	2,00				2,500	0,000	2,500		Core	MEW	
19	AFG/0806701	Construction of Combine Cycle	1387		5,000	10,00				15,000	0,000	15,000		Core	MEW	
20	AFG/0806801	Construction of Substation in Kholm and Extension of Distribution Networks in Kholm ,Pulikhomri ,Aybak, Doshi, Jabisaraq, Gulbahar and Charikar	1387		60,000	18,00				78,000	15,000	63,000	ARTF	Core	MEW	
21	AFG/0807501	Design of Irrigation and Power Dam of Lower Kokcha	1387		3,000	2,00				5,000	0,000	5,000		Core	MEW	
22	AFG/0813501	Feasibility Study of Sorobi 2 Power Plant in Capacity of 180 MW	1387		0,500	2,50				3,000	0,000	3,000		Core	MEW	
23	AFG/0752501	Sheberghan Gas Power Plant	1387		1388	75,00	75,00	0,00			150,000	149,170	0,830	USAID	External	MEW
24	AFG/0752602	National Load Control Center - NEPS	1387		50,00	0,00	0,00			50,000	50,000	0,000	USAID	External	MEW	
25	AFG/0752901	REFS PASA support to infrastructure:Core Cost	1387		18,00	0,00	0,00			18,000	18,000	0,000	USAID	External	MEW	

S/N	AFG Budget Ref	Program/Project Title	Project Duration		Breakdown of Requirement (US\$ Million)					Total Requirement (US\$ Million)	Total Funding (US\$ Million)	Gap (US\$ Million)	Major Donor	Core/External	Responsible Agency	
			Start	End	1387	1388	1389	1390	1391	1392+						
26	AFG/0780301	Construction 220 kV Double Circuit Transmission Line from Pul-e-Khumri to Kabul and Baghlan and construction of Sub-Stations (Pule-e-Khumri, Charikar and Kabul)	1386	48.43	3.36	3.36					55.145	55.145	0.000	IND	External	MEW
27	AFG/0816901	Reconstruction and completion of Salma Dam Power Project (42 MW) in Heart province	1387	36.00	25.00	35.00	40.00				136.000	36.000	100.000	IND	External	MEW
28	AFG/0827501	100 MW Kabul Genesets	1387	65.00	0.00	0.00					65.000	65.000	0.000	USAID	External	MEW
29	AFG/0827601	Operation and Maintenance of Power Facilities	1387	2.00	0.00	0.00					2.000	2.000	0.000	USAID	External	MEW
30		Rehabilitation and construction of small and medium sized hydro power plants (Nationwide)	1383	1392	75.00	100.00	125.00	100.00			400.000	0.000	400.000			MEW
31		Power Transmission line and distribution networks	1385	1389	39.00	70.00	31.00				140.000	0.000	140.000			MEW
32		Turkministan	1387	1394	10.00	35.00	50.00	100.00			195.000	0.000	195.000			MEW
33		Sorobi 2 Power Plant	1387	1393	50.00	100.00	125.00	125.00			525.000	0.000	525.000			MEW
34		Kajaki Power Plant	1387	1391	15.00	25.00	50.00	60.00			150.000	0.000	150.000			MEW
35		Kalagosh Power Plant	1387	1391	70.00	90.00	40.00				200.000	0.000	200.000			MEW
36		North East Power Supply	1387	1390	50.00	50.00					100.000	0.000	100.000			MEW
37		South Power System (Logar, Paktia, Paktika, Khost)	1387	1389	15.00	25.00	40.00	75.00			155.000	0.000	155.000			MEW
38		Ulambagh Hydro Power Project (Uruzgan)	1387	1393	25.00	75.00	100.00	125.00			325.000	0.000	325.000			MEW
39		Baghdara (Parjisher) Power Plant	1387	1393	25.00	25.00	25.00	25.00			100.000	0.000	100.000			MEW
40		Renewable Energy	1387	1392	40.00	50.00	50.00	50.00			240.000	0.000	240.000			MEW
	Total:	Fuel Subsidies for Diesel Generators			676.68	863.67	912.36	845.00	795.00	50.00	4,142.71	574.96	3,567.75			

## ANNEX IV: LIST OF PROVINCIAL PRIORITY PROJECTS (ENERGY SECTOR)

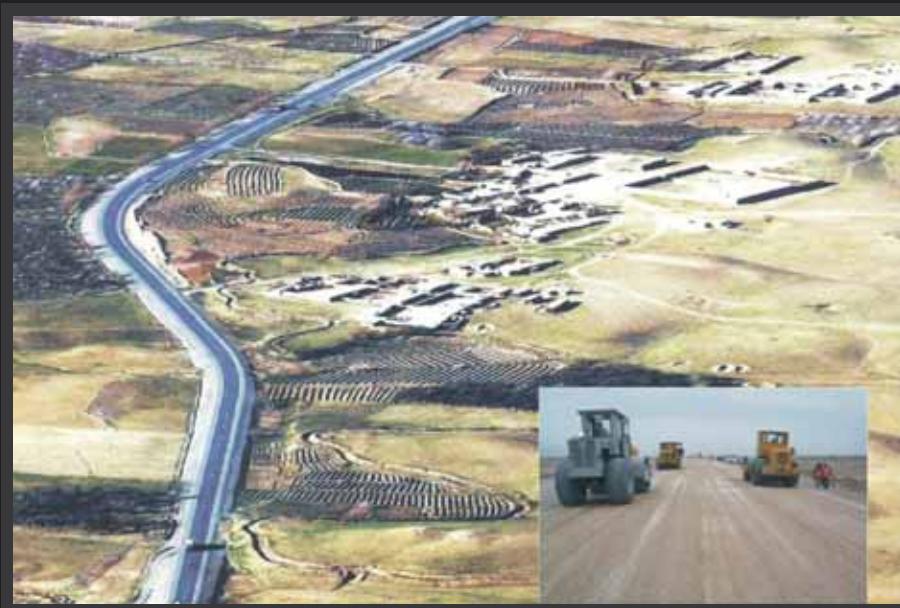
No.	Project Name	Project Location	Responsible agency	Project Duration (year)	
				Start	End
1	Upgrading of the electricity system from 6 kilowatt to 20 kilowatt.	Balkh	MEW	1387	1387
2	Construction of small electricity hydropower dam in Mangalha, Tala, Duab, Esfahan, Khorosh and Char Dar, and it will be beneficial to 20000 families.	Bghlan	MEW	1387	1387
3	Construction of Ajar Hydropower Dam. In Khamard about 10 MW	Bamyan	MEW	1387	1387
4	Construction of Gazak hydropower dam and Sabgee bridge in Ykawlang district (90000 beneficiaries) about 5 MW	Bamyan	MEW	1387	1387
5	Construction of hydropower dame in Doabi Bolola .Shibar. 6 MW	Bamyan	MEW	1387	1387
6	Conatrucion of Yamgan hydropower dam in Yamgan district.	Badakhshan	MEW	1387	1387
7	Construction of Singal hydropower dam (100 MW) in Centre of province 4 <sup>th</sup> district.	Badakhshan	MEW	1387	1387
9	Construction of Gangor Chi hydropower dam in Kishim district.	Badakhshan	MEW	1387	1387
10	Construction of Shar e Sabz hydropower dam in Shaki district. 1500 KW	Badakhshan	MEW	1387	1387
11	Construction of Karonj and Shaghnan hydropower dam in Shaghnan district.	Badakhshan	MEW	1387	1387
12	Construction of Tagab district hydropower dam.	Badakhshan	MEW	1387	1387
13	Construction of dam in Nalij Miramoor. (320m)	Daikundi	MEW	1387	1387
14	Construction of dam in Nili for production of electricity power (30MW)	Daikundi	MEW	1387	1387
15	Construction of hydro power dam in Sangtakht and Bandar. (One dam, 800 kw)	Daikundi	MEW	1387	1387
16	Establishment of electricity energy station in Almar. (One sub station)	Faryab	MEW	1387	1387
17	Extension of 11kw electricity line from Shibirghan to Aqach and Qarqin area and establishment of power sub station in Shibirghan district.Jangal Bagh road (400000 beneficiaries).	Jawozjan	MEW	1387	1387
18	Construction of electricity power station in Qarqin and Darzab districts (10 kw).	Jawozjan	MEW	1387	1387
19	Establishment of small hydropower dam in Anaba ( 1000 Kw)	Pajshir	MEW	1387	1387
20	Construction of factory rooms for Daronta hydro power dam. Beneficiaries 1000000	Nangarhar	MEW	1387	1387
21	Hydro power and irrigation project for Surkh Rood,100000	Nangarhar	MEW	1387	1387
22	Electricity cable from wokhnil sub-station and set up of transformers.	Kabul	MEW	1387	1387
23	Electricity cables in Bagrami district.	Kabul	MEW	1387	1387
24	Construction of electricity dam in Dara-i-Suf Bala district.	Samangan	MEW	1387	1387
25	Construction of electricity sub-station in the centre of the province	Samangan	MEW	1387	1387
26	Extension of electricity net work in the centre of the province.	Samangan	MEW	1387	1387
27	Construction of a hydro power plant in Kohistan, Kohband, Nijrab and Alasai. (About 150000 m3 and 8650 families as beneficiaries.)	Kapisa	MEW	1387	1387
28	Construction of electricity dam of Takht Langa.	Badghis	MEW	1387	1387
29	Construction of electricity dam of Takht Langa.	Badghis	MEW	1387	1387

No.	Project Name	Project Location	Responsible agency	Project Duration (year)	
				Start	End
30	Provide the Energy (Electricity) to the District Shawali Kot for 140000 people About 500 k. watt.	Kandahar	MEW	1387	1387
31	Dynamo generated power source from Nahre Shahe to the centre (150 kw).	Laghman	MEW	1387	1387
32	Construction of a hydropower dam in Khak Afghan & Tamo (50000 beneficiaries).	Zabul	MEW	1387	1387
33	Provision of Electricity for Taren kot City 200 Kw Beneficiaries All Taren Kot	Urozgan	MEW	1387	1387
34	Provision and Distribution of Electricity in centre of Chahar Cheno Khas Urozgan Gizab and chora District 200 kw Beneficiaries 30000	Urozgan	MEW	1387	1387
35	Construction of dam at the districts level (20 dams).	Ghor	MEW	1387	1387
36	Establishment of small hydropower dame in Taiwira, Lalsarjangal and Tolic districts about 20 dams.	Ghor	MEW	1387	1387
37	hydropower dame in Taiwira, Lalsarjangal and Tolic districts about 20 dams.	Ghor	MEW	1387	1387
38	Construction of hydro dam in provincial centre. (300000 beneficiaries).	Ghor	MEW	1387	1387
39	Establishment of electricity network in Farah city Beneficiaries 300000.	Farah	MEW	1387	1387
40	Creation of Kamal khan dam on the hilmand River in Charbujak district.2 km Beneficiaries 200000.	Nimroz	MEW	1387	1387
42	Construction of electricity production projects in centre of Bargumtal.	Noristan	MEW	1387	1387
43	Construction of small hydpr-power dams. Centre of Noogram district.	Noristan	MEW	1387	1387
44	Construction of a hydropower dam in Armoor district, Kamdish.	Noristan	MEW	1387	1387
45	Construction of a hydropower dam in Paroon, Nooristan district.	Noristan	MEW	1387	1387
46	Construction of a hydropower dam in Wama district .	Noristan	MEW	1387	1387
47	Construction of head power in Spena Barkha district, Want Waigal and Mandol district . Is this the same as hydro power?	Noristan	MEW	1387	1387
48	Construction of hydropower headworks in Barginatal (2mw).	Noristan	MEW	1387	1387
49	Provision of electricity to Bust Area of Lashkargah beneficiaries 2% People	Hilmand	MEW	1387	1387
50	Reconstruction of Kajaki Dam Beneficiaries All Province From Water and electricity	Hilmand	MEW	1387	1387
51	Construction of hydro dam in Kamkai Mazghor.Beneficiaries 300000	Khost	MEW	1387	1387
52	Construction of dam in zambar centre of Khost. Beneficiaries 200000	Khost	MEW	1387	1387
53	.Rehabilitation of Kachki dam in Shamalkhel bak district. Beneficiaries 16000	Khost	MEW	1387	1387
55	Construction of hydropower in Drang Sahak, Zurmat district (800 kw 50,000 beneficiaries).	Paktia	MEW	1387	1387
56	Creation of a hydropower dam in Tera district, Gardiz city. (production 500 kw).	Paktia	MEW	1387	1387
57	Rehabilitation of electricity network in district # 18.	Kabul Urban	MEW	1387	1387
58	Establishment of 10 megawatt hydropower dam, in Kasham Qura Mangorchi.(8000 beneficiaries).	Badakhshan	MEW	1387	1387
59	Construction of Kamki Marzghor hydropower dam	Khost	MEW	1387	1387



# Transport and Civil Aviation Sector Strategy

1387 - 1391 (2007/08 - 2012/13)

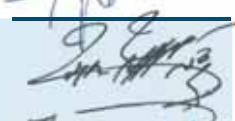
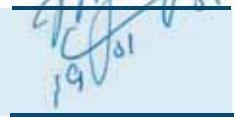


**Pillar III - Economic &  
Social Development**



# Transport Sector Strategy

Approved by  
Sector Responsible Authorities

Ministry/Agency	Name of Minister/Director	Signature
Ministry of Public Works	H.E. Dr. Sohrab Ali Saffary	
Ministry of Transport and Civil Aviation	H.E. Hamidullah Qaderi	
Ministry of Rural Rehabilitation and Development	H.E. Mohammad Ehsan Zia	
Ministry of Urban Development	H.E. Mohammad Yousaf Pashtun	



## EXECUTIVE SUMMARY

# TRANSPORT SECTOR STRATEGY

The vision of this Strategy is to ensure that Afghanistan's national development and poverty reduction goals are promoted by the transport sector. By following this Strategy, the Afghan transport sector will have a unified vision, mission, implementation plan and a monitoring system to ensure that transportation is used as a tool for economic growth and poverty reduction. Many studies have shown that connectivity through the transportation system is necessary for development, promoting equal treatment of women, and especially for poverty reduction. This transportation strategy lays out the vision, mission, goals, specific reforms and projects recommended along with their justifications that are consistent with the Afghan Compact. The Strategy provides ways to improve the governance of the sector, increase the role for the private sector where appropriate, and improve donor coordination. Financing is discussed in the context of the proposed projects in an appendix, and financial gaps are defined for each mode of transport in Afghanistan.

The implementation plan and the monitoring and evaluation system in this Strategy are generally at the macro level; all the details required to implement the Strategy are beyond the scope of this document. This Strategy requires that a top-level Transport Sector Inter Ministerial Working Group (TSIMWG) be created, with a mission of conducting a sector-wide needs assessment and preparing a detailed roadmap for institutional reform, donor coordination, and prioritizing

projects. The TSIMWG will prepare a Transport Sector Plan, and see that the plan is implemented over this Strategy's time horizon. The Strategy is a "living document," and must be adapted as Afghanistan evolves over the next five years. Most important, as the reforms presented in this Strategy are implemented, the ongoing transportation-sector improvements and the delivery of services are not to be disrupted, but accelerate so that Afghans continue to benefit from an improving sector.

### Strategic Vision

A safe, integrated transportation network that ensures connectivity and that enables the low-cost and reliable movement of people and goods within Afghanistan as well as to and from foreign destinations. This will give impetus to economic growth and employment generation and integrating with the global economy.

### Goals

#### Afghanistan Constitution:

Chapter 1, Article 6, states that "The State is obliged to create a prosperous and progressive society based on...balanced development in all areas of the country." This requires a broad-based and well-planned development of the transport sector.

The specific goals for the sector set by this Strategy over the next five years, set by the Afghan Compact are:

Fully upgraded and maintained ring road and roads to neighbouring countries by March 2009;

A fiscally sustainable system for road maintenance by March 2008;

Kabul International Airport and Herat Airport to be in compliance with the International Civil Aviation Organization's (ICAO) and the International Air Transport Association's (IATA's) requirements by March 2010 (this includes runway and other improvements at Herat, Mazar-i-Sharif, Jalalabad, and Kandahar);

A more general goal of the Compact directly applies to the transport sector to promote regional cooperation:

By end-2010: Afghanistan and its neighbours will achieve lower transit times through Afghanistan by means of cooperative border management and other multilateral or bilateral trade and transit agreements; Afghanistan will increase the amount of electricity available through bilateral agreements, and Afghanistan, its neighbours and countries in the region will reach agreements to enable Afghanistan to import skilled labour, and to enable Afghans to seek work in the region and send remittances home.

Other specific goals set by this Strategy consistent with ANDS and Afghanistan's targets for the MDGs are:

Ensure that rural road improvements and improvement in connectivity of remote villages to the national transport system receive high priority to accelerate poverty reduction to reach Afghanistan's first MDG.

As background, the first MDG set targets for reducing poverty. The specific targets under this goal are:

The proportion of people whose income is less than US \$1 a day decreases by 3% per annum until the year 2020, and The proportion of people who

suffer from hunger decreases by 5% per annum until the year 2020

At present, the outlook for reaching these goals is low. An integrated strategy of improved security, transport sector development, agriculture (extension services, alternative crops), water (irrigation and drinking water), health, counternarcotics programs, and education is needed if Afghanistan is to come near to reaching this goal. This Strategy recommends such integrated programs.

#### **The remaining goals are:**

Forty percent of all villages to be connected by all-weather roads to the national road system by the end of 2010 (this target is in the Afghan Compact and critical for poverty reduction);

Fifty-Six percent of all villages to be connected by all-weather roads to the national road system by the end of 2013;

Seventy percent of all roads in municipalities (i.e., cities) are rehabilitated or improved by the end of 2010;

Facilitate the international flow of licit freight and services on the nation's transport system by lowering road user fees by 75% to promote trade and growth, and by negotiations through SAARC and other international organizations by end-2008;

With the reduced road user fees, combine all fees into one fee, such as a fuel tax, and assign responsibility for its collection to a single entity by end-2009;

Promote Afghanistan's transport system as a conduit to increasing licit transit trade by 15% per year through SAARC and later accession to the WTO; this will require harmonization of standards and increasing trade and transit agreements with SAARC member nations;

Create, as soon as possible, an inter-ministerial costing committee to work with the Ministry of Finance to cost out annually programs that take five to fifteen years to implement; by end -2008;

All transport projects will be prioritized based on a combination of their estimated internal rate of return, impact on counterinsurgency, followed by impact on poverty reduction, gender equity and other social factors by end-2008;

All transportation projects are beginning to be implemented using Afghanistan's environmental laws and regulations by end-2008;

Mainstream gender awareness and participation of MOWA in all transport governance institutions and the private sector, with specific targets and benchmarks as specified in the Activity Policy Matrix;

Public transport (urban and inter-provincial transport) provided for 34 provinces including Kabul by 2010;

Restructure public transportation institutions so that their operational functions, with a few well-defined exceptions, are contracted out to the private sector by the government and under the direction of the government by 2013;

Encourage Public-Private Partnerships to build and operate new road transport corridors that will help better integrate Afghanistan into the Middle East, and South and Central Asia by 2013;

Put in place systems to improve transparency in all functions of the government in the transport sector by 2010;

Substantially improve the capacity of transport sector government staff and private actors so that the sector is operating efficiently and is on the path towards international best practices by 2010;

Give more autonomy to local communities and the Provincial Governments to determine how and when rural roads are improved, as well as provincial roads by end 2009;

Improve coordination between transport sector governance institutions, the MOI and ISAF so that the transport sector can better develop in conflict-affected areas of the country as soon as possible;

Increase public sector salaries in tandem with increases in capacity by end 2008;

In tandem with reductions in corruption increase cooperation between counternarcotics efforts and road design to allow for pull-off checkpoints for random counternarcotics checkpoints;

Reform laws so that the GOA has the right of eminent domain and a formulae to compute the "fair market value" of land purchased by the government for transport-sector improvements, along with implementing regulations, by 2010;

Governance of the transport sector will shift from direct Ministerial control to a system where the Ministries set policy, carry out critical planning, implement regulations, oversee management of the sector's publicly owned assets (i.e., roads, airports, rail terminals, and etc.) and contract out as many activities as appropriate to the private sector; thus the Ministries will develop strong contracts management units by 2010, and will use private-sector independent construction supervisors under contract to oversee works implemented by other private-sector contractors.

Annual assessment of data collected and databases maintained and updated in all planning departments, including municipalities, mapping progress against the goal of "best practices" data collection and databases for transport sector planning, with necessary funding mechanisms and capacity building programs in place and operational by 2009;

Strengthening the planning capacity of ministry staff for road transport, airports, and rail functions so that the ministry staff can perform feasibility studies, Masterplanning, and multi-modal planning, as well as asset management planning, to international standards by 2010;

Develop and put in place an axle-load limit violation fees and an enforcement system by end-2008;

Ensure that axle-load limits are harmonized for regional highways with the limits coordinated with bordering countries to promote international trade and regional cooperation by end-2008;

Establish laws, fines and enforcement mechanisms to keep people from encroaching on the right-of-way of roads by end-2008. Thus, people and businesses must be kept from building even temporary structures of the roads or their shoulders or drainage systems.

Review MPW's and MRRD's road standards so that they are harmonized with other internationally accepted standards to promote regional cooperation by end-2008;

Review MPW's and MRRD's road classification systems so that they are harmonized and meet international standards to promote regional cooperation by end-2008;

Mainstreaming the Counter-narcotics objectives in the development of projects by the transport-sector ministries. This will include consultations on the design of roads to allow for checkpoints, improved airport perimeter security, use of labour-intensive techniques, and multisectorally integrated road-led development programs;

Improve the business environment for private businesses working to improve roads and other parts of the transport system;

Improve the capacity and make the Civil Aviation Authority under MoTCA by 2009, and transition control of Afghan airspace to the Afghan Civil Aviation Authority as soon as practicable;

The civil aviation airports at Mazar-i-Sharif, Jalalabad, and Kandahar are upgraded with runway repairs, provided with modern communication systems, navigational aids, fire, and rescue equipment by end-2010;

Seven other domestic civil aviation airports are upgraded so that there is an increase in domestic air travel with improved services and costs that are competitive with international standards and rates by end-2010;

Road sub-sector infrastructure maintenance and improvements to be financed from revenue raised by the sub-sector through a dedicated and independent road fund by 2009;

Civil Aviation infrastructure maintenance and improvements to be financed through nation budget from revenue raised by the sub-sector by 2009;

Build or strengthen intermodal loading and unloading stations at all railheads to lower the costs of loading and unloading freight being moved between international rail shipments and truck shipments within the country by end 2009;

Have in place strong road and airport safety programs and implementing regulations by end 2009;

Substantially improve the MOI's Traffic Management Bureau's capacity to conduct drivers' licensing tests, vehicle safety inspections and enforce traffic flow regulations by end-2008;

Establish the Transport Sector Inter Ministerial Working Group (consisting of the Ministers from MPW, MOTCA, MRRD, MoUD, MoF, MOI, Kabul Municipality, the

Independent Directorate of Local Governance, and the MoFA) to develop the Transport Sector Plan, Plan to be completed by end-2008;

Lines of authority and responsibility for governance of the sector will be improved by

creating a Transport Sector Inter Ministerial Working Group (TSIMWG) as soon as possible (prior to March 2008). The key responsibilities of the Group will be to:

Coordinate activities in the sector;

Monitor and implement the sector strategy; and

Develop plans and policies for the sector.

The key issue for the TSIMWG to deal with is to determine the lines of authority between the transportation-related governance institutions and the roles and responsibilities of each institution. The Group or some person or institution determined by the Group will need to be given the authority to arbitrate and enforce these responsibilities over the member institutions. The Group should also determine how to include the Provincial Governors' administrations and the Municipalities' administrations in the decision-making process for the sector.

All urban transport planning should be based on forecasts of expected demand for transport services (i.e., Urban Masterplans). These are to include roads, pedestrian walkways, provisions for the handicapped users bicycle, pathways as well as the supply of publicly regulated low-cost bus services;

Due to large deposits of copper and other minerals, new rail lines, where feasible, could be built using labour-intensive techniques, providing jobs for poor unskilled labourers; and

Expanding the rail lines and building a rail system should receive a high priority when private investors are willing to develop Afghanistan's mineral and hydrocarbon resources, and when the private sector is willing to finance their share of developing these systems through Public-Private-Partnerships or through Build-Operate-Transfer (BOT) contracts with the government.

## Overall Transport Sector Outcomes

### Road transport

Improved connectivity throughout Afghanistan.

Lower road user costs.

Business environment for private sector development improved as well as job creation and poverty reduction.

Less journey time lost due to congestion.

Lower accidents/ fatality rate per PIA/MVK ( personal injury accidents per million vehicle kilometers)

### Civil Aviation

Increased domestic and international passengers and freight traffic.

All stakeholders are well informed about the viability of air transport systems.

Improved governance of civil aviation sector.

## Overall Transport Sector

**Improved air quality.** For details refer to Annex I (Action Plan)

### Inputs:

### Budget Requests

**Regional Highways:** Request: \$1,247.51 mil., Gap: \$266.23 mil.

**National and Provincial Roads Request:** \$1,494.72 mil., Gap: \$550 mil.

**ural roads:** 14,000 Km to be improved, costs not presented, to be under NRAP

**Urban/Cities roads request:** \$1100 mil, Gap: \$980 mil.

**Kabul Municipality Request:** \$681 mil., Gap: \$588 mil.

**Civil Aviation:** Request: \$374 mil., Gap: \$257 mil.

**Public Transport Request:** \$6 mil. Gap: \$0

**Operations and Maintenance Request:** \$46.93 mil., Gap \$38 mil.\*

**Railroads (Feasibility Studies) Request:** \$2 mil., Gap: \$2 mil.

**Other Request:** \$221.48 mil., Gap \$61.57 mil. \*\*

**NOTE:** Most of above estimates are not for the full five years, financial estimates are incomplete.

\* The O&M is extremely incomplete

\*\* Mostly feasibility studies and institutional strengthening projects (i.e. soft projects), also extremely incomplete.

**Totals: \*\*\* Requested: \$5,173.64 million, Gap: \$2,742.80 million\*\*\***

\*\*\* Excludes rural roads

### Institutional Reform: Basic Inputs

Create the Transport Sector Inter Ministerial Working Group that, among other activities, determines the lines of authority between the transportation governance institutions and the responsibilities of each institution.

Through the new Transport Sector Inter Ministerial Working Group, prepare a Transport Sector Plan that transforms governance of the sector to “best practices” in Afghanistan’s current context, without interrupting the flow of services to the people.

Establish a Transport Sector Civil Service. The Service will fill key slots in the new governance structure with individuals selected competitively, paid wages high enough to attract the best qualified people, and those in the Service will be on two-year, performance-based renewable contracts. Implement sharp penalties for corrupt practices.

### Outputs and Expected Results

Completion of 3,270 km of regional highway system by March 2009.

A fiscally sustainable road maintenance system by March 2008.

Forty percent of all villages to be connected by all-weather roads to the national road system by the end of 2010 (ANDS Target, to be exceeded if practicable to accelerate poverty reduction).

Seventy percent of all roads in municipalities (i.e., cities) are improved to a good standard by the end of 2010.

All transportation projects are beginning to be implemented using Afghanistan’s environmental laws and regulations by end-2008.

A transport system that promotes gender equity.

An inter-ministerial costing committee. Ministries to have trained Afghans to prepare feasibility studies and poverty analyses.

Ministries to collect traffic data and similar statistics, including those needed for indicators of this plan and generally plan for the future of each transport mode on a project-by-project basis.

All projects to be justified by feasibility studies, and competing projects ranked from those with the highest to lowest estimated internal rate of return (ROR). For rural roads, estimates of impact on social and poverty-reduction goals need to be given as well. Then those projects with the highest estimated RORs are funded first, except for those with big social, counterinsurgency, and poverty reduction impacts; they need to be given a higher priority. Goal to be reached by end 2009.

A Transport Sector Inter Ministerial Working Group that assigns roles and responsibilities to each of the transport-related governance institutions to developing the sector and avoiding duplications or gaps in the provision of transport sector services to the people.

Increase in private-sector employment opportunities in the transport sector, with special attention to filling at least 30% of those opportunities by women by 2010. Improved participation and leadership of women in the

sector and enhanced access to social services that are facilitated by better roads and transportation facilities by 2010.

A well-qualified private sector industry for road construction and maintenance.

Construction of the East - West Corridor (1,267 km) and construction of the North - South Corridor (775 km) by the end of 2011.

Set up a fiscally sustainable road maintenance system.

Kabul International Airport and Herat Airport will achieve full ICAO and IATA compliance.

Mazar-i-Sharif, Jalalabad and Kandahar will be upgraded with runway repairs, air navigation, fire and rescue, and communications equipment.

Seven other domestic airports will be upgraded to facilitate domestic air transportation.

Concessioning of airport services to private contractors to the extent possible to lower costs by end 2009.

## Outputs & Programs

**Regional/Ring Roads, Highways and Provincial Roads.** Over the next five years a total of 5,334 km of roads will be rehabilitated and reconstructed with the estimated cost of \$2.7 billion; but there is only about \$2 billion currently available and about \$800 million is still required. Over the next five years around 6,000 Km of National and Regional Highways will be maintained at a total estimated cost of \$400 million. For Regional Highways the breakdown is 3,455.7 km for a total estimated cost of \$1.2 billion. For planned National and Provincial road works, funding available is \$994 million with a gap of \$550 million. (Preliminary estimates)

**Rural Roads.** Over the next five years, 5,236.5 km of rural roads will be improved, and these serve about 2.8 million people. In addition, 1,054 km of

new village-to village roads will be built, serving 320,000 people. Maintenance will be performed on 7,133 km of rural roads, and these roads serve 3.5 million people. Finally, 707 km of new district roads will be built, serving 120,000 people.

**Urban Transport & Public Transport.** MoUD and the municipalities have over 45 programs to pave and upgrade urban roads throughout the country and expand the service availability of publicly supplied transport (i.e., busses). Costs are not estimated at this time. MOTCA will consider the best ways to use private-sector firms under contract to provide low-cost public transport across the country. Kabul Municipality will spend \$168 million to improve roads and bridges.

**Civil Aviation.** MOTCA has in place programs designed to meet all of the above goals. The estimated cost of these programs is \$374 million, with a financing gap of \$257 million. (Preliminary budget estimates). This does not include the costs of the institutional reform programs or establishing the independent Civil Aviation Fund for sustainable maintenance.

**Transport Sector Maintenance.** While MPW has a strategy, it needs to be refined and integrated into one national strategy for all roads, including urban and rural roads. MPW's plan is to continue to maintain roads using its own employees (force account) until a suitable alternative is found to employ the MPW's roads O&M labor force, and until MPW is satisfied that the private sector can actually perform quality O&M for roads. MPW realizes that the capacity of the Afghan private sector to carry out road reconstruction and maintenance is still low and needs to be strengthened before they can be effective partners with MPW. There is a need to push the development of a private sector road maintenance industry, and in the interim, use international contractors. The international contractors in the country always use Afghan private subcontractors, and this is a good way to build the capacity of the Afghan contractors.

**Railways.** By end 2009, a priority program is to strengthen intermodal loading and unloading stations at all railheads to lower the costs of loading and unloading freight being moved between international rail shipments and truck shipments within the country. Investors from the PRC have made overtures to the GOA regarding new rail lines to exploit the deposits of copper, coal, and iron ore. The GOA will conduct its own feasibility studies of possible new rail lines, and together with estimates of the value of mining Afghanistan's resources on an annual basis, will be able to negotiate a better set of commercial packages. Several other rail lines will also be considered by the GOA, after completing independent feasibility studies. For details of projects refer to annex III.

### Context

Given the history of the country over the last 25 years, the transportation system is in very poor

condition. To address this problem a massive reconstruction effort is taking place and has been ongoing since 2002. Almost all of the reconstruction is being financed by donors.

Until recently, all of the reconstruction has been managed by the donors directly, bypassing the government's transport-sector governance institutions. Recently, donors have more seriously turned their attention to reforming, capacity-building, and involving the government's transport-related ministries in improving the transportation system.

Yet, currently, while all transport-related ministries have completed their strategies; there is little coordination between ministries governing different aspects of the sector; and there is little coordination between donor activities in the sector. For Afghans to extract the most benefit from donor assistance and take charge of their destiny regarding transportation, a holistic approach to the sector is needed. This is complicated and made more costly by the fragmentation of transport-related responsibilities throughout a variety of government ministries. Thus this comprehensive Transport Sector Strategy is essential. Transport-related policy decisions of the Government of Afghanistan will be based on an integrated understanding of the sector and interactions between each element of the sector. Priority program funding decisions will also be guided by the same principle. A climate of competition between separate elements of the sector for limited donor and government financial resources will be replaced by informed governmental direction to guide investments to most efficiently benefit the Afghan people. Projects within the sector will be prioritized to reach the Afghan Compact goals as efficiently as possible. Projects will also be coordinated with projects in other sectors, such as agriculture, counternarcotics, water, regional integration, social protection and gender so as to reduce poverty as efficiently and fast as possible.

This Transport Sector Strategy provides the framework to enable the Government of Afghanistan to effectively manage the evolution of this critical sector in line with ANDS goals.



# INTRODUCTION

## IMPORTANCE OF AN OVERALL TRANSPORT SECTOR STRATEGY

The National Transport Sector Strategy puts forward the vision and the mission of the sector as it relates to the goals set forth in the Afghan Compact, I-ANDS and Afghanistan's commitment to its MDGs. From the mission for the sector, public and private stakeholders agree on the mechanisms to be used to fulfill the mission and meet the nation's goals for the sector. All stakeholders also agree on an integrated transport-sector led multi-sectoral approach to reducing poverty. Other sectors involved in this approach include: agriculture, counternarcotics, water, regional cooperation, social protection and gender equity. Poverty is widespread in Afghanistan, with almost half of all Afghans falling below the poverty line, and a third consuming less than the minimum number of calories per day, according to recent research. Poverty incidence is higher in rural compared to urban areas and higher in the West Central, Southwest, Northeast, and the South. The best way to tackle the poverty problem is to ensure that integrated transport-sector-led development plans are implemented in the countryside, where the power of the local government units are strengthened and the local governments take a very active role in the programs' implementation.

The Government has already embraced a market-oriented approach to managing the economy in all sectors outside of defence and police functions. So the strategy develops a way to transition from the current government-dominated management and operations of the sector to where the government sets policy, makes regulations, manages transport-related contracts, and supervises the work of private-sector firms implementing projects building or improving the transport sector's

infrastructure. Indeed, some ministries, such as MRRD, are well on the way to achieving this goal. During this transition, all possible efforts will be made to avoid any increase in unemployment due to the transition.

Within the framework of promoting development and reducing poverty, the Strategy shows how projects are to be prioritized and their sources of funding. The transport sector generates a great deal of revenue through a number of taxes and fees; the Strategy shows how key activities, such as road maintenance and airport improvements, are to become self-financing and thus sustainable. The structure of the government institutions that manage the sector will match this approach as far as is practicable. The Strategy shows how this transformation is to be made, and in what timeframe.

The Strategy prioritizes the projects, subject to funding constraints, and in line with international best practices to the extent possible and according to Afghan national goals (see Annex II), especially poverty reduction. International agreements that facilitate trade through the use of the sector are addressed so that Afghanistan's licit trade is enhanced. Finally, the Strategy is a "living" document, to be changed as conditions in the sector, country, and the international setting change.

## IMPORTANCE OF THE TRANSPORT SECTOR FOR OVERALL AFGHANISTAN DEVELOPMENT AND POVERTY REDUCTION

Afghanistan's mountainous terrain, its landlocked status and prime location in the heart of Central Asia present challenges to and opportunities

for the efficient movement of goods and people. The development of an effective and integrated transportation system is essential to poverty reduction and the development of the country. Economic growth will not occur and poverty levels will remain virtually unchanged unless this critical sector is addressed. Transport can either be a strong spearhead for development and poverty reduction or a total impediment. The challenge is taken up in this Strategy so that transport becomes a spearhead for development and poverty reduction. Moreover, the sector is critical to ensuring the legitimacy of the government.

Poverty reduction, sustainable economic growth as well as social development depend on improving roads and facilitating transport services. Investments made in the road sector can lead to employment creation, income generation, regional development, and increased security. A well built and maintained road network will serve to strengthen regional ties and help establish Afghanistan as the regional trade hub. However, a road network is only a facilitating mechanism; transport sector improvements must be coordinated with improved security, agricultural development, improved water management, counternarcotics programs, and devolution of authority to local government units in order to be a spearhead for development and poverty reduction.

Poverty in Afghanistan is deep and widespread. Nearly 40 percent of the rural population and almost as much of the urban population do not consume enough food. Between 40 and 50 percent of rural Afghans are unable to cover the costs of basic needs. Many of the poor are caught in a "poverty trap," where lack of access to facilities contributes to poor health, further reducing their earnings potential.

A very high proportion of Afghans are very near the poverty line, so that a flood or even a bad crop year would push many more people into poverty. Access to markets reduces poverty, and this is notable for areas around the ring road (regional highway system) because larger markets that come from closer regional integration will reduce poverty. Yet most rural poor are not near an all-

weather road, so the multi-sectoral integrated approach to roads-led development in the Strategy is a necessary component for poverty reduction.

### **Transportation and Macroeconomic and Fiscal Policies**

Transportation is the lifeblood for any economy, and is especially critical in a landlocked, mountainous country such as Afghanistan. Despite all impediments, the transport sector, especially the roads sector, has provided services so that agriculture, industry, and services could grow, which has led to strong real GNP growth that is forecast to remain healthy in the near term.

The GOA is collecting a large amount of revenues from road users due to road sector because the roads still provide the best links to promote socio-economic development.. Streamlining these fees so that they are used to pay for the sector's maintenance and improvement is a major challenge faced and addressed in this Strategy. Financing must move to an independent roads fund for the roads sector and an independent civil air fund to finance the civil air infrastructure, where the funds from road and airport user fees go directly to these funds.

The road fund and the civil aviation fund will be viable as institutional reforms are implemented to reduce corruption through a separate Transportation Civil Service, and as capacity is improved through the use of a single Transportation Training Institute. These reforms will make the transport sector self-sustainable and an engine for growth, thus promoting regional integration, improvement in the country's trade balance, and overall macroeconomic health.

**Integration of Provincial Development Plans (PDPs):** This Sector Strategy incorporates feedback and comments from the Sub National Consultations (SNCs) and as such is a response to the people of Afghanistan's vocalized needs and development goals, both nationally and with provincial emphasis.

The Sub National Consultations ensured public participation in the country's development process. Provincial representatives were invited to give their perceptions of the state of development in the eight ANDS pillars in their province, and were presented with representative Ministry Strategies for each Sector to contribute constructive local input on their content and process. With representatives from all levels of Afghan society, including 47% participation by women, the Sub National Consultations and the resulting Provincial Development Plans have contributed public support to the development of the Strategies, including this Transport Sector Strategy. For details of provincial priority projects refer to annex IV.

## Achievements

- An estimated 12,200 kilometres of roads have been rehabilitated, improved, or built including segments of the ring road system, national highways, provincial roads, and rural roads.
- The highest priority links of the ring road system, the national road network, the provincial road network, and the rural road network have been upgraded.
- Kabul International Airport has been extensively rehabilitated and new facilities have been added.
- Another four major airports (at Herat, Mazar-i-Sharif, Jalabad, and Kandahar) as well as seven other regional airports are undergoing extensive rehabilitation and expansion.
- The donors have contributed over US\$ 3.3 billion to rebuilding Afghanistan's transport system from 2002 to 2007.
- In July 2007, Afghanistan reached trade and transit agreements with Uzbekistan and Turkmenistan. A transit agreement is currently being drafted between Afghanistan and Tajikistan. These agreements will help reduce transit time for truckers moving goods transnationally.
- Afghanistan has started the rollout of the automated customs and data systems (ASYCUDA). This will improve transit times,

trade, anti-narcotics and anti-smuggling activities, data-exchange, and tracking customs collections.

## Challenges and Constraints

- Transport sector ministries and institutions lack the human capacity and organization to carry out: budgeting; procurement and contract administration; and adequate management of transport-related assets. The institutions lack the necessary regulatory and enforcement frameworks and personnel management systems.
- Complex organizational structures lead to waste, excess fees, and gaps in service to the people.
- There are overlapping responsibilities in the sector.
- The Afghan Compact-set goals cannot be reached within the Compact's timeframe because of weak capacity, inefficient institutional organization, and lack of financial resources.
- Deteriorating security in the South and East has diverted more resources to these regions and thus away from improving roads elsewhere in the country, which violates the spirit of the Constitution's goal of balanced development.
- The transport sector needs an integrated strategy on a regional level where roads, airports and rail infrastructure are improved while, at the same time, related programs improve security, develop agriculture (extension services, alternative crops), develop water resources (irrigation and drinking water), provide accessible health and education facilities, and reduce the production and trade in narcotics.
- Excess Road user fees must be sharply reduced.

There is a lack of coordination and communication within the transport sector governance institutions, as well as between these institutions and the institutions that govern the agriculture, rural development, water, education, and other sectors.



# CHAPTER 1

## CONTEXT

### ANALYSIS OF THE CURRENT STATE OF THE TRANSPORT SECTOR

Poverty reduction, sustainable economic growth as well as political and social development critically depends on the reconstruction and rehabilitation of roads, as well as the facilitation of transport services -- the inexpensive movement of freight and passengers. Investments made in the road sector can lead to employment creation, income generation, regional development, poverty reduction, and increased security. A well built and maintained road network will serve to strengthen regional ties and help establish Afghanistan as the regional trade hub between the Central Asian Republics and Pakistan, Iran, the PRC, and India. Road construction can lead to increased investment in the economy, due to savings in travel time and costs. Maintaining and improving roads by private construction firms will lift the private sector in the country. The rehabilitation of roads will also lead to an increase in: agricultural production, government revenue, and trade. Women's welfare will be promoted through increased availability and access to social services including health and education facilities. But a road network is a facilitating mechanism; for transport sector improvements to be a spearhead for development and poverty reduction, they must be coordinated with improved security, agricultural development, improved water management, counter narcotics programs, and devolution of authority to local government units. Poverty in Afghanistan is deep and widespread. Nearly 40 percent of the rural population does not consume enough food to avoid malnourishment.

The percentage is nearly as high for people in urban areas. Between 40 and 50 percent of rural Afghans are unable to cover the costs of basic needs, yet people in urban areas, which are consistent with poverty profiles in South Asia, spend more on non-food basics. So using the cost of basic needs, about 25 to 30 percent of people in urban areas are unable to meet these needs. Many Afghan poor are caught in a "poverty trap," where lack of access to facilities contributes to poor health, which in turn reduces the potential for these people to earn enough income to escape poverty. Examining recent survey data show that a high proportion of Afghans are very near the poverty line, so that a shock, such as a flood, crop failure, or even a bad crop year will push many poor people into poverty. The data also suggest that there are "pockets" of poverty or rural areas with high concentrations of the poor. The data with some research shows that accessibility to roads is closely related to lower incidences of poverty. This is especially notable for areas around the ring road (regional highway system), and indicates that improving the integration of people into the transport system and markets lowers the number of poor people. It also suggests that larger markets that come from closer regional integration with the Central Asian Republics, the PRC, Pakistan, India, and Iran will reduce poverty as well as spur development.

Health, education, crop diversification, and engaging in trade and service sectors all are associated with lower incidences of poverty. Thus, educated farmers who engage in non-farm income-earning activities are able to stay out of

poverty, and imply that this diversification also lowers their vulnerability. But for this type of market-oriented activity to take place, people must have access to all weather roads. Still, recent data show that almost 60 percent of the rural poor are within two kms of an all weather road.<sup>1</sup> This suggests that an integrated approach to roads-led development is important, where farmers receive: agricultural extension services, better access to irrigation and clean drinking water, and general education buttressed by a counternarcotics program that represents a credible threat if opium is grown. This approach allows rural people to learn how to benefit from being near an all-season road, and help them escape poverty.

Research on the new data collected in 2007 also shows that poverty is higher, controlling for differences in topography and other factors, in the West Central, Southwest, Northeast regions and in the South. But the research could not control for the presence of roads or access to markets. So, the higher poverty in these regions is likely linked to a lack of access to all-weather roads, and thus markets and other social services. These results are important as policymakers and stakeholders prioritize where roads need to be improved.

Studies have shown that increased access to roads leads to poverty reduction. A recent survey conducted by the Asia Foundation showed that roads are a high priority for both Afghanistan's urban and the rural population. Infrastructure is among the top priorities of the people, being surpassed only by security and unemployment. The GOA has declared that reconstruction and rehabilitation of the road system is one of the country's top priorities. The privately owned vehicle fleet will increase with road improvements; therefore institutions need to be reformed to deal with road maintenance, axle-overloading controls, driver licensing and vehicle inspections, road safety, vehicle emissions, traffic-law enforcement, lower road user fees, and with traffic management.

The GOA and key stakeholders generally adopted the recommended 10-year Road Master Plan guidelines to establish priorities in the road sector (ADB funded for MPW). The first goal for all stakeholders is the completion of the Regional Highway system (RH). The above discussion showed that proximity to the RH system lowers poverty. There is sufficient funding to accomplish this and the estimated completion date is December 2008. Future goals include ensuring stability in the country by linking provincial and district centers. The GOA has set a high priority on the construction of two North-South Corridors and one East-West corridor that are not part of the RH. For the Masterplan's prioritization of National Highway and Provincial Highway rehabilitation and improvement see Figures 1 and 2.

The high costs required to bring the major road networks in the country up to acceptable standards given expected traffic shows how badly the network has deteriorated over the past 20 to 30 years. The Master Plan estimated that US\$1.4 billion was needed to improve the National road network and US\$1.3 billion was needed to improve the Provincial road network. These estimates are likely to be conservative given the growth of the domestic vehicle fleet and traffic volumes seen in the past few years, as well as increased costs in providing security to those working on the roads. Moreover, the costs of improving and maintaining rural roads are not included in the above cost estimates.

The GOA also recognizes the importance of a fiscally sustainable system for the roads, and when the institutions are strong enough to manage it, is interested in establishing a Road Fund for operations, maintenance, and rehabilitation that is independent of the Ministry of Finance. Funds for maintenance would come from road user charges and be directly deposited into the Road Fund for the maintenance. The Government is also committed to restructuring the Ministry of Public Works (MPW), the Ministry of Rural

<sup>1</sup> Unpublished late-2007 World Bank Report.

Rehabilitation and Development (MRRD), and the Ministry of Transport and Civil Aviation (MOTCA) so that they function as closely as possible to international “best practices,” where the Ministries act as regulators and supervisors over their respective areas of responsibility, relying on the private sector to carry out works and development activities to the largest extent possible. The Government’s revised target is to have a fiscally sustainable system for road maintenance and rehabilitation in place by March 2008.

### CURRENT ROAD SECTOR SITUATION

Afghanistan has an estimated total road network of 134,000+ km including rural roads. More than 85% of this road network is in bad condition, and a major portion is not passable by motor vehicles. The Regional, National and Provincial road networks identified for development include about 46,338 km. This excludes the rural roads that must also be built and maintained, and which are now the responsibility of MRRD, discussed below.

**Table1:** Draft Road Network Classification

Road Classification	Length (km)
Regional Highway	3,242
National Highway	4,884
Provincial Roads*	34,462
Urban/City Roads*	3750
Subtotal	46,338
Rural Roads (estimate)*	87,830
<b>Total</b>	<b>134,168</b>

(Source: *Road Master Plan - June 2006, updated with MRRD and MOTCA estimates*)

\* Indicates most recent MRRD and MOTCA estimates.

Key features of present conditions of the main road network are:

- Between 1991 and 2001, virtually no road work, maintenance or rehabilitation was carried out.
- Many roads are impassable at specific locations, such as rivers and failed sections.
- Most bridges and culverts are in bad condition. Many are in danger of collapse.
- A very large number of creeks and rivers have to be forded on many roads.
- Many roads are impassable in winter.
- Many roads are unsafe by international standards.

### OPERATIONS, MAINTENANCE AND DEVELOPMENT

When the main road network is developed as proposed, it is estimated by stakeholders and GOA that the total road network will require approximately \$80 million annually in maintenance costs. If operations and maintenance are not addressed, the already implemented and future projects will be destroyed in 5-10 years. Some of the roads rehabilitated in the early years after the fall of the Taliban are now in urgent need of maintenance, or they will require compete rehabilitation. The GOA is planning to build important new roads to better integrate the nation and connect more people to markets and other social centers; however no new regional, national or provincial roads will be built until the GOA is able to adequately maintain the existing main road network.

### AXLE LOAD CONTROLS AND OTHER ISSUES

Setting penalties and enforcing them for overloaded trucks are essential if Afghanistan’s roads are to be protected. This requires strong new fines and enforcement mechanisms to be designed and passed into law as soon as possible. Truck overloading are the main reason for wear and tear on the roads, and the need for early, expensive maintenance. Weigh Stations are needed so that trucks that are overloaded are caught and fined. Regulations and enforcement mechanisms are

also needed to stop trucks from spilling fuel oil and other petroleum products onto the roads since such spills also cause great damage to the roads. Another main issue is that the GOA must establish laws, fines and enforcement mechanisms to keep people from encroaching on the right-of-way or roads. Thus, people and businesses must be kept from building even temporary structures of the roads or their shoulders or drainage systems. Within the roads sector and the transport sector in general the GOA also places a high priority on capacity building, quality assurance, coordination, and more consultation with stakeholders.

## Civil Aviation

Developing a strong civil aviation infrastructure will help alleviate rural poverty when combined with a number of programs across the roads, agriculture and other sectors' programs. Poor Afghan farmers have the potential to grow perishable, high-value crops that can then be sent by air freight to regional and international markets. Agricultural extension agents need to teach farmers how to grow these crops, and good roads are needed to transport these crops to cold storage facilities near the airports to await shipment. Further, these cold storage facilities must be built, and refrigerator trucks will be needed to move these crops from the farms to the airports. Reliable rural electric power facilities will be needed to operate these facilities. This represents a good opportunity to use private investment to develop the agricultural marketing chains for these crops, and the farmers who switch to these crops will be able to escape poverty and vulnerability. Clearly, this vision faces many serious constraints, and the constraints to the civil aviation sector are outlined below.

Continued development of the civil aviation sector is significantly affected by the dominance of ISAF and the US Air Force both in the use of aviation infrastructure and assets, and the control of airspace. MOTCA staff charged with civil aviation lack critical skills and need capacity

building. Currently, the US Air Force controls Afghan airspace and this poses a special problem to building private sector capacity in the air freight business. Currently, no civil air flights are allowed during night hours without a special exception from the US Air Force.

Most of the rehabilitation of the aviation infrastructure, especially outside of the Kabul area, has been a result of NATO efforts and investment. Foreign military users of Afghanistan's airfields have invested millions of dollars in infrastructure repairs and are currently providing critical technical support to promote development of civil aviation-related projects around the nation. Nonetheless, coordination between the civil aviation authorities and the military requires significant improvement in order to further develop the civil aviation sector.

In order to meet ANDS goals, there is an estimated US\$ 290 million shortfall in funds. Another issue that needs to be dealt with is the military encroachment on airfields and services. If military use of certain airfields, in particular the airfields at Mazar-i-Sharif, Kandahar, and Jalalabad, is considered a high priority, then either the ANDS targets need to be adjusted or the military need to build their own airfields so that civil aviation can develop unimpeded.

The civil aviation sector is one which can generate significant revenues for the GOA. Currently, it generates about US\$ 30 million per year from commercial over-flight fees and airport taxes. Yet the GOA gave only US\$ 6 million last year back to MOTCA for their related activities, which is just sufficient to cover salaries. Moreover, the civil aviation department's capacity to spend on development projects has vastly improved. Last year, the department was unable to spend its allocated funds. This year, it has spent all US\$ 36 million that the donors placed in its development budget.

Although there are some 40 airports and airfields on record, very few are actually usable

for commercial purposes. Of those that are, all are in need of improvements both in terms of infrastructure and qualified personnel. None of the present services meet the international standards and practices required by the International Civil Aviation Organization (ICAO), of which Afghanistan is a contracting nation.

The perimeters of existing civil airports are not well secured. As a result, the airports become an easy conduit to ship out narcotics. These perimeters and the security checks within the terminals are a critical element of a successful counternarcotics policy. Airport improvement programs must include strengthening both of these elements as part of the nation's effort to combat the production of opium and export of narcotics.

The institutional framework of and capacity of staff in the civil aviation sector is at an unacceptably low level. Certain critical functions (e.g. air traffic control, firefighting) are currently performed by NATO and other military personnel. The air transport safety and security functions as well as their regulatory oversight are sorely inadequate and this raises the risk profile of air service in Afghanistan. As a result, this discourages most international air carriers from servicing Afghanistan. Yet there has been much progress. There are now regularly scheduled flights from Dubai to Kandahar. Moreover, the number of private airlines operating in Afghanistan is expected to more than double in the near future. The MoTCA announced recently that three more private airlines will soon go into business, raising the number of such companies to five. Recently, 15 companies have submitted applications to MOTCA for licenses. Of them, Afghan Air, Safi Air and Access Air - all Afghan companies - were issued licenses, and are expected to start operations in the near future.

## SECURITY SITUATION

Over recent months the security situation has deteriorated in several parts of the country, mainly in the southern provinces as well as in the

southeast. This has implications for the physical improvements to the transport sector, donor agency activities, and governance. Implementing partners have revised their strategies and organizational structures to reduce risks to their personnel in less secure areas. The security constraints seriously affect the pace, cost and quality of development activities, including those in the transport sector. Work stoppages, additional security requirements in volatile areas, and the ability to provide technical oversight and guidance to contractors all have an impact on the delivery capacity and cost of development programmes. To improve the transport sector, closer collaboration between all actors in the sector is required because of this situation. The Afghan Military, ISAF, and the US Military must be brought into the planning and execution of transport projects more closely than before. A deteriorating security situation means unavoidable delays in separating military from civilian management of air facilities. In addition, the deteriorating security situation decreases the likelihood of private investment—either from domestic or foreign sources—and will delay development of the private sector infrastructure contracting industry. Moreover, as security deteriorates the interests by private investors in discovering and developing new mineral mines also deteriorates, making railway line investments less cost-effective, and less attractive to public-private-partnership arrangements to cover their capital costs. Yet, an improved transport sector can also be a tool to improve the security situation by improving connectivity that enables the social fabric to be knit more closely together, and allow for more coordinated counterinsurgency and counternarcotics activities by the military and the GOA.

## PROMOTE REGIONAL COOPERATION AND TRADE

As an arid, landlocked country, Afghanistan cannot develop without access to regional and international markets. The stabilization and reconstruction of Afghanistan, the gradual opening of its borders, and better security in

certain parts of the country, have opened new opportunities for the country to become once again a land bridge connecting the surrounding regions. At the same time, it has provided an extraordinary opportunity for the region and the world at large. Afghanistan's strategic, central location makes it the essential fulcrum for those nations seeking closer cooperation and expanding trade throughout the region.

Afghanistan is a member of: South Asian Association for Regional Cooperation (SAARC), the Central Asian Regional Economic Cooperation (CAREC), the South Asian Free Trade Association (SAFTA), and the Shanghai Cooperation Organization (SCO), and a signatory to the Economic Cooperation Organization Trade Agreement (ECOTA). Afghanistan is thus in a good position to use its membership in these organizations to promote its integration into the Middle East, South and Central Asia, and the larger community of nations. At the same time, belonging to so many regional trade organizations means that it is very difficult to estimate the costs and benefits in terms of trade that the multiple-memberships give to the country. This requires substantial data collection and careful analysis by trade and transport specialists.

In July 2007 Afghanistan reached trade and transit agreements with Uzbekistan and Turkmenistan. A transit agreement is currently being drafted between Afghanistan and Tajikistan. These agreements will help reduce transit and transportation time for truckers moving goods transnationally. Yet, the negative impact of external tensions on regional cooperation initiatives creates obstacles for Afghanistan. For example, until recently tension in relations between Pakistan and India had blocked the land

transit between Afghanistan and India.

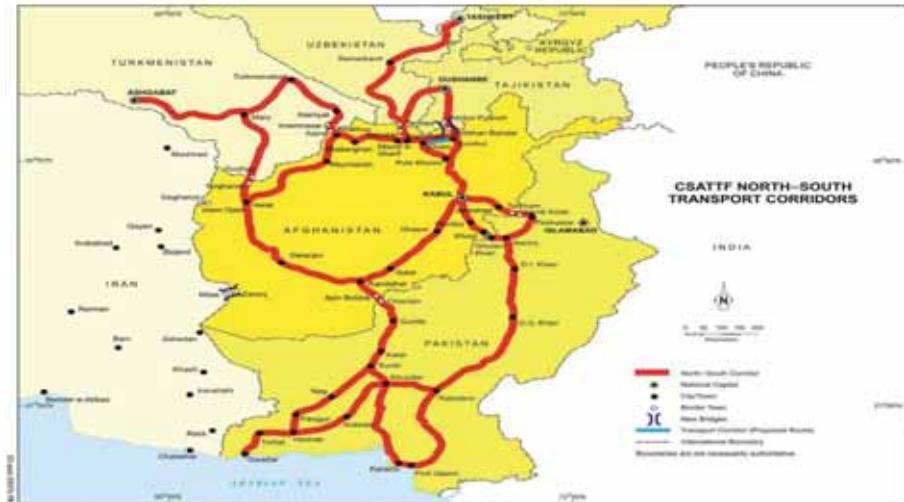
After lengthy bilateral and trilateral dialogues, Afghan goods can now reach India through the land transit corridor in Pakistan. Land transit for trucks from India reaching Afghanistan is currently being discussed between Pakistan and India in the realm of the Composite Dialogue. But this means Indian trucks cannot now reach Afghanistan through Pakistan.

Afghanistan has successfully started the rollout of the automated customs and data systems (ASYCUDA). This will provide substantial efficiency gains on transit, trade, anti-narcotics, anti-smuggling, data-exchange,

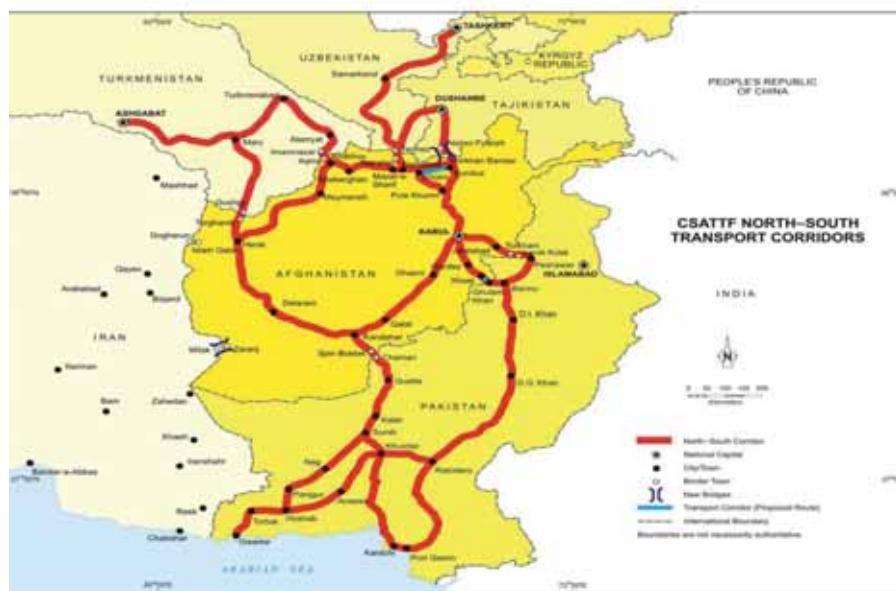
and a host of other factors, including tracing the flow of customs collections. Currently the ASYCUDA transit module is operational along three axes: Torkham-Jalalabad-Kabul, Islamqala-Herat-Kabul, and Hairatan-Mazar-Kabul. But for the system to facilitate customs collections and the faster movement of trucks across borders, the Afghan local governments and the Provincial Governors must be more closely involved and buy into the system, and corruption among Afghan customs officers reduced.

While an improved transport sector will lead to improved regional integration and cooperation, more coordination is needed among the ministries involved in these activities. Afghanistan has agreed to create an Afghan Center for Regional Cooperation (ACRC) in Kabul. This center could provide the coordination needed if it receives adequate staff, resources, capacity building, and authority over the ministries to facilitate regional integration. The maps below show the potential for regional cooperation through the road network.

Map 2: Central-South Asia road corridors – North-South Corridor



Map 3: Afghanistan: Status pf transport corridors with neighbouring countries



## EACH MINISTRY DISCUSSED

### Ministry of Economy and Presidential Advisors

The MOE is responsible for national economic planning. As such it takes an interest in and a role in planning the nation's transport program. In addition, at least one Presidential Advisor and his office are attempting to coordinate all donor-supported institutional strengthening, reform and capacity-building projects. The MOE needs to improve its integration into the planning process of the line Ministries. The MOE is also well-positioned to help facilitate regional integration through the nation's roads and airports. But this will require additional capacity building and coordination among ministries involved in transportation and regional integration.

Under the Ministry of Economy, the donor-supported Afghan Reconstruction & Development Service (ARDS) is responsible for donor-funded government procurement of goods and services including contracting for road maintenance services under most circumstances. Selected line ministries that do not have adequate procurement and contracting capacity, such as MPW and MOTCA, do all their contracting with the technical support of ARDS. ARDS provides technical support to the ministries in procurement actions, while the line ministries make the policy decisions as to which contractor is the best qualified for the money to do the job in question. ARDS provides technical support to the line ministries so that they can better evaluate projects. Since the enactment of the procurement law in 2005, procurements with values over \$200,000 must go through ARDS, which provides the technical support to prepare the bid documents, requests for proposals (RFPs), and, with the line ministries, advertises, provides advice on the selection of contractors, and assists the line ministries in awarding contracts. However, due to procurement weaknesses with line ministries, sometimes bids are slow to be selected. Ministries using non-donor and donor funds and that have adequate procurement capacity do not need to use ARDS's services. Of

the transport-related Ministries, only MRRD is not required to use ARDS as of mid-2007.

### Ministry of Public Works

The Ministry of Public Works (MPW) was previously responsible for virtually all government construction and maintenance. All aspects from planning, design, construction and maintenance were carried out in-house through a number of MPW-owned construction companies. Before 1992, a single department within MPW, Road Construction & Development, had over 5,000 employees.

Over the years, the size and scope of MPW have been reduced, in part through attrition. Even though the Ministry lacks resources and capacity, it has to work in accordance with the following critical GOA mandates:

The MPW will be concerned with policy making, planning and monitoring the provincial, national and regional highway network;

Will produce a plan to build up capacity in Afghanistan to carry out all types of road maintenance, with the use of private-sector contractors to be phased over the next five years;

Will build up its capacity to manage maintenance contracts;

The MPW acknowledges gratefully and gives full approval to donors who will maintain the roads the donors have rehabilitated for the past five years;

The MPW will develop a transportation system that supports the social and economic goals of Afghanistan; and

The MPW will maintain the long-term integrity of the transportation infrastructure. This will be done using Ministry employees to do construction works for road improvements (i.e., use of force account) until the Ministry determines that the private sector can manage the road works

under contract to provide the same standards of construction as the MPW requires now.

MPW administers a number of highway transportation activities, including standards development, research and technology, training, technical assistance, highway access to nationally owned lands and commercial vehicle

safety enforcement. The MPW has a significant role in the development of programs and policies and in allocating resources to facilitate strategic development and maintenance of the Afghan Road Network as an effective and efficient element of the national transportation system.

To modernize, the MPW has created a new department - the Afghan Highway Administration or AHA. Among the primary goals for the AHA in its first year was the successful creation of four offices that will eventually supplant the other offices within the MPW, but in the initial phase will develop staff capacity in modern government and business practices. The four new offices are: Road Development, Road Operations and Maintenance, Policy and Coordination, and Finance and Administration.

In addition, the AHA will work with the ANDS Consultative Group in the Transport Sector to coordinate discussions and actions within the Technical Assistance Teams (TAT) on: Handover Procedures, Operations and Maintenance, Cost Recovery, IRH Standards, MPW Capacity Building and Reform, and Private Sector Capacity Building.

Assisting in the development and guidance of the new AHA offices, led by a Chief Executive Officer (CEO), will be a number of qualified advisors in the fields of: Policy Development, Project Life Cycle Management, Legal issues, procurement strategies, and strategies for tolls and other road user fees.

MPW believes the best approach to building capacity within the AHA is through the

development and execution of pilot projects for new road development and operations and maintenance, two crucial areas in which the MPW lacks capacity. Now, the EC is funding a pilot "operations and maintenance" project and USAID is funding a third O&M pilot project. MPW is also funding its own O&M pilot project. Out of these, MPW and other transport governance institutions will either combine methods or select one method to apply to roads and other transport sector assets. Operations and maintenance are discussed later in this Strategy.

MPW has accepted about 80% of the prioritization of roads to be rehabilitated or improved that were presented in the ADB-MPW Roads Masterplan. However, MPW and others in the GOA and other Afghan stakeholders place a high priority on a national road crossing the nation from east to west (Kabul to Herat), and two north-south national roads.

#### **Ministry of Rural Rehabilitation and Development**

Administrative jurisdiction over rural road maintenance and construction is under the Ministry of Rural Rehabilitation and Development. MRRD is responsible for rural roads providing access to markets and other social services, and in some cases village to provincial center roads, but the lines of authority between MRRD and MPW are clarified through an agreement (village to village or village to district center roads) is the responsibility of MRRD. MRRD implements infrastructure projects through the NSP and NRAP-World Bank-funded program and the NRAP-multi-donor funded program. Funds for these projects are distributed through popularly elected Community Development Councils (CDCs), which are also responsible for contracting the construction and maintenance of rural roads. At present almost all rural road improvements are financed by donors. MRRD is widely recognized as the most efficient of the transport sector governance institutions. The ministry is receiving assistance from the donor community

with planning, design and project management to continue improving its performance.

Included in the ADB-MPW Master Plan is a proposed classification of roads into Regional Highways (major national ring roads and principal connections with neighbouring countries); National Highways (connecting regional highways to provincial capitals) and Provincial Roads (connecting provincial capitals to district centres, and between important district headquarters); and Rural Roads (district centre to village, and village to village, village to hamlet, and smaller rural roads and paths).

However these terms and definitions are not fully consistent with those adopted in the MoU signed between the MRRD and MPW prior to the Masterplan. The MoU set out the respective Ministries' work responsibilities in the rural roads sector. The MoU uses the term rural roads to refer to what are sometimes defined as Provincial Roads under the ADB-MPW Masterplan's proposed classification and neither document clarifies the technical definitions of these classifications. Further, the MoU requires a degree of coordination between MPW and MRRD that may or may not take place; if coordination does not take place, some transport infrastructure may not be maintained or improved.<sup>1</sup> This would put transport services for many people at risk should the coordination not take place.

At the same time, MRRD is building its capacity to use international best practices to make decisions about investment prioritization in the rural roads sub-sector. Consequently, the MRRD is also preparing an Interim Rural Roads Investment Plan (IRRIP) in an attempt to define the extent and condition of the rural roads network, since

<sup>1</sup> The MOU states that "It was agreed that district to village and village to village as well as village to district of roads, the rural roads network remain under the mandate of MRRD. In situations where the roads link a district to another district and the MPW does not include specific roads in their plans, the MPW will officially request MRRD to carry out the implementation of such district to district roads. All rural road networks that link districts to provincial capitals and districts to other districts will remain the mandate of MPW."

it is believed to be much larger than the nominal 87,830 km identified in the MPRNIP. Indeed, some new work by MRRD estimates that the rural road network consists of 120,000 km. So both the MPW and the MRRD are preparing road Masterplans, and there is limited coordination between the two Ministries on their respective plans.

MRRD is using the private sector and communities for the majority of the road construction and maintenance work. The current system for approving private contractors is cumbersome and would be more efficient if the provincial governments under the new Independent Directorate for Local Governance were given authority to construct and maintain rural roads by 2009. The current approval process can take anywhere from three to six months. There is no funding mechanism (local taxes, redistribution of national revenue) that is controlled by the local governments that is used for road works.

### Ministry of Transport and Civil Aviation

The Ministry of Transportation and Civil Aviation is a key governance agent in the transport sector. The mission of the MOTCA is the creation of a reliable and secure civil aviation infrastructure and smoothly running ground transportation within Kabul and nationwide. The MOTCA vision is to: a) create human and institutional capacity for regulatory and oversight functions in the area of civil air traffic; b) preserve and protect current infrastructure; and c) restructure and commercialize the state-owned-enterprises – the Kamaz Trucking and the Millie Bus Enterprises, for example. MOTCA's current organizational structure consists of 12 departments for ground transport and nine departments for civil aviation. Due to the merger of two ministries in 2006, 80% of the departments are supposed to be strengthened, eliminated or merged to avoid duplication.

On the aviation side, best practices suggest a phased transition to a Directorate of Civil Aviation and a civil aviation regulatory authority, which would ensure safety and security in accordance

with international standards, promoting efficient, cost-effective and orderly growth of air transport. Because the MOF does not turn over the appropriate air-service fees collected by the air sector to airport service maintenance, the GOA may be in violation of agreements with IATA and ICAO.

On the ground transport side, the MOTCA's Department of Private Sector inspects and issues commercial transit permits and collects fees from all domestic and international commercial vehicles for each trip they make.

### **Ministry of Interior**

The Ministry of Interior is responsible for commercial and private-use vehicle and driver licensing and safety inspections. Currently, the MOI is structured so that its departments carry out functions shared with other Ministries, as well as departmental duplication within the Ministry itself. MOI is naturally focused on putting down the insurgency and ensuring peace and stability. However, this primary mission is being carried out to the detriment of provincial and municipal transport systems, road safety, vehicle inspections, and driver licensing. None of these functions are mentioned in its new Strategy.

The MOI is responsible for the supervision of the governance of the Provinces and Municipalities, except for Kabul Municipality, at the present. While the Municipalities are responsible for urban transport planning and service delivery, they must coordinate with the Provincial Governors, the MOI and the MoUD. This creates overlapping responsibilities and has made it more difficult to efficiently conduct urban transport planning and service delivery. The same problem exists for smaller urban areas, because they are responsible to the Provincial Governors, the MOI and the MoUD. Very recently, a new Independent Directorate for Local Governance, reporting to the President, has been established to relieve MOI of supervising the civil affairs in the Municipalities and the Provinces. It is too early to tell if this will

simplify urban transport planning and service delivery.

### **Ministry of Commerce and Industries**

The Ministry of Commerce and Industries is responsible for issuing and renewing domestic and foreign business licenses including all commercial licenses for companies, individuals, transit and forwarding passes, and cooperatives. The primary mission of the MOCI's Transit and Trade Department is: 1) promoting transit corridors development to reduce trade delays and transaction costs; 2) simplifying and harmonizing procedures and documents; 3) strengthening and modernizing transit agreements; 4) preparing and implementing policies and programs to facilitate trade and transit movement including setting up Border Transit Facilitation Bureaus (BTFB) to oversee cross-border traffic and benchmarking performance. Some of these responsibilities overlap with or are redundant to what Ministry of Transport and Civil Aviation and the Ministry of Foreign Affairs are doing. MOCI charges a fee of 130 Afs per truck for loading and unloading even if the truck is empty as it crosses the border. Truckers also have to purchase from an Afghanistan Consulate Commercial Attaché a 'book note' for transit fee from MOCI. The amount of payment depends on their destination in Afghanistan.

### **Ministry of Foreign Affairs**

The Ministry of Foreign Affairs' consulates in neighbouring countries also issues 'road passes' for foreign registered commercial vehicles. The cost of this pass is about US\$100 per trip into Afghanistan that is valid for six months. Combined with other road user fees, this fee reduces the volume of international transit traffic.

### **Ministry of Finance**

The Ministry of Finance (MOF) plays a critical role in the transport sector. MOF has taken over the responsibility of collecting road tolls on the major highways using its own staff. Furthermore,

all fees collected from road and civil aviation users are legally to be remitted to the MOF and deposited into the general budget. For road tolls, MOF sells stickers at a discount rate to private contractors who in turn sell them to the drivers. This is the first step towards privatizing toll collection. However, how much of this is actually remitted to the MOF is in question. Meetings with local governments throughout the country have confirmed that fees for transit permits, tolls and border control sometimes make their way to the MOF, but often are redistributed locally instead.

### **Customs and Revenues**

MOF is responsible for the collection of customs revenues of the state as well as for enforcing customs regulations. The Customs Administration with the approval of MOF is the only actor legally capable of establishing, altering or abolishing customs areas. The customs areas are theoretically located at all border crossings, international airports, and duty-free zones and customs warehouses. However, not all international border crossings have operating Customs Stations. Further, most if not all of the operating stations are under the influence of the local governors or warlords. Collections returned to MOF do not always reflect traffic flows, as funds are reportedly diverted to local officials. Some governors have stopped Customs collections on their own authority. Interviews with commercial vehicle operators and private sector actors have shown that bribes are often accepted by Customs Department officials.

### **Ministry of Urban Development and the Municipalities**

The Ministry of Urban Development and the Municipalities have an important role in road construction and transportation service delivery. They together are responsible for the construction and maintenance of all city roads. Except for the roads in Kabul Municipality which are partially financed by MOF, the other municipalities are

responsible for raising their own revenue through taxes for their urban roads. Since virtually no urban areas have bypasses, overloaded trucks pass through urban areas, destroying these roads in short order. The standards for urban roads must be harmonized with national roads, and axle load limits enforced as soon as possible. Urban-area bypasses must also be considered to reduce congestion and improve road safety.

As background, urban areas are in a serious state of disrepair. Afghanistan's urbanisation rate – at about 4.7% per year, reflecting rapid migration to urban centres – is among the fastest in Asia. And urban areas have received most of the refugee population, which may be the largest in the world. An additional two million refugees likely will return and settle in these urban centres. Of the population of about 32 million, the urban population is about 7.5 million, or about 30% of the total. It is expected double by 2015 at twice the average national growth rate. More than 70 percent of the urban population is concentrated in six cities.

Infrastructure and service deficits are huge. More than 90% of urban residents do not have access to piped water, many using shallow open wells, many others using hand pumps. A large percentage of urban roads have been destroyed or lack paved surfaces. Deficiencies extend to water, sanitation, electricity, education and health facilities as well as public transport.

Urban Management is weak. Sector responsibilities are split among a variety of institutional actors who have rival institutional claims over urban planning, management, legislation, and operations. MOI controls municipal administration and traffic management, the Central Authority for Water Supply and Sanitation manages urban water supply, MOTCA runs urban public passenger transportation in Kabul, while many municipalities run their own public transport systems. There is no agreed nationwide urban policy, and functional responsibilities and roles

remain unclear. While municipalities – a relatively independent level of government – can collect revenues, formulate budgets and hire staff, they face many administrative and institutional challenges. For example, revenue generation capacity is poor, planning and budgeting is not linked to needs, expenditure controls are weak, the organisational structures do not relate to strategy, and their staffs' capacities need strengthening and their skills need updating.

Municipal revenue generation capacity is weak: the last property valuation in Kabul was in 1978 and the highest property tax is currently equivalent to US\$4 per year. Improved municipal revenue generation through updated land titling, property valuation and collection of the property tax will be critical for funding an operation and maintenance (O&M) budget compatible with the increased stock of urban infrastructure.

Yet, the urban transport sector is important because the urban sector accounts for about 50 percent of the gross national product. Afghanistan's cities devote about 15% of their annual expenditures to their transport systems. Successful urban transport systems and transit infrastructure will increase economic efficiency and access to amenities, and make urban growth possible without undue adverse effects on the environment.

MOI is responsible for overseeing municipalities, although this is in transition. One of its branches issues regulations for local governments. Governors and mayors, except that of Kabul who has a Minister status, fall under this branch; higher-level municipal staffs are appointed by MOI. MOI controls traffic management. MOI also deals with registration of births and deaths, regulatory issues and statistical matters. Municipalities report to MOI, yet they are somewhat autonomous, and MOI provides little managerial support, advice or capacity development. Other ministries – responsible for the delivery of services, specifically health and education – also do not provide support to municipalities. The new Independent Directorate of Local Governance (IDLG) will

be assuming the responsibilities of the MOI in relation to the Municipalities, except for Kabul Municipality.

### Ground Transport Services (MOTCA)

Before 1978, both freight and long-distance bus services were left to the private sector. The public sector had a role only in urban bus services in Kabul. In 1978, enabling legislation authorised governmental provision, nation-wide, of freight and passenger services.

**Millie Bus:** The Public Bus system called Millie Bus currently provides low cost transportation services with 900 buses in 32 provinces. In Kabul alone, the 601 Millie Buses provide transportation services to four million citizens (statistics from 2006). The Millie Bus is the choice of poor citizens as the most affordable means of transportation; it is publicly owned and funded by the government. The Millie Bus has been functioning as a transport entity for the past 40 years in Afghanistan and its capacity has been enhanced following the donation of vehicles by various countries.

**Kamaz Freight:** The Kamaz freight agencies operate with Russian built trucks. These agencies provide the government with a transport capability. All of these agencies are self sustaining. Maintenance is performed at a workshop at Hairatan in Balkh Province near the Uzbekistan border. This facility also provides maintenance services for NGOs. The workshop is in the process of being privatized.

**Private Sector Regulation:** The Private Sector Department in the Ministry is responsible for the regulation of private trucks, buses and taxis within or entering Afghanistan and the enforcement of allowable tariffs. This requires staff in all major provincial capitals, as well as in selected cities in Pakistan, Iran and Tajikistan. In principle the Private Sector Department also sets technical standards for private commercial vehicles and inspects them for compliance for vehicle standards and safety.

The taxes in the Table 2 below severely affect

**Table 2: Official Road User Fees**

Ministries	Services	Fees
Ministry of Transport and Civil Aviation	Transit Permit and Penalties for failing to obtain such permit Notebook for Commercial vehicles	4.2 Afs/km for asphalt roads 3.6 Afs/km for gravel roads
Ministry of Foreign Affairs	Road Pass	Approx. 200Afs depending on route All foreign registered vehicles (1000-1300Afs per trip)
Ministry of Commerce	Transshipment Note Book Loading & Unloading Fee	130 Afs/T/km under loading and unloading services
Ministry of Interior	Vehicle Registration (Passenger) Driver Licensing	Small vehicles: 1600-2000Afs Large vehicles: 50,000Afs (1,500Afs per ton) 700-1000Afs
Ministry of Finance	Customs Road Tolls	1,600 Afs per each T1 Form 1 <sup>st</sup> category vehicle: monthly 200Afs 2 <sup>nd</sup> category vehicle: monthly 600Afs 3 <sup>rd</sup> category vehicle: monthly 3000Afs
Ministry of Public Works	Fees from Axle Load Limit Violations except at borders	Fees unknown, and not collected

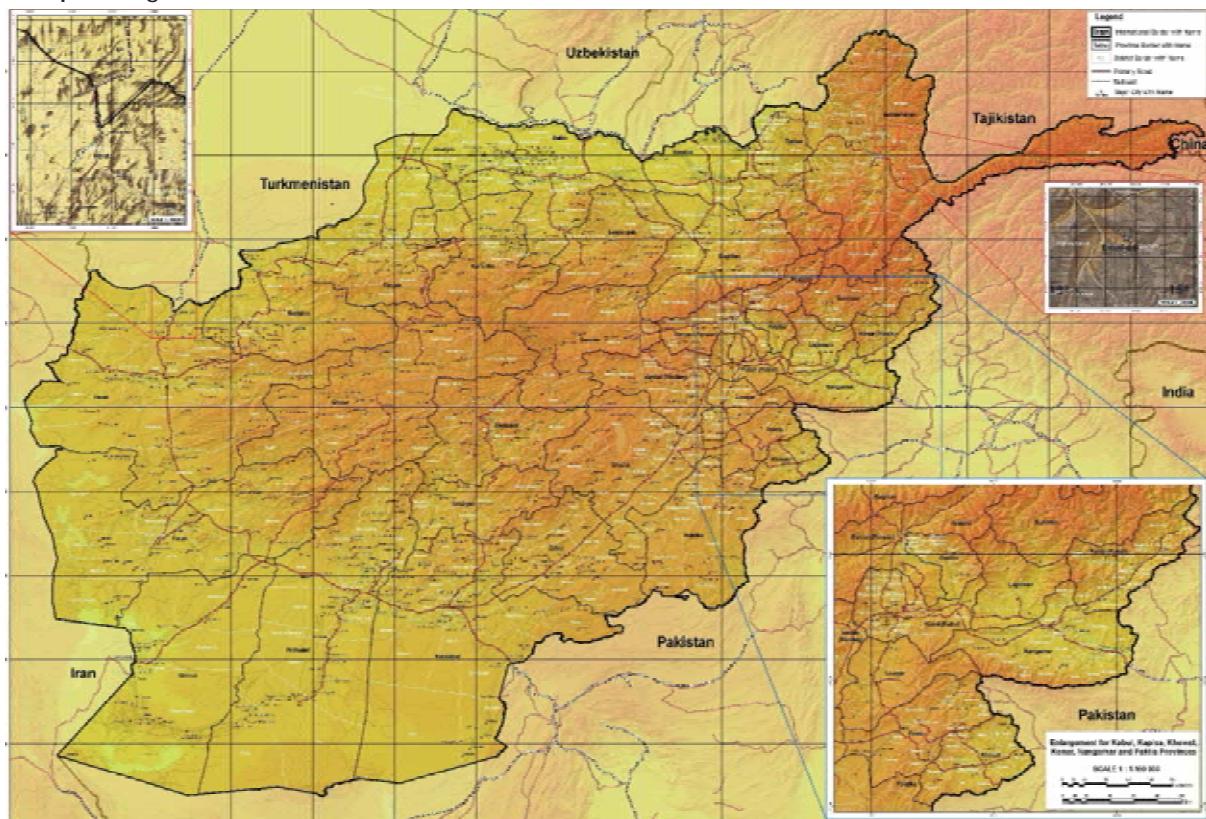
the goods transported resulting in an increase in their prices. Additionally, illegal taxes are taken by force and in the form of extortion from vehicles along the roads.

### Rail Transport

Railway links in Afghanistan are important as bulk commodities (such as fuel) are brought to Afghanistan's borders by rail, then transhipped to truck for movement within the country. Transport costs of bulk commodities over long distances are typically cheaper by rail than road; therefore, extension of the proposed rail lines into Afghanistan would result in significant savings of transport costs for this type of commodity. Due to large deposits of copper and other minerals, it is possible that new rail lines could be built provided private investors are willing to form Public-Private-Partnerships with the GOA to help cover the capital and operating costs of any new rail lines. New rail lines, where feasible, could be built with GOA funds using labour-intensive techniques, providing jobs for poor unskilled Afghan labourers.

The Ministry of Mines needs to coordinate with the transportation ministries to locate and prove the existence of commercially viable mineral deposits to attract private investments in developing these resources. Now, the railhead transfer stations should be improved so that the cost of changing freight from trains to trucks is lowered, thus lowering the cost of Afghanistan's international trade. Another method to promote interregional and international trade would be to ask Afghanistan's neighbours to extend their rail lines by about 10 km or so into the country, and then to build the multimodal loading and unloading facilities so as to lower the costs of moving freight between trucks and rail cars. The PRC Government have made overtures to the GOA regarding new rail lines to exploit the deposits of copper, coal, and iron ore. The GOA will conduct its own feasibility studies of possible new rail lines, and together with estimates of the value of mining Afghanistan's resources on an annual basis, will be able to negotiate a better set of commercial packages. Several other rail lines will also be considered by the GOA, after completing independent feasibility studies. The Map below shows existing rail lines and the rail lines in neighbouring countries.

**Map 4: Afghanistan Rail Roads**

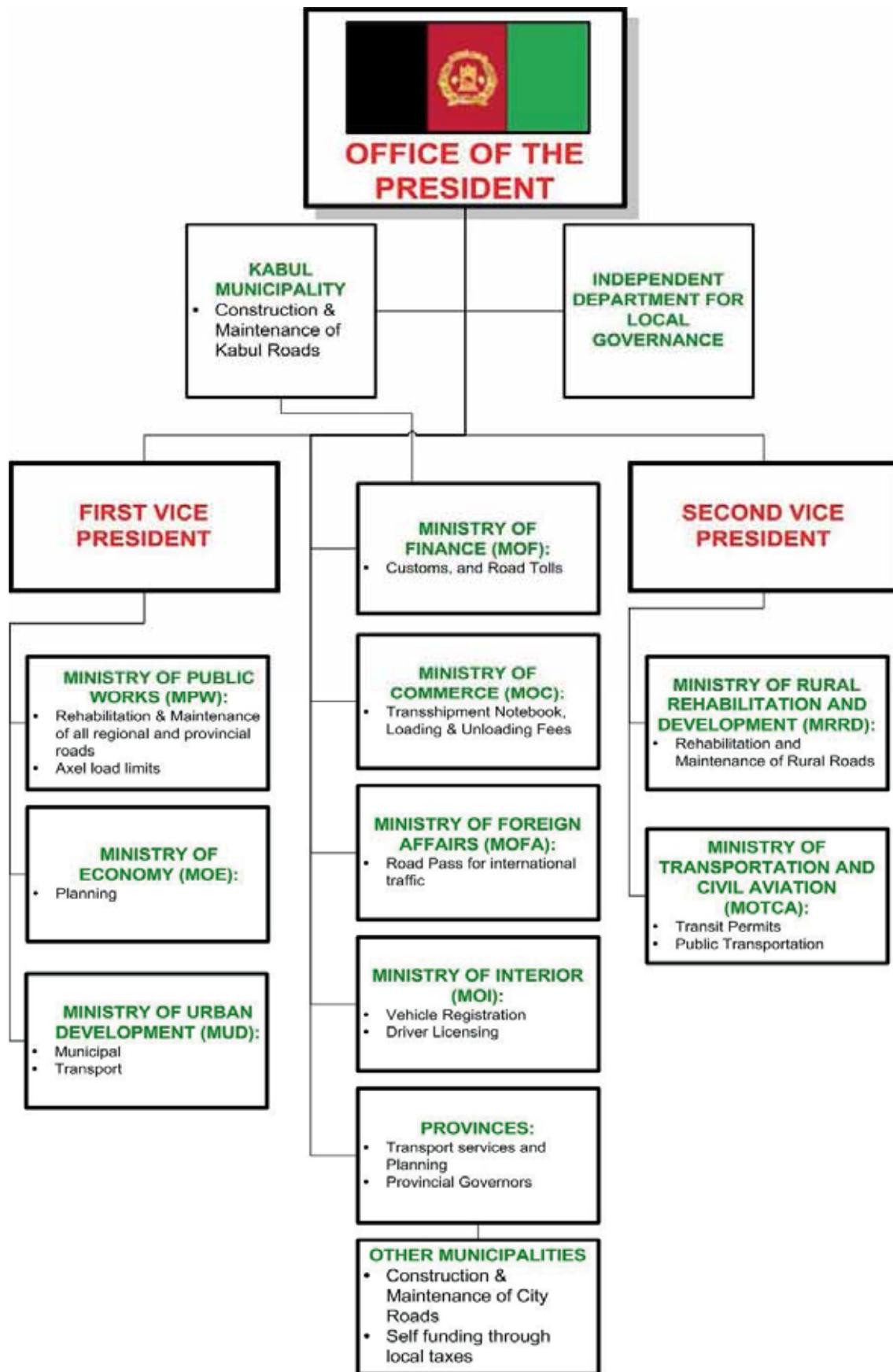


#### Transport Sector: Organization

As a conclusion to this section on the transport sector's current institutional structure, the below

organizational chart is presented. Figure 1 below shows some of the problems in coordinating activities in the transport sector.

Figure 1: The Institutional Structure of Transport Governance in Afghanistan, 2007



## **WEAKNESSES AND SHORTCOMINGS AFFECTING THE TRANSPORT SECTOR**

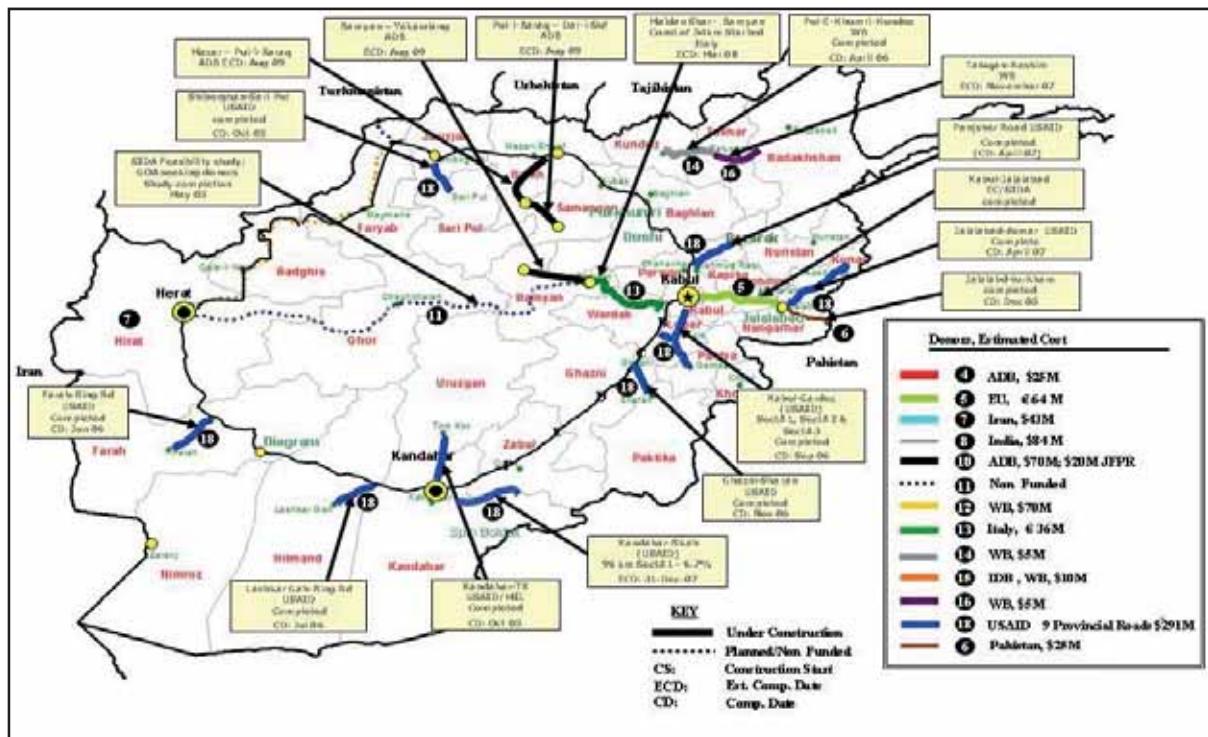
- Lack of capacity throughout all levels
- Poor transportation infrastructure
- Lack of coordination and communication
- Lack of transparency
- Inability/unwillingness to reorganize effectively
- Existence of complicated and bureaucratic procedures
- Overlapping responsibilities in various government departments
- Complexity of procurement process for development projects
- Lack of capability in project implementation in spite of budget availability
- Lack of laws and regulations on eminent domain and fair market value
- Ineffective administrative system/ lack of effective procedures
- Conflict of interest based on roles of some ministries both as regulators and operators
- Lack of adequate pay to compensate executive and mid level managers
- Lack of English language proficiency
- Lack of standards
- Weak HR management in all levels Weak budget process, procurement, asset management,

- financial management
- Lack of involvement by donors of ministries in road construction projects
- GOA's policies and rules regarding the private sector are not clear
- Lack of coordination with other sectors such as agriculture, rural development, water, education, security, and counternarcotics blocks transport sector-led regional development initiatives.

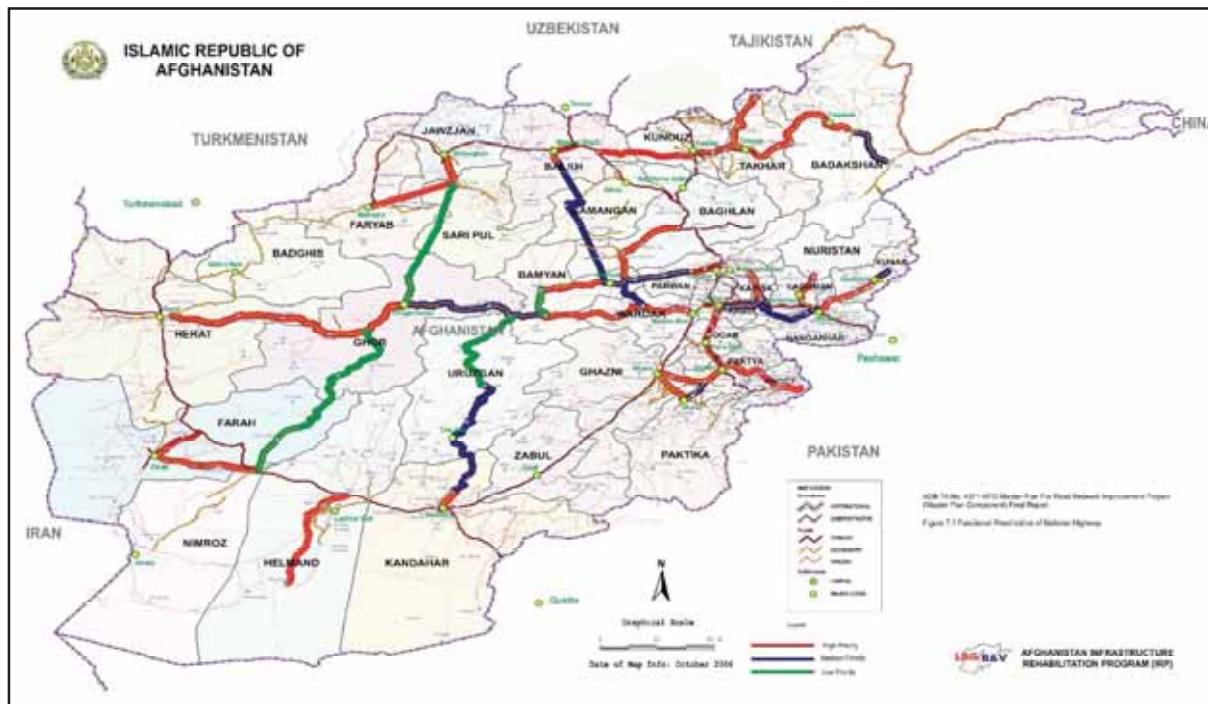
## **DONOR SUPPORT FOR REBUILDING AFGHANISTAN'S ROAD NETWORK**

Multiple donors are implementing road works projects to upgrade the nation's roads. Most of the ring road network included to date in the Afghan Compact is undergoing rehabilitation and being upgraded. Please see the map on the donors' activities in rehabilitating the regional road network (i.e., the ring road). These roads were chosen in close collaboration with the GOA and using the ADB-funded Master Plan (see Figures 1 and 2). Map 1 below indicates the current status of the National Road network broken down by donor involvement. Still, almost all donors manage the competitive selection of roads-works contractors without involving the GOA and the winning firms are virtually all international firms, using Afghan subcontractors.

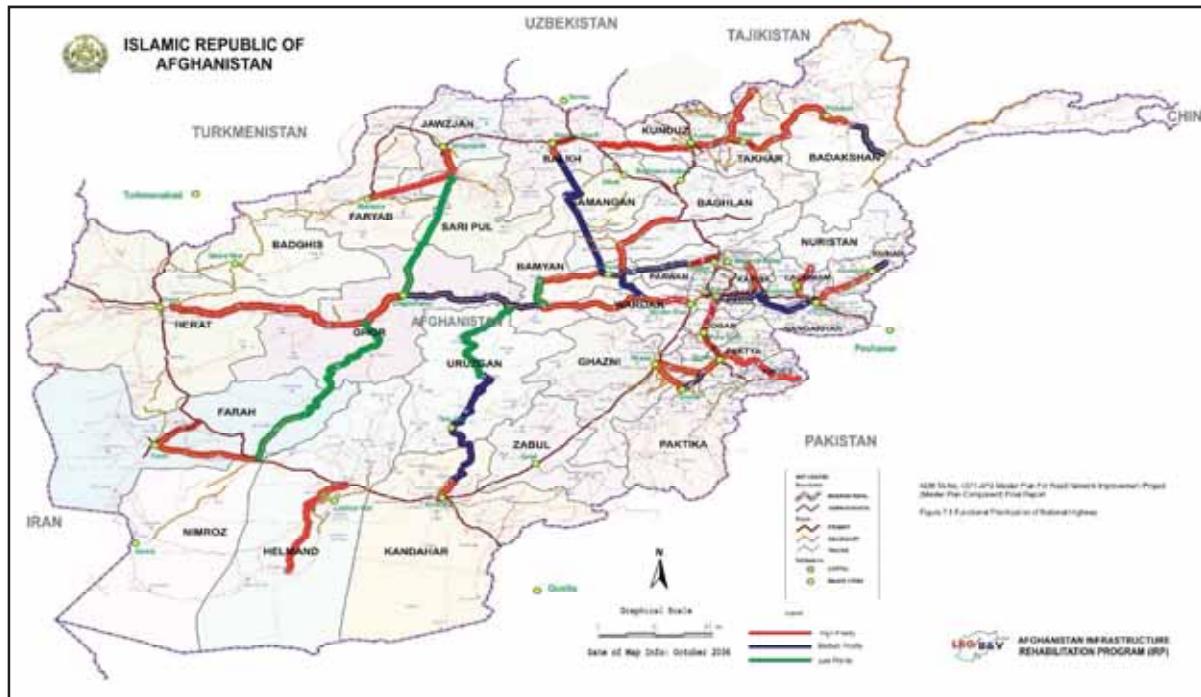
**Map 5:** National Roads: Donor Reconstruction



**Figure 6:** Masterplan: Prioritizing National Highways



**Figure 7:** Master Plan: Prioritizing Provincial Highways



**Source:** Roads Master Plan

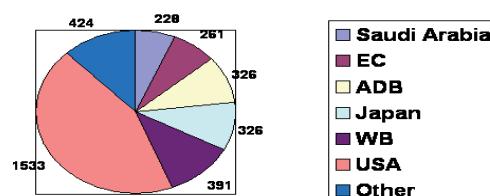
There are six major donors and other donors involved in the road sub-sector in Afghanistan. They are: U.S. – USAID/Military; Asian Development Bank; European Union; World Bank; Japan/JICA; ISAF and the PRTs; and other donors (including the Saudi Development Fund, SIDA, Italy, Iran, Pakistan, India, Kuwait, and Islamic Development Fund).

In order to coordinate road works and institutional programs, virtually all donors are working with MPW as members in the Transport Sector Consultative Group (CG), which is divided into six Technical Assistance Teams (TAT) where substantive coordination and problem solving is undertaken. A USAID-funded Advisor serves as the CG Secretariat. But this is not coordinated with other transport-related ministries, such as MRRD, MoUD, MOTCA, or the provinces or municipalities.

In addition to substantial donor involvement, the GOA is investing millions of dollars from its own account through the Ministry of Finance in the road sector. These investments include rehabilitation of roads, construction of roads as well as operation and maintenance projects, almost exclusively using force account. The Ministry of Finance is responsible for the disbursement of funds. The figure below gives the shares of expenditures by donors to improve the roads in Afghanistan.

**Figure 2:** Total Road Infrastructure Investment  
= \$3,260

**Total Road Infrastructure Investment = \$3,260**



## REGULATORY AND GOVERNANCE ENVIRONMENT

As shown in Table 3, there are some decrees and laws governing the transport sector. Existing laws and regulations do not provide clearly delineated mandates and responsibilities to GOA line ministries in the transport sector. Consequently, there are overlapping jurisdictions and functions. In addition, transport-sector laws are incomplete. For example, there is no law and set of regulations that allow the GOA to take land from private landowners that is needed for transport infrastructure improvements or expansion that gives a method to compute the "fair market value" of the land required. As a result, private landowners often demand large sums for land needed to widen roads or expand airports. Sometimes these demands have been so large as to stop the planned project. There is also a law on Traffic Regulation, which defines the restrictions on drivers of vehicles to keep the smooth flow of traffic and regulates the weight of vehicles, but does not set the penalties for axle overloading.

**Table 3:** Transport Sector Legal Framework\*

Legislation/Decree	Description
Bonn Agreement, 5th December 2001 (1380)	States that all existing laws shall prevail until changed.
Decree No. 134, Gazette 803 of 1381(2002)	Decree on Domestic and Foreign Investment: allows foreign investments in all sectors of the economy
Decree No. 484 of 1360 (1983) amended in 1990, 91, & 94)	Road Traffic Law: controls and regulates road traffic, route permit, licensing of vehicles and drivers, vehicle insurance, accidents, assignment of duties of the traffic department and penalty provisions
Decree No. 711 , 13 Hoot 1368 (1990)	Transit Duties and Loading Regulations: controls and duties on goods in transit from other countries
Decree No. 798 of 1380 (2001)	Construction Works Law: regulates the manner in which all construction works shall be carried out by the Ministry of Public Works
Decree No. 794 of 1380 (2001)	Law of Municipalities: establishes the powers and duties of municipalities including how they regulate traffic and vehicle safety on municipal roads
Procurement Law (Date NA)	Provides provisions and procedures for outsourcing government services to the private sector and centralizes government procurement under ARDS

\* There were several other laws regarding transportation and transit (Air and Land) that are using by related ministries and agencies.

## Road Transport Legislative Issues

- Law establishing method to compute "fair market value" of private land required by the GOA to improve the transport sector infrastructure
- Mortgage law: needed so that private contractors can get credit to do larger jobs
- Environmental regulations
- Modern road classification system
- Jurisdictional definitions so that Ministries do not have overlapping responsibilities
- Mortgage Law-to establish credit markets for private contractors
- Institutional reform
- Legislation to strengthen the rights of private sector firms and private investors

The fragmentation of responsibilities between MOTCA, MPW, MRRD, MoUD, the Municipalities, and the new Independent

Directorate for Local Governance and MOI in this sector is creating great difficulty in developing

an effective regulatory environment. There is currently no road transport specific legislation under preparation.

## **Civil Aviation—Description and Legislative Needs**

The current Aviation Law was established in 1956. The most current civil aviation regulations were promulgated in 1972. As part of the 2003 Government of Afghanistan Decree, the existing documents serve as the regulatory basis for the Afghan civil aviation sector. Although dated, it does provide enough of a foundation so that the civil aviation sector in Afghanistan is able to function. Further reforms in the sector are awaiting passage of a law submitted to the

Ministry of Justice in 2006, as well as further cooperation and coordination with the USAF and the ISAF in the use and development of civil aviation as well as the transfer of control of airspace and airports to the civil aviation authority.

## **Road Transport**

There is a wide variety of road transport legislation and responsibilities in this area are split between MOF, MOFA, MOCI, MOE, MOTCA, MPW, MRRD, MOF, MoUD and MOI. The Transport Sector Review strongly recommended reform of the legal basis for road transportation regulation.

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## CHAPTER 2

# POLICY FRAMEWORK OVERALL STRATEGY FOR THE TRANSPORT SECTOR

### STRATEGIC VISION AND GOALS

#### 1. Strategic Vision:

A safe, integrated transportation network that ensures connectivity and that enables the low-cost and reliable movement of people and goods within Afghanistan as well as to and from foreign destinations. This will give impetus to economic growth and employment generation and help integrate Afghanistan into the global economy.

#### GOALS:

##### **Afghanistan Constitution:**

Chapter 1, Article 6, states that “The State is obliged to create a prosperous and progressive society based on...balanced development in all areas of the country.” This requires a broad-based and well-planned development of the transport sector.

The specific goals for the sector set by this Strategy over the next five years, in line with the Afghan Compact are:

Fully upgraded and maintained ring road and roads to neighbouring countries by March 2009;

A fiscally sustainable system for road maintenance by March 2008;

Kabul International Airport and Herat Airport to be in compliance with the International Civil Aviation Organization’s (ICAO) and the International Air Transport Association’s (IATA’s) requirements by March 2011 (this includes runway and other improvements at Herat, Mazar-i-Sharif, Jalalabad, and Kandahar);

A more general goal of the Compact directly applies to the transport sector to promote regional integration:

By end-2010: Afghanistan and its neighbours will achieve lower transit times through Afghanistan by means of cooperative border management and other multilateral or bilateral trade and transit agreements; ... and Afghanistan, its neighbours and countries in the region will reach agreements to enable Afghanistan to import skilled labour, and to enable Afghans to seek work in the region and send remittances home.

Other specific goals set by this Strategy consistent with ANDS and the Afghanistan Compact are:

Ensure that rural road improvements and improvement in connectivity of remote villages to the national transport system receive high priority to accelerate poverty reduction to attempt to reach Afghanistan’s first MDG.

As background, the first MDG set targets for reducing poverty. The specific targets under this goal are:

- The proportion of people whose income is less than US \$1 a day decreases by 3% per annum until the year 2020, and
- The proportion of people who suffer from hunger decreases by 5% per annum until the year 2020.

At present, the outlook for reaching these goals is low. An integrated strategy of improved security, transport sector development, agriculture (extension services, alternative crops), water (irrigation and drinking water), health, counternarcotics programs, and education is needed if Afghanistan is to come near to reaching this goal. This Strategy recommends such integrated programs.

#### **The remaining goals are:**

Forty percent of all villages to be connected by all-weather roads to the national road system by the end of 2010 (this target is in the Afghan Compact and critical for poverty reduction);

Fifty-Six percent of all villages to be connected by all-weather roads to the national road system by the end of 2013;

Seventy percent of all roads in municipalities (i.e., cities) are rehabilitated or improved by the end of 2010;

Facilitate the international flow of licit freight and services on the nation's transport system by lowering road user fees by 75% to promote trade and growth, and by negotiations through SAARC and other international organizations by end-2009;

With the reduced road user fees, combine all fees into one fee, such as a fuel tax, and assign responsibility for its collection to a single entity by end-2009;

Promote Afghanistan's transport system as a conduit to increasing licit transit trade by 15% per year through SAARC and later accession to the WTO; this will require harmonization of standards and increasing trade and transit agreements with SAARC member nations;

Create, as soon as possible, an inter-ministerial costing committee to work with the Ministry of Finance to cost out annually programs that take five to fifteen years to implement; by end -2007; All transport projects will be prioritized based on a combination of their estimated internal rate of return, impact on counterinsurgency, followed by impact on poverty reduction, gender equity and other social factors by end-2008;

All transportation projects are beginning to be implemented using Afghanistan's environmental laws and regulations by end-2008;

Mainstream gender awareness and participation of MOWA in all transport governance institutions and the private sector, with specific targets and benchmarks as specified in the Activity Policy Matrix;

Public transport (urban and inter-provincial transport) provided for 34 provinces including Kabul by 2010;

Restructure public transportation institutions so that their operational functions, with a few well-defined exceptions, are contracted out to the private sector by the government and under the direction of the government by 2013;

Encourage Public-Private Partnerships to build and operate new road transport corridors that will help better integrate Afghanistan into the Middle East, and South and Central Asia;

Put in place systems to improve transparency in all functions of the government in the transport sector by 2010;

Substantially improve the capacity of transport sector government staff and private actors so that the sector is operating efficiently and is on the path towards international best practices by 2010;

- Give more autonomy to local communities and the Provincial Governments to determine how and when rural roads are improved, as well as provincial roads by end 2009;
- Improve coordination between transport sector governance institutions, the MOI and ISAF so that the transport sector can better develop in conflict-affected areas of the country as soon as possible;

Increase public sector salaries in tandem with increases in capacity by end 2008; In tandem with reductions in corruption increase cooperation between counternarcotics efforts and road design to allow for pull-off checkpoints for random counternarcotics checkpoints;

Reform laws so that the GOA has the right of eminent domain and a formulae to compute the "fair market value" of land purchased by the government for transport-sector improvements, along with implementing regulation, by 2010;

- Governance of the transport sector will shift from direct Ministerial control to a system where the Ministries set policy, carry out critical planning, implement regulations, oversee management of the sector's publicly owned assets (i.e., roads, airports, rail terminals, and etc.) and contract out as many activities as appropriate to the private sector; thus the Ministries will develop strong contracts management units by 2010, and will use private-sector independent construction supervisors under contract to oversee works implemented by other private-sector contractors..

Annual assessment of data collected and databases maintained and updated in all planning departments, including municipalities, mapping progress against the goal of "best practices" data collection and databases for transport sector

planning, with necessary funding mechanisms and capacity building programs in place and operational by 2009;

- Strengthening the planning capacity of ministry staff for road transport, airports, and rail functions so that the ministry staff can perform feasibility studies, Masterplanning, and multi-modal planning, as well as asset management planning, to international standards by 2010;
- Develop and put in place an axle-load limit violation fees and an enforcement system by end-2008;
- Ensure that axle-load limits are harmonized for regional highways with the limits set by bordering countries to promote international trade and regional integration by end-2008;

Establish laws, fines and enforcement mechanisms to keep people from encroaching on the right-of-way or roads by end-2008. Thus, people and businesses must be kept from building even temporary structures of the roads or their shoulders or drainage systems.

- Review MPW's and MRRD's road standards so that they are harmonized with other internationally accepted standards to promote regional integration by end-2008;
- Review MPW's and MRRD's road classification systems so that they are harmonized and meet international standards to promote regional integration by end-2008;

Mainstreaming the Counter-narcotics objectives in the developmental projects of the transport ministries. This will include consultations on the design of roads to allow for checkpoints, airport perimeter security, use of labour-intensive techniques, and integrated road-led development programs;

Improve the capacity and make the Civil Aviation Authority under MoTCA by 2009, and transition control of Afghan airspace to the Afghan Civil Aviation Authority as soon as practicable;

The civil aviation airports at Mazar-i-Sharif, Jalalabad, and Kandahar are upgraded with runway repairs, provided with modern communication systems, navigational aids, fire, and rescue equipment by end-2010;

Seven other domestic civil aviation airports are upgraded so that there is an increase in domestic air travel with improved services and costs that are competitive with international standards and rates by end-2010;

Civil Aviation infrastructure maintenance and improvements to be financed from revenue raised by the sub-sector through a dedicated and independent fund by 2009;

Build or strengthen intermodal loading and unloading stations at all railheads to lower the costs of loading and unloading freight being moved between international rail shipments and truck shipments within the country by end 2009;

Have in place a strong road and airport safety programs and implementing regulations by end 2009;

Substantially improve the MOI Traffic Management Bureau's capacity to conduct drivers' licensing tests, vehicle safety inspections and enforce traffic flow regulations.

Devolve the Traffic Management Bureau form the MOI to the Provinces and Municipalities through the new Independent Directorate of Local Governance by end-2009;

Establish the Transport Planning Commission to develop the Transport Sector Plan, Plan to be completed by end-2008;

- Lines of authority and responsibility for governance of the sector will be improved by creating and the work of the Transport Sector Inter Ministerial Working Group by 2009;<sup>1</sup>

<sup>1</sup> Most recently, the GOA has established an Independent Directorate for Local Governance. The Directorate reports directly to the

All urban transport planning should be based on forecasts of expected demand for transport services and well as the need for the supply of these services (i.e., Urban Masterplans). These are to include roads, pedestrian walkways, provisions for the handicapped users bicycle, pathways as well as the supply of publicly regulated low-cost bus services; and Expanding the rail lines and building a rail system should receive a high priority when private investors are willing to develop Afghanistan's mineral and hydrocarbon resources, and when the private sector is willing to finance their share of developing these systems through Public-Private-Partnerships or through Build-Operate-Transfer (BOT) contracts with the government.

#### OVERALL POLICY FRAMEWORK AND NEEDS ASSESSMENT:

Improving transport sector governance: In order to overcome the major constraints in the transport sector of overlapping responsibilities in different ministries and other institutional weaknesses, a new commission will be created to develop a plan for institutional reform. A new Transportation Working Group will then implement the plan, enabling the transport governance institutions to make the sector's vision a reality.

#### Needs Assessment & Transport Sector Inter-Ministerial Working Group

The first step requires a sector-wide Needs Assessment to reach the goals of this Strategy. This will be done through the new Transport Sector Inter-Ministerial Working Group (TSIMWG) that will prepare the Transport Sector Plan. In the Needs Assessment (NA), a detailed roadmap will be developed on: ministry coordination, institutional reform, donor coordination, and training capabilities that shows how each step is

*President. At the time of this draft, the Directorate is so new it is in transition and has no policies in place. However, all Provincial Governors and all Municipalities (except for Kabul Municipality) are to report to the new Directorate for civilian governance. This will leave the MOI free to concentrate more fully on security.*

to be made in transforming the sector as described in this Strategy. The new NA should take about three months to complete.

The TSIMWG will be established with a Chairman who will be selected on a six-month rotating basis by the Group and will be a Minister from the member Ministries (MPW, MOTCA, MRRD, MoUD, MoF, MOI, Kabul Municipality, the Independent Directorate of Local Governance, and the MoFA). The first chairman will be the Minister of MOTCA. The first step of the TSIMWG will be to prepare Terms of Reference for the Group and its members. This Group will be formed as soon as possible (prior to March 2008). The key responsibilities of the Group will be to:

Coordinate activities in the sector;

Monitor and implement the sector strategy; and Develop plans and policies for the sector.

The key issue for the TSIMWG to deal with is to determine the lines of authority between the transportation-related governance institutions and the roles and responsibilities of each institution. The Group or some person or institution determined by the Group will need to be given the authority to arbitrate and enforce these responsibilities over the member institutions. The Group should also determine how to include the Provincial Governors' administrations and the Municipalities' administrations in the decision-making process for the sector. The overarching goal of the Group is to see that the sector's vision is realized and that the Afghan people get the best possible transport system and services given available resources.

## PRIORITY POLICIES AND OBJECTIVES:

### 2. Priority Policies:

- Continue to implement and improve current programs and develop new programs to

reach the goal of a safe, efficient and effective Afghanistan Road Network (ARN) including Regional Highways, National Highways, Provincial Roads, as well as rural roads, as a crucial part of the transportation system for the Afghan people. The policy is to have a road transportation system where access within and beyond the community and to the region is available and as low-cost as possible; a transportation system where accidents, delays, and congestion are significantly reduced; a transportation system where freight moves easily and at the lowest possible costs across towns, districts, provinces and international borders; a system that promotes integrated regional development in the nation's rural areas; a system where roads minimally impact the environment, including air quality; a system where pedestrians, bicyclists and other forms of non-motorized transport are accommodated; a system that promotes gender equity, a system where competition between transport serviced providers is ensured; a system that facilitates the GOA's counternarcotics efforts; and a system where transportation services are restored immediately after disasters and emergencies. An overriding principle for this policy is to continue delivering services to the people, and not let the reform process disrupt current programs that are developing the sector.

Enable the principal airports of Afghanistan and the civil aviation oversight function to conform to the requirements of the International Civil Aviation Organization (ICAO) and IATA in order to attract world class airlines to serve Afghanistan; to create the necessary infrastructure and capable domestic and international air transport activity; and to promote a freely competitive aviation environment for international and domestic service.

Establish a new independent Civil Aviation Authority, to improve the quality and quantity of civil aviation available in the country,

and to meet a requirement for international standards. This activity is dependent on passage of the Civil Aviation Law prepared in 2005. Approval and implementation of new regulations prepared in 2005 and finalized in line with international standards in 2006 are also dependent on passage of the law.

- In order to stimulate trade and realise the economic development promise of the SAFTA, the cost of transportation and trade will be reduced. It is estimated that improvements in the South Asian region's transportation sector could raise intra-regional trade by \$2.6 billion per year. Therefore, improving transportation services, customs, and logistics management will require substantial new investment, additional technical assistance and coordinated multilateral efforts. The TSIMWG will assign the tasks to a smaller working group to identify and develop regional and sub-regional projects in relation to development of the SAARC regional multimodal transport system. The working group shall also take concrete measures in a time-bound manner for harmonisation of customs, insurance, standards of loading and unloading of trucks and electronic exchange of information to enable seamless movements of goods in SAARC countries.
- Along with increasing the benefits from SAARC, the TSIMWG will have a smaller working group work with the members and signatories of Economic Cooperation Trade Agreement (ECOTA), the Central Asian Region Economic Cooperation (CAREC), and the Shanghai Cooperation Organization to increase regional integration, and thus improve the flows of regional investments, increase the number of regional transportation infrastructure projects, and regional trade.
- Municipal transportation management will improve so that the following are all improved: municipal network road quality, road network maintenance, road network planning, and transportation facilities and services, transportation demand management

including on- and off-street parking system management, and overall urban transportation management.

- In municipalities, promote public-private-community partnerships. There are many forms of partnerships, but in general, in a public-private partnership, ownership of the assets remains with the municipality, while a private firm manages the day-to-day operations of municipal services. The strategic benefits of partnerships include: (i) improved services at lower costs; (ii) tapping required experience and knowledge of the private firm; (iii) accessing private capital for infrastructure; and (iv) enhanced staff training and career opportunities.
- In municipalities, public-community partnerships will be facilitated and strengthened through the creation and support of democratically elected Community Development Councils (CDC's) at the neighbourhood level, comprising clusters of households, and Area Development Councils (ADC's) at the suburban district level. These councils will participate in the preparation and implementation of higher level plans at the district and municipal levels.
- In rural areas to improve and extend the Participatory Planning Process within coordination committees, involving all stakeholders.
- In rural areas, undertake transport infrastructure development activities to address the needs of Kuchi people and other vulnerable groups, including women;
- In rural areas, use and integrated participatory regional development approach, using roads together with agriculture, water, education, health, counternarcotics initiatives to help the rural poor derive the most benefit from roads so as to escape poverty.
- In rural areas, improve, refine and follow-up on policies and strategies for promoting rural well-being regarding transportation, through the analysis of the results and outcomes

of project implementation and sector assessments.

- The overall development objective of National Rural Access Program is to enhance human security and promote equitable economic growth by ensuring year-round access to basic services and facilities in rural Afghanistan by promoting local productive capacity, through a private-sector led development of physical rural access infrastructure and employment creation for the rural poor. Specifically NRAP seeks to rehabilitate, reconstruct and maintain essential rural access infrastructure using appropriate labour-based approaches, thereby creating short-term employment opportunities for the rural poor nation-wide. These goals are incorporated into the overall Sector Strategy.

In addition to restoring the rural access infrastructure, NRAP also seeks to build local capacity and create short-term employment opportunities for the rural poor through the application of community-based contracting where appropriate. A similar rural road program must be developed that is sustainable after the funding for NRAP runs out in three years.

To connect all villages by all-weather roads to the national road system.

- All roads in municipalities (i.e., cities) are improved and maintained using private-sector contractors to the extent possible.
- All transportation projects are implemented using Afghanistan's environmental laws and regulations.
- Investigate the feasibility of training and employing female drivers, and conductors for public transport, and traffic police officers; if feasible, train and employ women for 20% of these positions by 2013.

Data collection improved so that maintenance and investment decisions are based on current and forecast conditions.

## STRATEGIC OBJECTIVES:

### Short Term

- Improve coordination between transport sector governance institutions as soon as possible;

Develop and put in place an axle-load limit violation fees and an enforcement system by end-2008;

Prioritize all transport projects based on their estimated internal rate of return and impact on counterinsurgency, poverty reduction, and gender equity by end-2008;

Improve the capacity and make the Civil Aviation Authority under MoTCA by 2009, and transition control of Afghan airspace to the Afghan Civil Aviation Authority;

Finance Civil Aviation infrastructure maintenance and improvements from national budget by 2009;

- Improve lines of authority and responsibility for governance of the sector by creating a Transport Sector Inter Ministerial Working Group by mid-2008;
- Facilitate the international flow of licit freight and services by lowering road user fees by 75% to promote trade and growth, and by negotiations through SAARC and other international organizations by end-2009;
- Give more autonomy to local communities and the Provincial Governments to determine how and when rural roads are improved, as well as provincial roads by end 2009;

### Medium Term

Provide public transport for 34 provinces including Kabul by 2010;

Connect forty percent of all villages by all-weather roads to the national road system by the end of 2010;

Improve seventy percent of all roads in municipalities by the end of 2010;

Reform laws so that the GOA has the right of eminent domain and a formulae to compute the "fair market value" of land purchased by the government for transport-sector improvements, along with implementing regulations, by 2010;

Strengthen the planning capacity of ministry staff for all transport modes so that they can do feasibility studies, Masterplanning, and multimodal planning, as well as asset management planning, to international standards by 2010;

### Long Term

Mainstream the Counter-narcotics objectives in the sector's projects, which includes consultations on the design of roads to allow for checkpoints, airport perimeter security, and

multi-sectoral road-led development programs;

Connect fifty-six percent of all villages by all-weather roads to the national road system by the end of 2013;

Promote Afghanistan's transport system as a conduit to increasing licit transit trade by 15% per year through SAARC and later accession to the WTO;

Mainstream gender awareness and participation of MOWA in all transport governance institutions and the private sector;

Restructure public transportation institutions so that their operational functions, with a few well-defined exceptions, are contracted out to the private sector by the government and under the direction of the government by 2013;

Expand the rail lines and build a rail system when feasible in order to develop exports of Afghanistan's mineral and hydrocarbon resources.

### DESIRED OUTCOMES AND EXPECTED RESULTS:

#### Outcomes:

#### Road Transport

- Improved connectivity throughout Afghanistan.
- Lower road user costs.
- Business environment for private sector development improved as well as job creation and poverty reduction.
- Less journey time lost due to congestion.
- Lower accidents/ fatality rate per PIA/MVK (personal injury accidents per million vehicle kilometers)

#### Civil Aviation

- Increased domestic and international passengers and freight traffic.
- All stakeholders are well informed about the viability of air transport systems.
- Improved governance of civil aviation sector.

#### Overall Transport Sector

- Improved air quality. For details refer to Annex I (Action Plan)

#### Expected Results

- Completion of 3,242 km of regional highway system by March 2009
- A fiscally sustainable road maintenance system by March 2008

Forty percent of all villages to be connected by all-weather roads to the national road system by the end of 2010 (ANDS Target, to be exceeded if practicable)

Seventy percent of all roads in municipalities (i.e., cities) are improved to a good standard by the end of 2010

Fifty-Six percent of all villages to be connected by all-weather roads to the national road system by the end of 2013

All transportation projects are beginning to be implemented using Afghanistan's environmental laws and regulations by end-2007

A transport system that promotes gender equity

An inter-ministerial costing committee to estimate annual costs of programs for the Ministry of Finance

Ministries to have trained Afghans to prepare feasibility studies and poverty analyses

Ministries to collect traffic data and similar statistics, including those needed for indicators of this plan and generally plan for the future of each transport mode on a project-by-project basis.

- All projects to be justified by feasibility studies, and competing projects ranked from those with the highest to lowest estimated internal rate of return (ROR). For rural roads, estimates of impact on social and poverty-reduction goals need to be given as well. Then those projects with the highest estimated RORs are funded first, except for those with big social, counterinsurgency, and poverty reduction impacts; they need to be given a higher priority. Goal to be reached by end 2009.

• A Transport Sector Inter Ministerial Working Group (TSIMWG) that assigns roles and responsibilities to each of the transport-related governance institutions to provide a well-focused direction to developing the sector and avoiding duplication of efforts or gaps in the provision of transport sector services to the people

Increase in private-sector employment opportunities in the transport sector, with special attention to filling at least 30% of those opportunities by women by 2010

Improved participation and leadership of women in the sector and enhanced access to social services that are facilitated by better roads and transportation facilities by 2010; specific programs to include:

- Briefing and planning workshops on NAPWA implementation

- Gender analysis of major policies/programs

- Sex disaggregation of administrative and program data

- Gender training of key officials

- Establishment/capacity building of gender working groups or similar mechanisms

- Support to the miniseries' day care/kindergarten facilities for pre-school children

- A well-qualified private sector industry for road construction and maintenance

- Fully upgrade and maintain the ring road as well as link roads connecting the ring road to neighbouring countries by the end of 2009, a total of 3,270 km

- Construction of the East - West Corridor (1,267 km) by the end of 2011, provided there is adequate maintenance on existing roads

- Construction of the North - South Corridor (775 km) by the end of 2011, provided there is adequate maintenance on existing roads

- Upgrade and maintain the remaining 3,000 km of National Highways and Provincial Roads by the end of 2009

- Set up a fiscally sustainable road maintenance system using the private sector for as much of the work as is practicable by March 2008 to effectively and efficiently maintain 7,000 km of roads

- Kabul International Airport and Herat Airport will achieve full ICAO and IATA compliance

- Mazar-i-Sharif, Jalalabad and Kandahar will be upgraded with runway repairs, air navigation, fire and rescue, and communications equipment.

- Seven other domestic airports will be upgraded to facilitate domestic air transportation
- Air transport services and costs will be increasingly competitive with international market standards and rates.
- Concessioning of airport services to private contractors to the extent possible to lower costs by end 2009
- Formulation of around 5,000 km of road development projects in the next five years
- Road development project contracts with around 50 private companies in the next five years
- Employment opportunities for around 400 technical engineers
- Employment opportunities for around 400 admin/finance staff
- Employment opportunities for around nineteen million man days per year
- Formulation of around 17,000 km of O&M projects in the next five years.
- O&M project contracts with around 400 private companies in the next five years
- Employment opportunities for around 8,000 technical engineers through O&M projects
- Employment opportunities for around 8,000 admin/finance staff positions through O&M projects
- Employment opportunities for around 5,000,000 person-days per year through O&M projects
- Effective monitoring and evaluation of around 350 O&M projects in the next five years through O&M projects

## INPUTS AND OUTPUTS

### Fiscal Implications

#### Budget Requests

- Regional Highways: Request: \$1,247.51 mil., Gap: \$266.23
- National and Provincial Roads Request: \$ 1,494.72 mil., Gap: \$550 mil.
- Rural roads: 14,000 Km to be improved, costs not presented, to be under NRAP
- Urban/Cities roads request: \$1100 mil, Gap:\$ 980 mil.
- Kabul Municipality Request: \$681 mil., Gap: \$588 mil.
- Civil Aviation: Request: \$374 mil., Gap: \$257 mil.
- Public Transport Request \$6 mil., Gap: \$0
- Operations and Maintenance Request: \$46.93 mil., Gap \$38 mil.\*
- Railroads (Feasibility Studies) Request: \$2 mil., Gap: \$2 mil.
- Other Request: \$221.48 mil., Gap \$61.57 mil.  
\*\*
- NOTE: Most of above estimates are not for the full five years, financial estimates are incomplete.
- The O&M is extremely incomplete
- \*\* Mostly feasibility studies and institutional strengthening projects (i.e., soft projects), also extremely incomplete.

**Totals: \*\*\* Requested: \$5,173.64 million, Gap: \$2,742.80 million**

**\*\*\* Excludes rural roads**

See Annex II for the listing of priority projects, cost estimates, identified funding sources, and projected funding gaps.

## INPUTS:

### ROAD MAP FOR INSTITUTIONAL REFORM

Create the Transport Sector Inter Ministerial Working Group who, among other activities, determines the lines of authority between the transportation-related governance institutions and the exact roles and responsibilities of each institution. The Ministers from the MPW, MOTCA, MRRD, MoUD, MoI, the Provincial Governors' administrations, the Municipalities' administrations, and the new Independent Directorate of Local Governance. The goal of the Group is to see that the sector's vision is realized and that the Afghan people get the best possible transport system and services given available resources.

Through the new Group, prepare a Transport

Sector Plan that transforms governance of the sector to "best practices" in Afghanistan's current context as soon as possible, without interrupting the flow of services by existing institutions and programs to improve the sector and services to the people.

Strengthen MPW's immediate capacity to plan road development operations and maintenance.

Establish a Transport Sector Civil Service. The Service will fill key slots in the new governance structure with individuals selected competitively, paid wages high enough to attract the best qualified people, and those in the Service will be on two-year, performance-based renewable contracts. Implement sharp penalties for corrupt practices. Short-term: Establish rules and regulations for the Service as well as positions to be filled by Service Employees.

Provide assistance to MPW, MOTCA, MoUD, the municipalities, and MRRD for general contract administration, budgeting and human resources. Human resources functions are to be coordinated with Transport Sector Civil Service.

Provide assistance to MOTCA, MoUD, the municipalities and the provinces for public transport regulation, privatization of state-owned transport service companies and establishing regulations for safe competition among private suppliers of freight and passenger transport services. Short-term: Provide assistance to MOTCA and other related institutions in these areas.

Provide technical assistance to the Department of Civil Aviation in MOTCA with the corporatization process. Short-term: Technical assistance, Medium-Term: Transition to the new institutional structure as an independent Civil Aviation Authority.

Provide TA to GOA to streamline road user fees into a single fee, perhaps a new fuel tax to replace tolls<sup>2</sup> and other fees listed above, reduce international transit permits and most other fees. Short-term: TA, Medium-term: Put in place the new system of road user fees including the fuel tax and axle load violation fees, Long-term: Ensure funds are paid to the Independent Road Agency and road fund.

MPW to enforce axle load limits, fees for violations of the limits, placement of weigh stations and contracting out the management of the weigh stations.<sup>3</sup>

<sup>2</sup> Tolls are expensive to operate; taking 30-40% of the revenue they raise to cover the costs of the toll system. Some have suggested electronic tolling stations, but these require electricity and a modern banking system that can manage nationwide electronic funds transfers and credit card operations. The viability of tolls must be studied so that road user fees are minimized and the costs of collecting the fees are also minimized.

<sup>3</sup> One possible set of penalties for violating axle load limits is for truckers to forfeit all freight in excess of the legal limit (by weight) to the government. Freight seized by the government in this manner is to be sold in the markets, funds initially to be paid to MOF and eventually to the Independent Road Fund.

Long-term: Transition function to the Independent Road Fund.

Provide assistance to MRRD and MPW to develop a coordinated system for developing, operating and maintaining rural roads.

Establish more efficient rural road management, where the communities and Provincial Governors' offices have more control over rural road maintenance and development. Women are to have at least 20% of the senior positions in these management committees.

Capacity building for community development operations and maintenance of rural roads including creating a tax and other funding mechanisms at the community level to make community management of farm to market roads sustainable. This activity is to be coordinated with all stakeholders, including the international community.

Improve the capacity for the MOI to do driver testing and licensing, vehicle safety inspections and registrations and a national traffic safety plan.

Improve the capacity of MOTCA to test and issue licenses (for aircrew, flight engineers, flight attendants, etc. Also, to issue specialized licenses and provide oversight for a number of trades related to civil aviation, including aircraft maintenance technicians, air traffic controllers, etc.), and civil aircraft inspections and registrations.

Provide assistance to NEPA and the GOA to pass legislation that will put in place the enabling regulations for the GOA's environmental law. Then, assist the transport ministries so they are able to appropriately address environmental issues in accord with OA law and regulations. The NEPA and legal requirements for EIAs are not (as of mid-2007) incorporated into the transport ministries, and transport projects are done without regard to their environmental impacts. Each transport ministry will have an environmental

unit to mainstream environmental regulations into all operating aspects of transport institutions.

1. For all people, especially women, working in the GOA transport sector institutions, provide an environment in which employees are valued for their contributions and are supported as they help deliver essential public services, with particular attention to the differential needs of women and men, and the government's goal to strengthen women's leadership and participation in all aspects of life.

## Training

### Transport Training Institute

Establish a financially sustainable Transportation Training Institute, housed either at Kabul University or Kabul Polytechnic. This institute will be an applied training center at all levels of sophistication, from training senior management and planners to construction workers. The institute would be an independent entity, located at one of the university campuses in Kabul mentioned above. People needing training from outside Kabul will need to travel to the Institute for their training, initially. In the long run, the Institute could establish other campuses at other cities in the country. The Institute will have a number of Departments with specialized training available for people working in each aspect of the sector.

The institute will receive requests for training, and then prepare modules to fit the request, and price tuition so as to cover costs. Tuition and funding will be initially covered by donors, but will move to being paid by Afghan institutions and individuals. Enrollment in these modules would be open to public and private sector students. All information about who receives training, promotions, and scholarships, should be disaggregated by gender. The capacity building and training programs should also be designed with full consideration of the gender roles in Afghan society and should include specific

measures to make the timing of and access to training better for females. The Institute will coordinate its programs with the Ministry of Education and the Ministry of Higher Education, but the Institute will remain independent.

### Transport-Sector Civil Service Pay Reform

Once managers and those in key positions are retrained, they should be eligible to compete for top-level and mid-level jobs in the transport sector governance institutions. The jobs should be on a two-year renewable term, based on performance. There must be no discrimination based on gender or ethnic background. The ministries must provide for a pay structure that enables people in these positions to be paid good salaries within the Afghan regional context. This will help provide the GOA with the ability to build the capacity required to effectively manage the Transport Sector. Stiff penalties for corrupt practices must be enforced in tandem with the increases in pay. All Transport-sector Ministries have requested "emergency" help with pay reform.

### For all Transport Sector Governance Institutions

- *Monitoring, Data Collection and Evaluation* for evidence-based decision-making: for the road sub-sector, detailed road inventory data; data on pavement structure and condition; traffic volume, loadings and accidents by vehicle type; costs, expenditures, budgets and revenues; inventory of active projects and their descriptions and budget; and inventory of material on hand and equipment are all required for planning and for informed decision making. Information regarding network details, traffic and axle loads, costs, and road conditions are necessary for planning and budgeting for road operation and maintenance. Such data facilitate determination of physical condition, safety, level of service, and efficiency of operation of the road network. These data are, therefore, necessary for providing the basis for management decisions on such aspects

as: strategies and expenditures for routine maintenance and for determining appropriate levels of investment for periodic maintenance and expansion. This function is not adequately performed by any of the transport ministries due to lack of capacity. This type of activity is also needed for civil aviation. The data are also required for monitoring and evaluation of the inputs, progress, and achievements of the goals in this strategy as part of the ANDS.

- *Planning and Budgeting* involves preparing an evidence-based rolling sector strategic plan, including objectives and desired outcomes and performance benchmarks. It also includes preparing action plans and milestones for carrying out specific activities and tasks. For road transport, it requires a clear understanding of trends and prevailing road use patterns and road condition (i.e., surface condition and roughness), traffic and axle load surveys, and structural and material testing to determine the causes of road deterioration, the choices of standards, the level of required expenditure and the timing and implementation of road maintenance and rehabilitation programs and activities. A similar program is needed for civil air transportation.
- *Engineering Design and Costing* involves preparing detailed engineering design and specification for works and costing of planned maintenance and rehabilitation works to specified standards. This requires engineering expertise, designing tools and understanding of how the original works was constructed as well as cost accounting expertise. International best practices suggest that estimated costs must be linked to selected maintenance and rehabilitation standards and that the selected maintenance and rehabilitation standards must reflect the causes and degree of deterioration of the infrastructure.

- *Tendering, Contracting and Contract Administration* since the basis for contracting out infrastructure maintenance and rehabilitation to the private sector is to take advantage of private sector efficiencies and management approaches, this is a required function. However, contracting and contract administration require specialized expertise and transparency. They require skills in tender document preparation, tender instructions preparation, advertising of tenders, due diligence and pre-qualification and short-listing of contractors, distribution of tender documents and instructions, receiving and processing bids, bid opening, bid evaluation and awarding contracts. Managing contracts for independent construction supervising engineers also is a critical function. Strong capacity for project management, supervision and inspection of works, material testing and quality assurance, sanctioning of non-performance, timely disbursement of payments to contractors, accounting and auditing in a transparent manner and project evaluation and contract close-out are required.
- *For roads, establishment and Management of a Road Fund* (long term, perhaps by year four of the program, International best practices indicate that road infrastructure maintenance should be paid for by road users. This often requires setting up an independent Road Fund, supported by a Road Board, and Road Agency, funded through road user tariffs (i.e., fuel tax and international transit fees). The Road Fund and its Board are responsible for collecting the revenue from the MOF, depositing the revenue into a separate account and managing the fund. The tariff-setting process involves projection of funds requirements for routine maintenance, and investment requirements for periodic maintenance, rehabilitation and upgrading as well as any new development. It also requires determining the costs and revenues from enforcing traffic laws and regulations, the cost of vehicle inspection, registration and licensing and revenue collection and operating the Road Fund. That is because what is available for infrastructure maintenance is net of these costs. The road user charges are initially paid into the MOF, and then the portion of those funds for maintenance is paid over to the Road Fund. Over the long haul, strong capacity is required for the Road Fund for fund accounting and management which includes account management, payment disbursement, accounting and auditing, and financial reporting. While the setting of tariffs to fully recover costs, in general, the actual tariff levels must be tempered by the GOA's objective of promoting trade and investment. Finally, the Road Agency is the technical implementing office through with maintenance contracts are let to private contractors and managed to completion. *For civil aviation, an analogous structure is also required* for best practices.
- *Policy and Regulatory Functions* require a strong legal framework that delineates and allocates roles and responsibilities among the various institutions involved in the transport sector. Regulation is also required for procurement and contracting and inspection and enforcement. A supportive legal framework is also required for increased private sector participation. International best practices are for line ministries to serve as regulators rather than producers and operators of the transport sector infrastructure and services. This regulatory function requires developing strong capacity for strategic planning (i.e., system design, Masterplanning, network expansion, etc); designation of roads and highways, bridges, intersections, etc., for easy identification; establishing methods, models, standards and guidelines for construction and maintenance, methods and systems for road condition surveys and analysis, methods and systems for determining vehicle weight, dimensions

and conditions; and methods and systems for setting axle load standards. It also requires capacity for setting and enforcing traffic safety laws, as well as environmental and social impact guidelines. It requires methods and systems for setting road user charges and fuel taxes, vehicle registration and sales taxes, driver license fees, transit fees, fuel taxes (diesel and petrol taxes), and traffic regulations violation charges and enforcement. A similar set of arrangements is required for civil aviation.

- *Asset Management* functions relate to the operation, maintenance and management of capital equipment such as bulldozers, excavators, motor graders, road rollers, tire rollers, dump trucks, hand-guided rollers, compactors, truck trailers and water tankers. It also relates to the management of inventory of roads, bridges, crossings, tunnels, culverts and other structures and their current conditions. This determines what equipment and tools are available for road maintenance and rehabilitation at any given point in time, and how many kms of roads need periodic and routine maintenance. Asset management provides a systematic process of maintaining, upgrading and operating assets combining engineering principles with sound business management practices and sound economic and benefit-cost rationale. Again, a similar management system is required for civil aviation.
- *Private Sector Development:* Afghan contractors are struggling to compete with international firms. The majority of Afghan construction companies do not have adequate planning, project development and management capacities. They lack the experience in managing multi-million dollar projects and the resources to back up such projects. Over the longer run, Kansas State University and Kabul University are working together to strengthen the training available

to Afghans in engineering with World Bank support. And USAID is providing business training by partially supporting the American University of Afghanistan. This does not address the needs for the next 4 – 5 years. Some local contractors also need assistance with contracting procedures and bid proposal preparation. Fiscal reporting is still undeveloped and mostly consists of 'check-book' accounting methods. Some contractors have hired staff accountants but even in these cases the standard year-end financial reports of balance sheets, income statements and cash flow statements are rarely prepared. Most of the time, only the bank account statement is utilized for the company 'books.'

- Independently audited financial accounts do not exist. Insurance and bonding also do not exist, and this also constrains developing the private construction sector. Creditors are not protected, and will not be protected until the pending Mortgage (i.e., collateral) legislation is made into law along with the needed implementing regulations. With no protection, potential lenders are unable to loan substantial funds to any business, including construction contractors. Financial and management accounting capacity development is sorely needed in the construction sector. The banks are willing to assist in this development but to date, owners/donors as well as the banks themselves have not taken a lead in this; the IMF has conducted a few training workshops, but there is no cohesive strategy. Developing the capacity of the local private road contracting sector is crucial for Afghanistan where the majority of infrastructure projects are currently financed by donors and security is a big risk factor
- *Human Resource Development:* In May 2002, an independent Civil Service Commission was established as required by the Bonn Agreement and subsequently, in June 2003 it was renamed as the Independent Administrative

Reform and Civil Service Commission (IARCSC). IARCSC is leading the process of Public Administration Reform (PAR). IARCSC develops the legal framework, pay structure, pension plans. It has also launched a pilot project to streamline and develop institutional structure, the management of personnel and the improvement of financial management and accounting in various government institutions. The pilot project, the Priority Restructuring and Reform (PRR) aims to promote administrative reforms in key government departments and develop capacity within the civil service. More than 19 ministries, 9 agencies and 2 provinces have undergone some kind of reform and more than 30,000 positions have been restructured. The aim of these reforms is to professionalize and reorient the civil service to be customer-service oriented. It is also to promote and foster merit-based appointments and promotion. But it is progressing too slowly for the transport sector to be sustainable in five years. This is why the first key function recommended is establishing the Transport Sector Civil Service, to bypass the slow moving PRR for transportation.

- *Gender and Training:* The sector will contribute to the gender equity goal of building women's human capital by providing preferential access to them in training and disaggregating by sex the data on scholarships, training and promotions, as well as those who will be laid off in the process of reform. Within the GOA transport sector institutions, a gender working group will be established in cooperation with the Ministry of Women's Affairs, which will serve as the lead mechanism to coordinate and monitor the implementation of its commitments to gender equity. The GOA transport sector institutions also commit to support and participate in inter-ministerial processes to implement and monitor the implementation of the National Action Plan for the Women of Afghanistan.
- *Counternarcotics:* The sector will contribute to the ANDS counternarcotics goals by facilitating enforcement activities of the MOI and police against narcotics smuggling. So, checkpoints for narcotics smuggling will be built into international border customs clearance stations, into truck pull-offs for permanent and roving weigh stations and into urban bypasses. Before major roads are rehabilitated or improved, the MPW or responsible party will consult with the police and MOI counternarcotics staff as to the appropriate placements for truck pull-offs at the entrances to major towns and cities. As civil airports are upgraded, the perimeters of the airports will be secured against possible narcotics smuggling, and passengers and air freight will be inspected with proper equipment for counternarcotics. But the only support from transport for additional official stops of trucks will be after civil service reform, where those responsible for counternarcotics operations do not increase the cost of licit transportation due to corrupt practices.
- *Antitrust in the trucking industry and in civil aviation:* There are reports that truckers (either drivers or owners of trucks) behave in

a “mafia”- like environment, fixing shipping and passenger fees on long distance and international

shipments and travel. The transport sector governance institutions will develop plans and enforcement mechanisms to ensure that fares and freight rates are set freely by truck owners, and not set by an industry association. Similarly, for civil aviation, airlines will be free to set fares and freight rates once there are enough service providers to ensure fair competition. These actions will require cooperation with the Ministry of Justice on drafting the appropriate laws and regulations.

## ROADMAP FOR DONOR COORDINATION AND DEVELOPMENT OF THE PRIVATE SECTOR

### Donor Coordination

1. Form a working group of all donors involved in the transportation sector, with one senior representative from each donor organization for the entire Transport sector, and no more than five representatives from the GOA (one in regional and national roads, one in rural roads, one in civil aviation, one from the municipalities, and one in Strategic Planning for Institutional Reform).
2. The working group is to meet twice a month to ensure coordination on four topics: Afghan Institutional Reform; Specific Priority Transport Sector Infrastructure Projects; Development of the Afghan Private Sector to perform all works required by the sector under GOA guidance; and Afghan Transport Sector Policy (i.e., user fees, control of airspace, etc.).<sup>4</sup>

3. Purpose of meetings is to ensure that the donors and the GOA are in agreement on progress towards Goals in this strategy. Donors are to ensure that the GOA prerogatives are met.

### Develop the Private Sector

1. After a number of pilot projects show the capabilities of the private sector to be sufficient, allow open bidding on road (runway) sections as well as entire roads (runways) so that Afghan firms can compete with international firms.
2. For large rehabilitation, improvement, development, use open competitive bidding as soon as practicable. If international firms win the bidding process, they are to be required to use Afghan firms as subcontractors and help build the Afghan firms’ capacity.
3. Use MPW staff for maintenance for the next several years, while training the MPW staff how to transition to the private sector, and providing them with financial assistance to make the transition without increasing unemployment.
4. Provide funding for Afghan contractors by building the Afghan financial sector (cross-cutting theme).<sup>5</sup>
5. Provide training to Afghan contractors in the competitive bidding process and in general business operating practices, through the single transport training institute.
6. Develop insurance, independent auditing, banking, and bonding industries in Afghanistan so that Afghan contractors can operate to international best practices (cross-cutting theme).

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<sup>4</sup> There is a steering committee led by MOF that focuses on the rural access, and other such committees. Lessons learned from the operations of these committees must be incorporated into the operations of the new Working Group.

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<sup>5</sup> Micro-credit schemes will not work because of the large sums involved.

7. Women are to receive equal access to all training and are to be invited to join Afghan private sector firms on an equal basis with men.

## PROGRAMS

### One National Transport Program

The goal of this sector strategy is to develop a unified strategy for the sector. A fragmented approach will slow progress, and keep transport costs high for Afghans, and take much longer, if ever, to reach the sector's strategic vision. Low quality transport services will also keep poverty incidence and its depth at crisis levels. Sector governance institutions must thus be as unified as possible to implement such a strategy. As of 2007, the MPW reports to the First Vice President, while MRRD and MoTCA report to the Second Vice President. This hinders coordination between ministries. The other ministries involved in the transport sector are also distributed between the two vice presidents' offices. The lack of coordination and communication mean that the governance of the sector is expensive and does not promote the development of the transport services industries—those moving freight and passengers, the true sole mission of the sector. The structure also means that road user fees are imposed by the various ministries, are not coordinated, are very high, and riddled with corruption, thus chocking the transport services sector.

Using the Transport Sector Inter Ministerial Working Group to develop the detailed Transport Sector Plan will be the first step in achieving a single transport program. The Group will also determine the lines of authority between the transportation-related governance institutions and the exact roles and responsibilities of each institution. The goal of the Group is to see that the sector's vision is realized and that the Afghan people get the best possible transport system and services given available resources. One of the

key functions of the Group will be to see that as much authority as possible is devolved to the municipalities and the provinces, in coordination with the new Independent Directorate of Local Governance. Another key function will be to see to it that during the implementation of this plan, no institutional change gets in the way of the delivery of services to the people. For details of projects refer to annex III.

### Regional/Ring Roads, Highways and Provincial Roads Sub Program

Below are the four major program Goals, objectives and strategies for the regional, national, and provincial roads.

#### *DEVELOPING AND IMPLEMENTING A STRATEGIC PLAN FOR REGIONAL AND*

#### *NATIONAL HIGHWAYS*

Develop a Strategic plan that will:

- Serve as a framework for decision making.
- Provide the basis for more detailed planning.
- Explain the organizational Goals and objectives.
- Develop and implement a performance monitoring plan.
- Plan capacity building.
- Plan primary road development (building on the ADB-funded Masterplan).
- Plan primary road operation and maintenance.
- Coordinate with the plans for secondary and rural roads, as well as municipal roads.

#### **PRIVATE SECTOR CAPACITY BUILDING: REGIONAL AND NATIONAL HIGHWAYS**

Capacity building is an integrated part of other programs; therefore its cost has been included in the O&M and road development programs costs. These will have to be re-estimated as the sector shifts to private-sector contracting.

## **Summary: Regional/Ring Roads, Highways and Provincial Roads**

Over the next five years a total of 5,334 km of roads will be rehabilitated and reconstructed with the estimated cost of \$3.6 billion; but there is only \$2.3 billion currently available and \$1.3 billion is still required. Over the next five years around 6,000 Km of National and Regional Highways will be maintained at a total estimated cost of \$1.5 billion. For Regional Highways the breakdown is 3,455.7 km for a total estimated cost of \$1.25 billion.

For National Highways the breakdown is 2,378.2 km. For planned National and Provincial road works, funding available is \$1.5 billion with a gap of \$550 million. (Preliminary estimates)

### **ROAD REHABILITATION AND RECONSTRUCTION: REGIONAL AND NATIONAL HIGHWAYS**

**Estimated Program Cost:** In the next five years a total of 5,334 km of roads need to be rehabilitated and reconstructed with the estimated cost of \$3.6 billion of which only \$2.3 billion is currently available and \$1.3 billion is still required. For a detailed list of projects please refer to Annex II.

### **ROAD OPERATION AND MAINTENANCE: REGIONAL AND NATIONAL HIGHWAYS**

**Estimated Program Cost:** In the next five years around 6,000 Km of National and Regional Highways need to be maintained at a total estimated cost of \$400 million.

**Regional Highways:** 3,455.7 km for a total estimated cost of \$102.8 million

**National Highways:** 2,378.2 km for a total estimated cost of \$118 million.

## **Mobility Objectives: Regional and National Highways**

### **1. Preserve and enhance the primary road infrastructure:**

Increase the remaining 108 km of the Regional Highways to meet AC benchmarks by the end of 2008 Increase around 4,570 km of the National Highways by the end of 2011

Increase around 9,500 km of the Provincial Roads by the end of 2011

Improve the condition of Regional Highway bridges so that less than 50 percent are classified as deficient by end-2013,

Improve the condition of primary road bridges so that less than 60 percent are classified as deficient by end-2013.

### **2. Minimize time needed to return primary roads to full service following disasters.**

National, Provincial and Local officials' satisfaction with the private contractors' (engaged and supervised by the GOA) emergency relief measures (to be measured through surveys).

Increase use of accelerated contracting mechanisms to make emergency response repairs. The baseline and measures are to be developed.

## **Rural Road Sub Program**

### **Summary: Rural Roads**

Over the next five years, 5,236.5 km of rural roads will be improved, and these serve about 2.8 million people. In addition, 1,054 km of new village-to village roads will be built, serving 320,000 people. Maintenance will be performed on 7,137 km of rural roads, and these roads serve 3.5 million people. Finally, 707 km of new district roads will be built, serving 120,000 people.

## The Sub Program

The existing rural road programs below are primarily under the purview of MRRD. MRRD and MPW cooperate but also compete in the arena of rural road governance. This is not in the best interests of the country. Moreover, the NSP, NRAP, and other donor-funded programs are good, but are not funded indefinitely, and thus are not sustainable. An integrated sustainable approach to rural road management is needed, based on these programs. New programs that are integrated with the rest of the nation's transport network are also needed; the programs and management of the programs must include female representation.

**The National Solidarity Programme (NSP)** aims to lay the foundation for community-level good governance and support community-managed development projects that improved rural communities' access to social and productive infrastructure and services. NSP intends to do so through the implementation of 3 main service lines: (a) local governance, (b) community empowerment, and (c) infrastructure support.

**The National Rural Access Programme (NRAP)**, formerly known as the National Emergency Employment Programme (NEEP), concentrates on the reconstruction/ rehabilitation of key rural access infrastructure. The objective of NRAP is to enhance human security and promote equitable economic growth by ensuring year-round access to basic services and facilities in rural Afghanistan by promoting local productive capacity, through a private sector led development of physical rural access infrastructure and employment creation for the rural poor. Specifically NRAP seeks to rehabilitate, reconstruct and maintain essential rural access infrastructure using appropriate labour-based approaches, thereby creating short-term employment opportunities for the rural poor nation-wide. The program has also established mechanisms to ensure that decision-making regarding sub-project selection is consultative and

activities do not overlap with those undertaken by other development activities in their respective sectors. In addition to restoring the rural access infrastructure, NRAP also seeks to build local capacity and create short-term employment opportunities for the rural poor through the application of community-based contracting where appropriate.

**National Surveillance System (NSS)**, The National Surveillance System was designed in 2003 (1382) to develop methods and institutional arrangements to ensure effective collection of data and delivery of analytical products. Building on achievements made during first phase, the second phase of NSS started in March 2005 (1384) with an expanded scope of activities and greater collaboration with other government institutions, such as the Central Statistics Office (CSO). NSS is funded by European Commission. The transportation elements of the NSS and CSO should be combined into one center for transportation planning, as determined by the TSIMWG.

**Afghanistan Institute of Rural Development (AIRD)**, on 11 June, 2006, through a Directive issued by the Minister of MRRD, the Afghanistan Institute of Rural Development (AIRD) was formally established. Based on the Minister's vision, work began on developing the two main arms of the institute, namely, Policy Research and Education & Training, as well as its administrative structure and governance details. The transportation elements of AIRD should be combined into one Institute for the entire transport sector, as described above.

## 3. Urban Transport Sub Program

### Summary

#### Urban Transport & Public Transport

MOUD and the municipalities have over 45 programs to pave and upgrade urban roads throughout the country and expand the service

availability of publicly supplied transport (i.e., busses). Costs are not estimated at this time. MOTCA will consider the best ways to use private-sector firms under contract to provide low-cost public transport across the country. Kabul Municipality will spend \$168 million to improve roads and bridges.

**The Sub Program:** immediate and most pressing goals are:

To provide capacity building programs for the traffic police in major and secondary cities to ensure better enforcement of traffic law so that traffic management is improved.

Ensure that the traffic-related infrastructure is rehabilitated or improved in all major urban areas; these include infrastructure such as bus terminals, traffic signs, and street lights to improve the flow of traffic.

Ensure the construction or improvement of ring roads around seven major cities (Kabul, Jalalabad, Khost, Kunduz, Mazar-i-Sharif, Poli-Khumri, Herat and Kandahar), where trucks that are not stopping in these cities are required to use the bypasses, which will reduce the flow of heavy vehicles through these cities.

The main objective of the urban transport sub-program is to provide and encourage a safe, convenient, and efficient multi-modal transportation system that is adequate to serve local transportation needs; and that supports urban and regional economic growth and poverty reduction; and that is coordinated with regional transportation systems. Programmes under urban transport sector will address policy issues, laws and regulations, management, planning, infrastructure and services investment.

Urban transport programs are the responsibility of each municipality, although roads for very small urban areas are managed directly by the Provincial Government. The Provincial Government is the top governing authority

for all but Kabul Municipality. The Provincial Governors report to the President, Parliament, and the MOI. Based on MOI's Draft Strategic Plan, MOI is totally focused on security issues (as it should be given the security situation). The new Independent Directorate for Local Governance will relieve the MOI of its civil governance duties.

The MoUD is also involved, and the lines of authority between the mayors, provincial governors, MOI, and the MoUD are unclear. This needs clarification so that the MoUD can give technical and sometimes financial support. In addition the national transport governance institutions need to be involved so that municipal and provincial road plans are coordinated with the national or primary road plans. Legislation and careful institutional planning are required so as to give as much autonomy as possible to the local authorities and communities, while being supported by the central government. It is important that road planning is coordinated with the central government's planning for primary and regional roads. The TSIMWG will be responsible for clarifying the roles and responsibilities, and ensuring that the municipalities and provinces have an important voice in determining the outcomes in their own areas. The Urban Development Group has prepared an Urban Sector Strategy (USS) to address urban sector issues more strategically. The USS identifies three key thematic areas that are: Strengthen urban governance, finance and management—(road and traffic Masterplanning at the municipal level);

Improve access to developed land, tenure and housing—(role of the municipal governments to acquire land needed for urban road networks); and Improve infrastructure and services—(urban road infrastructure works and public transport). As such, MoUD proposes wide-ranging programmes to address all themes to better reduce urban poverty while improving urban living conditions and economic opportunities. All transport program implementation and monitoring will be well-coordinated and shared among all the stakeholders at all levels in collaboration with

other line Ministries, NGOs and donors through consultative group mechanisms, and coordination committees of provincial municipalities.

This will be central to urban transport program implementation. Community participation will be used as a strategic implementation method for sustainable benefits of these programs. Active participation of communities in the management of local urban services through developing strong and active participatory link with Shuras; and training and support of community development workers would yield good results and contribute to transparency.

It is important to have seats for women in senior positions in the municipalities and to consult with women's Shuras, women's PCs, and any other local gender-inclusive mechanisms in order to hear their voice and issues. This is especially important in urban areas because there are more opportunities for education, training, employment and business in the cities and women are more mobile there. Women must be guaranteed access to transportation without experiencing harassment. Appropriate locations for bus stops are areas to be considered so that women of all ages would have equal access to transport and enjoy a peaceful mobility. The participation of women in consultations should be ensured at all levels.

This consultative group will be represented at the Working Group that will coordinate transport sector programs within the GOA and the donors. And the group will play a large role in integrating and coordinating urban transport sector governance functions.

#### **Strengthen Urban Governance, Finance and Management for Urban Transportation**

Improved urban governance programs for transportation will enable municipalities to deliver improved transportation services through better planning and integration of services,

financial management, revenue improvement, participatory planning, and decision-making based on data and analysis. The management of urban transportation systems and services include managing urban growth. Local governments are and will be involved in this process. Municipalities are *de jure* self-sustaining autonomous bodies, responsible for providing services and collecting revenues from local taxes, fees, licences, rents and proceeds from sale of properties. The role of the central government is to strengthen the capacities of the municipalities to govern their own transport sectors, including road networks, parking systems, public transport systems, and pedestrian circulation systems.

The municipalities have a history of operating nearly independently of the central government. Hence, MoUD faces an uphill task to bring the municipalities under an umbrella National Urban Policy where each and every municipality shares common goals and objectives and work under the guidance of the ministry in achieving them - which translate into achievement of ANDS strategies.

#### **Institutional Strengthening for Enhanced Transport Management Capacity:**

- **Restructuring:** All the urban institutions, including the Ministry and municipalities, will be reoriented and have input into achieving the nation's policy objectives. Laws will be strengthened; sub-sectoral policies developed; and municipal departments reorganised.
- **Supportive Policies:** Municipalities will also have new planning guidelines, construction and infrastructure standards, new technologies, management and planning techniques etc.
- **Capacity Building:** Capacity building will include training, and opportunities for professional development. Training will include, among many other topics, gender

awareness for drivers and conductors for public transport, and traffic police officers so that they have a correct approach to women, with a focus on prevention of, and dealing with, sexual harassment and violent incidents. This will be done through the new Transport Training Institute in Kabul through outreach programs from the Institute and through people in need of training travelling to Kabul for classes at the Institute in Kabul.

### **Building Municipal Capacity for Improving Transport Sector Services:**

- **Transport Sector Management Information System:** The municipalities will have computerised information and management systems so that they can effectively respond to the needs of the people with easily accessible information.
- **Improved Revenue Base for the Transport Sector:** Municipal finance and taxation laws will be reviewed and revised to enable the municipalities to efficiently collect revenue from various sources. These will include: vehicle purchase taxes; petrol and diesel taxes; parking fees and fines; vehicle licensing fees; area access fees; air pollution checks and fines; and ultimately congestion charges. These fees will be closely integrated with the road user fee structure of the nation so road users are not over-taxed, which would cut regional integration and trade.

There has also been some question about whether the wording in the new constitution, which says that “every kind of tax, duty and income collected shall be delivered to the state account,” which could change the financial independence of municipalities. The view of the MOI was that municipalities will continue to have access to their revenues, and that any new legislation will confirm the assignment of municipal revenues to municipalities. Nevertheless, the draft Public Finance and Expenditure Management Law appears to be silent on this issue. This will be corrected.

- **Improved Service Delivery:** Municipalities will have to develop urban transport strategies. These strategies will include transport-oriented-development, improved planning of operations and maintenance (O&M) of existing municipal transport assets.
- **Transport Demand Management:** policies will detail ways to reduce demand for private vehicle use such as parking taxes and enforcement, multi-passenger incentives, and car-pooling incentives.
- **A Comprehensive Urban Land Policy:** The land policy will address: (i) compensation for land needed for urban transport developments based on a new law that show how a “fair market price” is determined by land that the government buys from landowners; (ii) systematic allocation of urban land for city development in accordance with planning guidelines and masterplans; (iii) promotion and regulation of private sector development and services (iv) provision of secure tenure for inhabitants of informal settlements; (v) a free market (subject to annual real-estate tax) for land to be used for local industry, and (vi) registration and land titling.
- **Reform of Land Management Laws:** This will prevent unlawful occupation of government and private land by some individuals for their speculative economic (and political) gains. The laws also must give the municipalities the power of eminent domain and just compensation using a formula to determine the “fair market price” for land needed to widen, rehabilitate, or expand urban road systems. These laws must ensure that the rights of women and the disadvantaged are protected.

### **Improve Urban Transport Infrastructure and Services**

Urban Transportation Infrastructure Improvements Include:

- Develop appropriate city level infrastructure in accordance with master plans—these plans take into account both forecasts of demand and supply needs for different modes of transport. Long-term planning is essential and public investments have to be made to fit changing needs. MoUD will provide planning guidance and support for these masterplans, as well as assistance raising municipal finances for investment from various sources like donors, banks, central government transfers etc.
- Develop local and intra-ward transport systems in consultation with community groups to improve living conditions in the neighbourhoods and nearby settlements. The MoUD will provide standards and capacity while municipalities invest in these services from their own internal resources.
- Assure the Operation and Maintenance (O&M) of urban infrastructure, with adequate financial resources to sustain them. Here, local taxes and fiscal planning, as well as physical planning,

use of the private-sector, and local people's participation is the key, as well as support from MoUD and the TSIMWG.

- In all urban masterplans, pedestrian walkways, bicycle lanes and drainage systems on both sides of the roads will receive priority.
- All urban transport planning and management will include a standard approach to traffic flow management. There will be provisions for transporting handicap persons, easy pedestrian movement, adequate spaces for parking, strict traffic and parking rules fines, and enforcement mechanisms, trained traffic professionals, and public awareness campaigns for the public's cooperation with urban transport laws and regulations.

While the urban transportation infrastructure gap is huge, the resources to close it are scarce. Therefore it is important to comprehensively assess the infrastructure needs for every city, and then determine investment priorities between and within the cities. While it is Government policy to provide some gozar level infrastructure in all cities, this policy will be implemented first in priority cities. Investments will be planned over a reasonable period. Capacity building and development of standards will also go as subcomponents in this approach.

#### **Urban Transport Systems:**

Among the many needs of transport such as roads, subways, sky trains etc; due to the lack of studies on the other modes of transport, MoUD has concentrated on the road systems and surface transport terminals. This will require a full review of the proposed plan in two years time when MoUD has completed Master plans for major 7-8 urban centers.

**A- Road Types:** MoUD has concentrated on 3 major road types;

##### **1- Urban Arteries:**

With double carriage each 7m wide asphalt 2m shoulders 1 m wide drainage canals, 3m wide walkways and two side 6m wide service roads. Estimated costs for this type of road is around US \$ 400,000 per Km.

##### **2- Main City roads:**

With only double carriage road, 2m shoulders and 3m wide sidewalk. Estimated cost is about US \$ 280,000 per Km.

##### **3- Local neighbourhood roads:**

6m wide asphalt 50 cm drainage ditches , 3m wide sidewalks Estimated cost is about US \$ 150,000 per Km.

## B- Types of Urban Centers

Group A center with over 1 million population, only in Kabul

Group B centers with about 500,000 population (Mazar, Herat and Kandahar

Group C centers with 100,000 -200,000 population (Jalalabad, Kunduz, Khost)

Group D centers with 50,000-100,000 population (Poli Khomri, Samangan, Faizabad, Shiberghan, Maimana, Zaranj, Lashkarga, Grishk, Spinboldak, Ghazni, Gardiz, and Charyakar)

Table4. Roads allocated for each type of centers:

Type	KM/Y/C	No of Centers	KM/ 5y	Average cost / Km	Total Cost
A	150	1	750	US \$ 230,000	\$172.5 million
B	30	3	450	US \$ 230,000	\$103 million
C	20	3	300	US \$ 230,000	\$69 million
D	10	12	600	US \$ 150,000	\$90 million
E	6	29	870	US \$ 150,000	\$130.5 million
F	4	44	880	US \$ 150,000	\$132 million
<b>Total</b>		<b>91</b>	<b>3,750</b>		<b>US \$ 697 million</b>

## Urban Transport Terminals;

About 120 big and small bus terminals are planned for the 91 centers above. The minimum estimated cost is about 25 % of the road building cost; that is about US \$ 175 million per terminal.

The total cost of the surface transport system (roads and transport terminals) of 91 urban centers is estimated at about US \$ 872 million with an average allocation of US \$ 176 million per year.

Type	KM/Y/C	No of Centers	KM/ 5y	Name of Cities	No of terminals
A	150	1	750	Kabul	4
B	30	3	450	Kandahar, Mazar Heerat	2 in each city
C	20	3	300	Jallalabad, Kunduz Khost	2 in each city
D	10	12	600	Chariakar, Pulikhomri, Samanagan, Faizaabad, Shiberghan, Maiamana, Zaaranj, Lashkarga, Grishk, Ghazni, Gardiz, Spinboldak	One in each city
E	6	29	870	Metherlam, Asadabad, Sarobi, Poli Alam, Orgown, Sharana Maidan Shar, Bamian, Jabal, Saraj, Baghlan, Talagan, Qali noa, Chakhchakran, Saripoool, Shindad, Farah Qalat, Terenkot, Balkh, Imamsahib, Kishan, Kapisa, Katwaz, Moaqor, Jaghori, Di Kundi, Derawat, Pujshir, Darai sauf	One in each city

Type	KM/Y/C	No of Centers	KM/ 5y	Name of Cities	No of terminals
F	4	44	880	Daka torkham, Khogiani, Noristan, Zermat, Yaqobi, Sabad, Jaghatu, Behsood, Yakowlang, Doshi, Khinjan, Andrabi, Khost-Fring, Shirkhan, Khanabad, Ashkashim, Tashkurghan, Hairatan, Aqcha, Sholgar, Andkhoy, Aqina, Qaisar, Asmar, Murghab, Ghoria, Chisteeshareef, Lalera jungle, Taivara, Torghandai, Zinda joan, Islam Qila, Musa Qila, Dishn, Kajaki, Maiwand, Panjwai, Kijran, Punjab, Shajoy, Qarabagh, Ghorband, Takhta pool	One in each city
Total		91	3,750		120

Group E centers with 20,000- 50,000 population, for a total of 29 centers

Group F centers with less than 20,000 population for a total of 43 centers

*There are a total of about 91 urban centers*

infrastructure and service needs of Kabul's citizens; and

(iii) Improve transport service delivery in Kabul through coordination with MoUD.

## II. Investment Needs for Improved Basic Municipal Infrastructure and Services in Kabul

Five Years, 1385 – 1389 (2006-07 to 2010-11):  
US\$ 1.4 billion

Fifteen Years, 1385 – 1399 (2006-07 to 2020-21):  
US\$ 3.5 billion

### Kabul Municipality

#### I. Main objectives:

- (i) Estimate the cost of meeting the ANDS/ AC targets;
- (ii) Identify priority projects that will help in meeting these targets and the immediate

### **III. Infrastructure Investment Gap, 1385 – 1389 (2006-07 to 2010-11)**

Committed Funds: US\$ 187.22 million (14%)  
Investment Gap: US\$ 1.3 billion (86%)

Not having adequate funds has serious implications for the reconstruction and development of Kabul city. Therefore, accessing more funds from the government and donor agencies is a top priority for improved infrastructure and service delivery in Kabul city.

### **IV. Five-Year Plan and Priority Projects of Kabul Municipality**

A total of US\$ 556.49 million is required for implementing these projects over the next five years. A total of US\$ 152.47 million is required immediately to start some of the priority projects in FY 1386. But, owing to the budget ceiling set by the MOF, the city government has identified a smaller number of projects to be included in the Development Budget for FY 1386.

### **V. Kabul Municipality 5 year investment plan**

Short Term Strategy Measures (1-5 years):

1. Formulating a Five Year Plan for investment in transport infrastructure and services and developing credible projects, within the framework of the Urban Sector Afghanistan National Development Strategy. This to be done in cooperation with MoUD and other transport-related ministries.
2. Better coordination with the other transport governance institutions and donors to be able to fund high-priority projects.
3. More effective implementation of funded and ongoing projects.
4. Formulating a new Development Plan, including revision of the old Masterplan, for the newly added areas and for the city with: five, 10, 15 and 20 year time horizons. Again coordinated as described above.

5. Preparing plans and project to meet the transportation needs of refugees and returnees on priority basis.
6. Priority reform, restructuring, and capacity building of staff, including training of staff in English, use of computers, GIS and other specialized fields, to enable the overall municipal management to become more efficient, effective and responsive. Also to be coordinated with MoUD and other transport-related institutions.
7. Updating municipal legislation in collaboration with other relevant government agencies.
8. Clarification of the authority and responsibility of Kabul Municipality to avoid duplication and overlap with the concerned line Ministries, donors, and other government agencies.
9. Improving financial management and increasing municipal revenues, including municipal tax reforms.

10. Institutionalizing greater involvement of, and consultation with, the people and communities in municipal decision-making and management regarding transport.

Long Term Strategy Measures (5-10 years):

1. Completing the institutional reform and restructuring process of the Municipality, including hiring qualified technical and managerial staff at competitive salaries.
2. Greater decentralization of municipal management and service delivery functions, including redefining the responsibilities of the District offices and increasing the involvement of the private sector in service delivery.
3. Establish an effective inter-agency coordination mechanism for coordination of all development programs and projects in the city.

4. Generate enough income through municipal revenue enhancement efforts to fund the Municipality's development projects on self-sustaining basis.

Not having adequate funds has serious implications for reconstruction and development of Kabul city. Therefore, accessing more funds from the government and donor agencies is a top priority for improved infrastructure and service delivery in Kabul city.

### Civil Aviation Sub Program

#### Summary: Civil Aviation

MOTCA has in place programs designed to meet all of the above goals. The estimated cost of these programs is \$374 million, with a financing gap of \$257 million. (Preliminary budget estimates). This does not include the costs of the institutional reform programs or establishing the independent Civil Aviation Fund for sustainable maintenance.

In accordance with The Afghan Compact goals and timelines for civil aviation, by the end of 1389 Kabul International Airport (KIA) and Herat airports are expected to have achieved full ICAO certification as international civil airports. Mazar-e-Sharif (MeS), Jalalabad and Kandahar should be upgraded with runway repairs, air navigation, fire and rescue and communications equipment so that they are able to function as regional airports able to accept B737-type aircraft. Finally, seven domestic airfields should be upgraded to facilitate day/VMC domestic air transportation (AN 24/26 type aircraft). The ongoing work to upgrade these airports is fragmented because of the number of stakeholders with differing objectives, and further complicated by the disparate sources of funding. Management of this web of interlinked projects encompassing infrastructure, training of key personnel and regulatory structures, while taking into account the views of key stakeholders and linked to sources of funding, falls on MOTCA and requires holistic, top down, professional project

management skills to identify critical paths and set priorities.

It has not been fully possible to obtain definitive data directly from some of the sources of funding, for example, from the WB and ADB, and so the budget data is from various reports, from subject matter experts involved in reconstruction, and from MOTCA. Information on the status of airfield regeneration was taken from a number of sources, some of which was contradictory, highlighting once again that no single agency has a complete and accurate overview of the civil aviation reconstruction programme. Similarly, the accuracy of the funding required for individual projects varies considerably. In some cases comprehensive statements of work are available, while in other cases project costs appear to be little more than rough estimates. Finally, not all subject matter experts could be contacted. Nevertheless, it appears that sufficient reliable data was available to make broad judgements about investment priorities, as outlined below, so that budget allocation estimates can be justified.

#### The Sub Program

##### A) Rehabilitation of Kabul Airport:

This activity will rehabilitate Kabul Airport and will achieve ICAO certification by 2010. This involves an extensive rehabilitation effort involving multiple projects with refurbishment of existing infrastructure and construction of new facilities. Improving security measures is also critical to attract more airlines to use this airport.

KIA is Afghanistan's primary international airport and its importance to the economic development, status and overall normalisation of life in Afghanistan cannot be overstated. Upon completion to ICAO standards, it will undoubtedly attract major commercial passenger and cargo operators, which will help boost inward investment, tourism and other economic activity. It will also act as the main gateway for the local population to travel internationally, for example to the Hajj.

There has already been considerable development at KIA, mainly funded by international donors, which has brought the airport up ICAO compliancy in many areas. For example, a new terminal funded by Japan is scheduled to be completed in August 2008.

However, there are four outstanding projects that must be completed if the airport is to be fully ICAO compliant and acceptable to major carriers. These are contracts for safety and security, an airport master plan and emergency repairs to the southern taxiway (Note: The MOTCA estimate for emergency taxiway and ramp repairs at KIA is \$15 million). These emergency repairs must be completed next spring and should ensure that the surfaces are useable for the next 10 years (the estimate for rebuilding the southern taxiway is \$12.5 million). These are also MOTCA's priorities for the 1387 budget.

Kabul Security Contract and Safety Oversight Contracts. Inadequate airport security would be a serious constraint for civilian aircraft operations from Kabul. The majority of the world's leading airlines; most carriers are bound by national regulations which demand that destination airports comply with international aviation safety and security standards.

**Kabul Airport Master Plan.** A high level Master Plan is the usual starting point for any project management process. It ensures coherency and synchronization of the individual project elements and identifies the critical path and overall funding requirements. It should be a dynamic product that evolves as conditions change. Without a Master Plan, those projects on the critical path would not be identified and targeted for resources and this would inevitably lead to considerable schedule and cost risks. It is incomprehensible that a project as complex as the development of a major international airport is proceeding without an overall Master Plan.

**Southern Taxiway.** Major carriers will not use the airfield if there is significant foreign object debris (FOD) hazard or other problems with the taxiway that may damage aircraft.

To be complete by 1389, work will need to start by the beginning of 1388 at the very latest.

The overall cost to bring KIA up to a standard that would attract major commercial passenger and cargo operators is around \$50M. The emergency repairs are essential for 1387 and our view is that this and the other priority work should start as soon as possible in order to bring forward the commercial benefits. Our recommendation therefore is that the outstanding work at KIA takes priority over all other airfield projects and that the work is funded in the 1387 budget.

## B. Rehabilitation of other airports:

In addition to Kabul airport, four other major domestic airports (Herat, Mazar-i-Sharif, Jalalabad and Kandahar) and seven smaller regional airports are to be rehabilitated, reconstructed and developed. In addition, Logar Airport will be the subject of an upcoming feasibility study, and will be in the planning stage soon, and will be operational perhaps by 2013. A new airport at Baghram will also be undergoing a feasibility study, and may also be operational by 2013; this airport may serve as a regional cargo hub in the future. As soon as possible pave all air landing strips so that the adverse environmental effects from aircraft using dirt or gravel runways are eliminated.

### B.1 Jalalabad Airport

Jalalabad airport will be upgraded with runway repairs, air navigation, fire and rescue and communications equipment (civil aviation goals and timelines as agreed in the Afghan Compact). Jalalabad Airport should be developed to a standard which will allow regular service by B-727 and B-737 aircraft for both day and night operations.

The airport is located approximately 150 kilometres east of Kabul by road; Jalalabad Airport is on a plain at an elevation of approximately 1800 feet. It is a major economic centre and has good road connections to Kabul. Because of its

lower elevation, Jalalabad has less severe winter weather than Kabul. Rehabilitation of the airport would boost economic growth by providing a vital communication link to the capital Kabul. Moreover, it would attract internal commercial aviation including passenger and cargo, which would attract inwards investment and provide an outlet for goods from the South.

Jalalabad Airport has not had the major upgrades necessary to make it either a viable regional airport or an alternate airport for Kabul. It does have a Provincial Reconstruction Team at the airport, so there is some military and UN traffic. The airport comes under the Ministry of Defence (MoD), and in 1383, control of airport operations was delegated to the US military.

Since then, the former terminal building and car parking area have been fortified for use a command post and offices. A new building housing offices, airline accommodations, toilets and a small control tower has been constructed. All aircraft pavements are in poor condition. Due to the military activity and the fact that Jalalabad Airport is under the MoD, any work at the airport, particularly in the military movement area by a civilian contractor, would be extremely difficult.

To make the Jalalabad runway into an ICAO-compliant regional airport, the runway needs to be refurbished, a runway end safety area needs to be constructed and some trees and military buildings would have to be moved to create a clear strip. Taxiway construction as well as lighting and fire coverage are also necessary. USAID is working on a feasibility study for Jalalabad but currently no MoF or other funds have been allocated for the reconstruction of the airport and, according to a recent Afghan Compact Quarterly Progress Report, there are no active projects for Jalalabad Airport. Moreover, the report also states that MOTCA would prefer to sell the airport to the MoD and build a new airport at Sarshai. Currently there are no civil operations at Jalalabad and the US Military Master Plan does not envisage civilian flights until beyond 2012. Without the

minimum investment outlined above, Jalalabad would be unusable as a regional airport with all the economic, social and political consequences this would entail. It would also not meet the requirements set out in the Afghan Compact.

Assuming a full SOW in the near future and funding, contract award for the works might be possible in 1387, with the rehabilitation complete in early 1388. However, there are no moves to make this happen. Currently ISAF and the USAF need to use the airport as it is for the counterinsurgency program. So this may delay the plans by the GOA to improve the airport.

If the airport is to be brought up to ICAO standards, the cost of the upgrade is estimated at \$9,275,000.

## B.2 Kandahar Airport

Kandahar will be upgraded with runway repairs, air navigation, fire and rescue and communications equipment (civil aviation goals and timelines for Afghanistan agreed at the Afghan Compact)

Kandahar is a major regional airport and it is important for the economic development of the Kandahar Province and the Southern region of Afghanistan. It serves Afghanistan's second city and rehabilitation of the airport would boost economic growth by providing a vital communication link to the capital Kabul. Moreover, it would attract internal commercial aviation including passenger and cargo, which would attract investment and provide an outlet for goods from the South. Approximately 2700 Hajj participants flew from Kandahar in 1385.

Clearly there is plenty of potential for MOTCA to leverage on the NATO/US airfield infrastructure at Kandahar (ATC, runway, operations and maintenance costs etc) in order to develop a thriving regional airport. However, commercial passenger operations are already well established, albeit at a fairly low level and so the need for investment in 1387 is not acute. MOTCA also recognises the low priority for investment at

Kandahar. Nevertheless, once the higher priority work at KIA and Herat is addressed, then building up the civil aviation infrastructure at Kandahar is likely to lead to a rapidly expanding business. There are two priorities for Kandahar: replacing the fuel storage system, which is obsolete, and security infrastructure improvements without which passenger services cannot expand. These should be tackled in 1388. Other projects for Kandahar include a cargo ramp so that Afghan airlines can begin commercial cargo operations and this may be included in the \$15M that MOTCA states that it has set aside \$15M for work at Kandahar in 1388. The figures we have seen from CJ Eng to do most of the work required are considerably less than this but do not include the cargo ramp. Nevertheless, our recommendation would be to tackle just the high priority items in 1388 and leave the others until a later date (1389). Kandahar airport has been largely upgraded and civil ops have been ongoing since mid 1385. An important upgrade including the runway, runway lighting, ILS and terminal renovation was completed in late 1385.

Commercial aircraft operations are taking place at Kandahar so none of the projects below is an immediate priority. However, Kandahar has considerable potential as a regional hub that MOTCA wishes to exploit. Without the additional measures outlined below, growth at the airfield will be constrained. The priority projects are as follows:

**Security:** COMKAF will not support future expansion unless additional security measures are in place.

**Fuelling:** The existing bladder and berm system is reaching the end of its useful life and needs replacing with a new storage system. There is no alternative storage system once the bladders expire.

With commercial passenger operations are already well established, albeit at a fairly low level, the need for investment in 1387 is not acute. MOTCA

also recognises the low priority for investment at Kandahar. Nevertheless, once the higher priority work at KIA and Herat is addressed, then building up the civil aviation infrastructure at Kandahar is likely to lead to a rapidly expanding business. However, if the budget is tight, then our recommendation would be to tackle the high priority items in 1388 (security and fuel storage) and leave the others until a later date (1389).

### B.3 Herat Airport

Herat is to meet minimum ICAO standards for international operations by 2010 (civil aviation goals and timelines for Afghanistan agreed at the Afghan Compact).

The airport has the potential to become a key commercial hub for the region. The ability to export produce by air will play a major part in the regeneration of Afghanistan and the Herat region. Without ICAO compliance, the airport would not be useable for the majority of international commercial air passenger and cargo operators and investment to date would be nugatory.

Herat is a major regional airport for the Islamic Republic of Afghanistan and is important to the future economic development of Herat Province. The airfield site located south of the city was constructed circa 1960 by the US. It was later used as a Russian military establishment between 1979-1989. The existing runway consists of a 2.5 km long 45 m wide Asphalt Cement Concrete runway with a viable commercial airport catering to both civilian and military aircraft. Because of its location, the airport has the potential to become a key commercial hub for this region of the country.

The Scope of Work, conceptual (30%) design and cost estimate that would ensure Herat Airport achieves ICAO compliance from an airfield infrastructure perspective. This includes the installation of a new runway (not required for ICAO), refurbishment of existing runway, expansion of existing apron space, installation of all taxiway and runway lighting and the

installation of all taxiway and runway signage estimated at \$42.5.

The MOTCA cost estimate for Herat reconstruction is estimated at \$80 million (we have no information to determine the robustness of this estimate), to be funded by the MoF with the whole amount listed as a shortfall. In the meantime, ISAF has submitted Project Support Requests to NATO to fund refurbish the existing runway and to carry out taxiway repairs to take strategic airlift (PSR 147 estimated cost is \$6M) and PSR 153, to build a new apron for military aircraft (cost \$1.74M). NATO budget approval is expected soon.

The runway repairs should ensure the airfield is able to take strategic aircraft (eg IL 76). Eventually a new runway will be required in order to eliminate existing airfield obstructions but the refurbishment should provide a suitable surface for around 10 years. Once the new runway is complete, the existing runway would then be refurbished and used as a taxiway. According to the 16 Aug 07 Afghan Compact Quarterly Progress Report, the MoF has earmarked \$25 million for Herat reconstruction project in the 1387 (2008) budget submission review.

MOTCA has told us that the MoF has allocated \$27M in 1388. The SDF may provide \$26.5M (possibly what the MoF is providing). In the meantime, NATO will maintain key infrastructure so that the airfield can be used as the Forward Support Base to support the Provincial Reconstruction Team. The Airfield technical review team report from May 2006 lists other items that would be required for airfield operations beyond infrastructure required for ICAO compliance. This includes \$350k for refurbishment of the existing terminal (MOTCA has long term plans to spend \$20M on a new terminal and customs hall), installation of an ILS that would extend airfield operating hours (Spain is considering taking on this project) and other items.

#### B.4 Regional Airports (Meymana, Bamyan, Feyzabad, Farah, Qal-E-Naw, Chagcharan, Zaranj, Kunduz, Bost, Tarin Kowt)

In accordance with the Afghan Compact, seven domestic airports will be upgraded to facilitate domestic air transport.

Civil aviation has an important role to play in the Afghan transportation infrastructure because movement by road is hampered by difficult terrain, severe climatic conditions (snow, sandstorms, high temperatures, flash flooding) banditry and insurgent activity. The national road system, which is currently in poor condition, is undergoing an extensive rehabilitation program, with completion of the ring road as the priority. While this should restore relatively rapid and reliable services for freight and passengers close to the Ring Road, many other more isolated provincial centres with large populations will still have to wait many years for good road links. Furthermore, many roads may never be upgraded to highway standards because of constraints imposed by harsh terrain. The development of domestic airports therefore, is central to the integration of remote regions into Afghanistan's economic core. Not only would these airports encourage economic growth through inwards investment and the movement of goods, they would allow humanitarian aid to be moved more rapidly to target areas (e.g., disaster relief) and would allow central Government in Kabul to extend its reach into remote areas more easily. The process of rehabilitation itself would also contribute directly to employment creation and income generation. Better communication links would also contribute to an improvement in the accessibility to centrally located medical facilities, contribute to interethnic reconciliation and promote political unification. Finally, improvement to domestic aviation services would facilitate the movement of pilgrims from remote regions to the Hajj through the international hubs at Kabul and Herat (and regional airports at Mazar-e-Sharif and Kandahar).

The scope of work for each airfield consists of: the construction of civil works; a paved runway, taxiway and apron; a new passenger terminal;

fire station, control tower and technical buildings, utilities, domestic accommodation; roads and parking; maintenance facilities; PAPIs; and an automatic weather station. The ADB has provided \$20M for reconstruction but this has proved to be only enough for 4 airports (Maymana, Qal-e-Naw, Feyzabad and Chagcharan). The ADB has earmarked a further \$16M for the regeneration of another three domestic airfields, with the funds available in the 1388 budget. We recommend that two of them should be Bost and Tarin Kowt as the Scope of Work's are complete. However, there are a number of political and infrastructure issues that need to be sorted out at Bamyan and so this project should wait until 1389. In the meantime, technical assessments and Scope of Works should be carried out at Farah and Zaranj and then considered for funding in 1389 (security issues permitting). The seven domestic airfields are at the following stages of development:

**Bamyan:** Emergency repair work is required. MoTCA said this would start next spring. In the meantime \$20,000 had been sent for repairs to the drainage system but much more needs to be done (\$2-4 million). Long-term regeneration is on hold because of an inter-governmental departmental dispute over the airfields future. Nevertheless an ADB Scope of Work, design and cost estimate is complete and, therefore, all the pieces are in place to go to tender as soon as an agreement about the future of the airport is determined. Currently, NZ, the UN and other agencies use the airfield and MOTCA intends to ask them to financially support the repairs. CJEng have been tasked to come up with a plan to stabilise the airfield. A security fence is also required as children and animals often cross the runway.

**Feyzabad:** An ADB Scope of Work, design and cost estimate for regeneration is complete and a request for proposals from contractors has been issued. However, the one bid was considered to be excessive. The ADB was consulted and it was agreed to go ahead with the work (ISAF estimate Euro 3M) and this should begin in the near future.

**Maymana:** The contract is signed and work is in progress. The airfield regeneration should be complete by the end of 1388.

**Farah:** The ADB has allocated \$2.8M for the redevelopment of Farah. However, because of the security situation in the region, no bids to carry out the work have been received.

**Chagcharan:** An ADB Scope of Work, design and cost estimate is complete and the a request for proposals from contractors issued. However, none of the bids were acceptable and the RFP was re-issued.

**Qal-e-Naw:** The contract is signed and work is in progress. The airfield regeneration should be complete by the end of 1388.

**Zaranj:** Although funding for the regeneration of Zaranj is theoretically available. However, because of the security situation in the region, no bids to carry out the work have been received.

**Kunduz:** Kunduz is one of the potential alternatives to Farah and Zaranj. As well as the work outlined above, a new mains power electrical cable from the nearby town is required (\$290,000). The airfield has been equipped with radios but no other work is under contract.

**Bost (Lashkar Gah):** Bost is another alternative to Farah/Zaranj and the Scope of Work is complete. However a request for proposals from contractors will not be issued until the ADB has confirmed that it will fund the project.

**Tarin Kowt:** Tarin Kowt is another alternative to Farah/Zaranj. The technical assessment is complete and the Scope of Work, design and cost estimate is under final review however, a request for proposals from contractors will not be issued until the ADB has confirmed that it will fund the project.

**C. Improving Security Facilities in Airports:**

The overall security services at Afghan airports are currently not up to required international standards. As airports are refurbished, the security component will be further examined to ensure that the required improvements are initiated to provide for a safe commercial air transport environment for users.

**D. Salary Reform:** The salary system of the civil aviation sector requires an emergency reform. This reform is very essential for the Ministry of Transport and Civil Aviation so that it can attract, retain and train professional personnel. Even though the ministry has not yet been able to take advantage of the higher pay available through governmental reform initiatives, indications are that additional pay available under the Priority Reform and Restructure (PRR) program will still be well below acceptable levels required to retain competent aviation professionals. The creation of the new Transport Civil Service and Transport Training Institute will address these problems.

**E. Restructuring of the Civil Aviation Training Center:** The Civil Aviation Training Center is a central component of the Civil Aviation sector. Not only is it required to perform an important role in helping replenish a decimated civil aviation sector, it is also crucial in ensuring the long term sustainability of the sector by providing for a regular supply of new aviation professionals to meet attrition and expanding requirements for Afghanistan. The centre must be moved into the single Transport Training Institute as a Department within the Institute.

**F. Gender-Sensitive and Family Friendly Air Service:** pregnant women, passengers accompanied by children, and the physically impaired will be given priority in boarding the aircraft. Good seating will be provided for the passengers. They will also be offered discounted fares.

**G. Improving Air Traffic Control:** The current traffic control system of Kabul Airport is being carried out by USAF contractors and NATO forces. A transition plan with an important training component is required to ensure that the MOTCA increases its capability to take on related responsibilities as it is desired that the new independent CAA assume Airspace control authority responsibilities by 2010. In addition to personnel to perform the Air Traffic Control functions, improvements in the country's air traffic management facilities and plans are required that go beyond Kabul civil air traffic control.

**H. Communication System and Rehabilitation of Infrastructure:** The current communication system has undergone some rehabilitation but further improvements especially at regional airports are required to provide for improved communication and safety.

**I. Rehabilitation of Rescue and Fire System:** The rescue and fire systems are not standard at all airports. The World Bank has purchased fire extinguishing vehicles for Kabul International Airport. From the U.S., the city of Baltimore, Maryland has granted two rescue airplanes as well as fire extinguishing vehicles to Afghanistan but managing the implementation of this grant has been difficult. These vehicles will be sent to Mazar-i-Sharif. Training in rescue and fire extinguishing practices should be provided so that a good capacity is built. It is vital to have rescue and fire extinguishing vehicles in the airport.

**J. Financial Management:** A transparent financial management system is critical to ensuring a fair and effective fee and taxes collection at airports. An improved system is required. An independent Civil Aviation Fund for maintaining and improving the civil aviation infrastructure is needed. The Fund will receive its revenues from all civil-aviation-related fees. This reform will only take place when the governance of the sector has been strengthened to the point where corruption will not drain away the funds dedicated to the Civil Aviation Fund.

## Transport Sector Maintenance Sub Program

Maintenance, as can be seen from the above Strategy, is a cross-cutting issue. In the longer-term, towards the end of this Strategy's planning horizon, the method for maintaining roads (including urban, rural, national, provincial and regional), airports, and railheads, supported by international best practices, likely will be found to be based on using the private sector in such a way so that the private contractors assume as much of the risk of cost-overruns as possible and maintain the assets to a pre-set level of service. The program below is designed for roads now under the MPW's purview, but the principles of Performance Based Management and Maintenance (briefly described below) applies to all transport sector infrastructure, which are best thought of as assets owned by the GOA.

MPW has developed a carefully thought-out approach to test different methods of performing road maintenance. With the four pilot programs now in place, MPW and other transport asset management units in the GOA will select the best method, or combination of methods. MPW also supports the concept of a Road Fund as proposed in this Strategy. Emergency maintenance on roads under the purview of the MPW will remain a function performed directly by MPW staff members. For non-emergency maintenance, rehabilitation and improvements, the transport-asset management units of the GOA will slowly transition to a system of performance-based contracts let by the government to private contractors. In the meantime, under training programs specifically targeted at employees of GOA transport ministries involved directly in road works will retrain these people and another program will assist these people with technical and financial assistance in transitioning to the private sector. The full details of MPW's maintenance and rehabilitation program are in the Ministry's Strategy, and interested readers are recommended to refer to that document for more details.

Presently, MPW is experimenting with four different pilot projects, including the Road Maintenance Unit (RMU) as one of the pilot programs. Recognizing the lack of MPW's capacity to provide road maintenance services using traditional methods; the Road Maintenance Unit (to be funded by multiple donors, led by USAID) will develop and implement a program of performance-based contracting to perform road maintenance activities. The EC, JICA and the MPW itself are designing and implementing different programs and approaches to road (and by extension, all transport infrastructure assets) for maintenance and rehabilitation. In a few years, it will become apparent which approach (or combination of approaches) is best for Afghanistan.

After review by the MPW and other transport governance units, the approach taken by the RMU may be selected as the best approach. Proven effective in a wide range of countries for performing road maintenance, the Performance Based Management & Maintenance of Roads (PMMR) approach will rely on Afghan contractors operating under the oversight and general direction of the Road Management Unit (RMU) to perform the actual road maintenance

related works to the extent possible. Note that similar units, named the Aviation Maintenance Unit (AMU)--to maintain the GOA's aviation infrastructure assets, and the Railway Maintenance Unit (RAMU)--to maintain the GOA's rail assets, should be formed and activated using the same principles as the Road Maintenance Unit will do for road assets.

Performance based management and maintenance of roads (PMMR) is a complete program of Roadway Asset Management. It is an at-risk, fixed price, programmed approach to repairing, preserving and operating roadway assets to meet pre-determined Goals. Under this system of maintenance, the owner (i.e., the Government) determines the Level of Service (LOS) for each roadway asset. The LOS is the minimum standard

(performance standard) at which the roadway must be kept. The contractor is responsible for determining the Level of Effort (LOE) or the amount of various work activities that are required to keep the asset at the predetermined required standard or Level of Service. As the manager of the asset, the contractor is also required to: 1) Report periodically on the condition of each asset; 2) Notify the owner of Emergency Conditions and their anticipated impact; 3) Make recommendations for Improvements Works, Safety Upgrades, or Capital Works; and 4) Prepare and Price requests for change orders for work outside the scope of the contract when requested.

Under the PMMR, payments are based on how well the contractor manages to comply with the performance standards defined in the contract, and not on the amount of works and services executed. The PMMR contract defines a final product and it is up to the contractor to achieve this result. Therefore, work selection, design and delivery are all responsibilities of the contractor. Hence, the choice and application of technology and the pursuit of innovative materials, processes and management are all up to the contractor. This allocates higher risk to the contractor compared to traditional contract arrangements, but at the same time creates opportunities to increase the contractor's profit margins where improved efficiencies and effectiveness of design, process, technology and/or management are able to reduce the cost of achieving the specified performance standards.

### **Private Sector Involvement & Capacity Building of Afghan Transport Infrastructure Construction Firms**

Historically, road maintenance work in Afghanistan has been performed by force account – the use of MPW personnel and equipment to plan, organize and perform all work. Currently the MPW does not have the necessary trained staff, equipment or other resources to carry out an ongoing maintenance program for newly rehabilitated roads. As a result, the MPW has asked

donors to maintain the roads they rehabilitated and improved for the next five years. Also, over the next five years, the MPW will continue to use its own employees for O&M until the MPW is satisfied, along with the Transport Sector Inter Ministerial Working Group, that the private sector is capable of managing road O&M across the country.

As time passes, more of the work will be contracted out to the private sector, namely, Afghanistan-based contractors, not to exclude those firms operating with foreign ownership but with an established Afghanistan presence. In order to accommodate Afghan-owned contractors, contract bid packages will have each road section listed as a separate bid item. Contractors will be allowed to bid one, multiple, or all sections of roads being advertised for bid as will be reflected in the bid package. Bids will be evaluated and awarded on a section-by-section basis.

All road and transport-asset O&M efforts will focus on continuing to develop a nucleus of local Afghan contractors that compete and perform successfully performance based, competitively awarded, transport works contracts. Interested contractors will be urged to attend seminars and/or workshops where performance-based contracting methods will be further defined and explained within the Afghanistan operating context. The Transport Training Institute will offer these training programs and workshops and will include detailed instruction that explains how to interpret a Scope of Work as well as hands-on assistance in "how to" prepare a complete bid package.

Upon maintenance contract awards, the Ministry and donor staff will work closely with the maintenance contractors to ensure they fully understand the performance-based approach. Training efforts will include seminars, on the job training and formal presentations on topics such as: Project planning and scheduling; Maintenance activity performance improvements; Measurements and samples to support

Quality Control; Invoicing and record keeping methods; and Effective maintenance equipment applications.

As mentioned above, the shift to using private firms for O&M will be coordinated with training of MPW staff members who are currently doing these types of jobs directly for the government. All efforts, and possibly a guarantee for several years of employment, will be made to ensure that these people do not become unemployed. The MPW has details of such a program, and this program will be reviewed as part of the TSIMWG's Transport Plan.

### **Public Transport Sub Program**

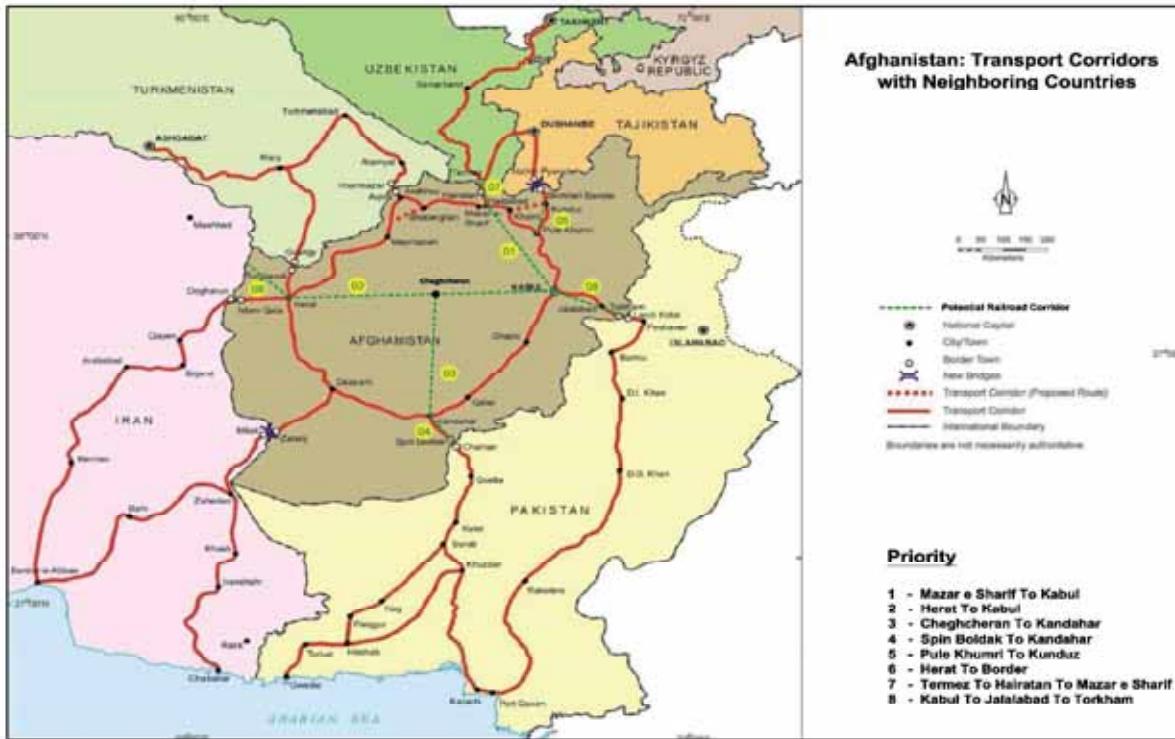
There is a need to corporatize the publicly owned bus companies as a first step towards privatization. Public bus transportation's vehicles, maintenance and operations are all now owned and operated by the MoTCA. These assets will be more efficiently operated by private-sector bus companies. There are several options that need to be explored: the busses can be owned by the GOA, and competitively leased to private-sector operators who will be also required to maintain the vehicles to standards set by the GOA; or the busses can be sold to the private sector and concessions developed to allow the private-sector bus owners to competitively bid on providing a government-set level of services on specific routes at government-set fares. Fares can be subsidized by the GOA, or can be set by the market. This applies to urban and inter-urban public bus

transport as well. Those municipalities that offer public bus transport services also need to involve the private sector as described above. Neither public nor private busses (nor trucks) should need to obtain prior approval and costly permits from MoCI to travel between different points in the country.

### **Railway Sub Program**

By end 2009, it is a priority to build or strengthen intermodal loading and unloading stations at all railheads to lower the costs of loading and unloading freight being moved between international rail shipments and truck shipments within the country. One of these transhipment points is at Hazareh Toghay (in Afghanistan, opposite from the Uzbek town of Termez). Another rail line enters Afghanistan at Torghundi, just across the Turkmenistan border. All these railhead intermodal stations need improvement and ongoing O&M. The Kazak and the PRC Governments have made overtures to the GOA regarding new rail lines to exploit the deposits of copper, coal, and iron ore. The GOA will conduct its own feasibility studies of possible new rail lines, and together with estimates of the value of mining Afghanistan's resources on an annual basis, will be able to negotiate a better set of commercial packages. Several other rail lines will also be considered by the GOA, after completing independent feasibility studies. See map below for some possible rail lines that may be built in the future.

**Map 8:** Potential Rail Lines for Afghanistan



### Gaps and Redundancies in Programs

1. For the MPW, the strategy is for the Afghan Road Network (ARN). ARN defined by MPW includes all non-urban roads in the country. This ignores the current authority that MRRD has over rural roads. As a result:
  - MPW is proposing an ARN Strategic Plan and developing a Masterplan
  - MRRD has a draft Masterplan for rural roads.

These are not coordinated, and yet they need to be coordinated or better yet integrated into one Masterplan for good governance of the sector.

2. The MRRD, MoUD, the municipalities and the MPW want to support the development of the private-sector road contracting industry, these efforts should be coordinated.

3. How can these governance units build capacity in the technical aspects of road maintenance and construction for private sector firms when each has a severe lack of qualified engineers?
4. There is a gap in developing a cadre of staff to do Masterplanning
5. Data collection—for rural roads, there needs to be a major program to collect the appropriate data to prepare and update Masterplanning and planning for O&M activities. MRRD proposes to do this, but the effort will be less expensive if the data collection efforts are integrated with those for primary roads.
6. For NRAP, there is only funding for the next two to three years. How will this be funded after the donor funds run out in the fourth year?
7. There is no plan for rural road maintenance plan that is well articulated

- 8. There is no program highlighted to improve public transportation
- 9. There is no program highlighted to reduce and streamline road user fees across Ministries
- 10. Municipalities raise their own revenues and manage their own transportation programs. The role of MoUD should be to provide support and technical assistance to the municipalities, but the municipalities themselves must set their own Goals; the Goals cannot be dictated from the central government through MoUD. Municipalities need assistance in the following:
  - Urban road Masterplanning
  - Urban road traffic flow management
  - Urban road finance
  - Collection of data to support the above activities
  - Use of eminent domain to secure urban land for road widening or expansion
  - Development and use of a system to compensate people who lose land under eminent domain for expansion or widening of the road network, i.e., that they be paid "fair market value" for the land they give to the municipality, or some other system of fair compensation.
  - A system to deal with heritage issues, such as re-acquiring the skills to build cobblestoned streets, and also to incorporate historic roads that are preserved to their original width and condition into the urban Masterplanning and traffic flow management.
  - A system to coordinate urban road Masterplanning and traffic flow patterns with the primary and rural road (i.e., National) Masterplanning activities. Special attention needs to be given to building urban bypasses to avoid urban traffic congestion and overloading on urban roads.
- The Kabul Municipality programs are not described and cannot be evaluated.
- 11. There is no priority program to ensure efficient sustainable road maintenance and development
- 12. There is no priority road safety program
- 13. For Civil Aviation, there is no plan to involve the private sector in O&M
- 14. For Civil Aviation, there is no plan to engage the private sector in operating airports under contract. The concept of Public-Private-Partnerships should be developed and implemented; this will bring private sector investment into the airport infrastructure.
- 15. There is a program proposed for civil airport Masterplanning, a crucial activity if the sub-sector is to spur national development, but this program will need funding of about US\$ 3 million.
- 16. There is no program to collect the necessary air transport data that will support the Masterplanning activities.
- 17. Each key ministry involved in the sector is asking for an emergency and immediate revision in pay scales so they can attract the most skilled people to manage the sector. While this is a major problem, simply increasing the salaries of those in the ministries at this time will not solve the problem of the lack of capacity. A comprehensive Transport Sector Civil Service reform program needs to be quickly implemented. Key elements would include: a merit-based competitive selection of staff for key positions; these positions to be based on performance-based two-year renewable contracts; and stiff penalties for engaging in corrupt practices, such as a loss of the job, a fine of three months' pay, and a short jail sentence.



## CHAPTER 3

# TRANSPORT SUB-SECTOR STRATEGIES

### REGIONAL, NATIONAL, AND PROVINCIAL ROADS

In accord with international best practices, the following is GOA policy:

- The policy on operation and maintenance of the roads is as follows:

Afghan road governance institutions will focus on policy making, planning, contract management and monitoring and evaluation.

GOA governance institutions will assist in strengthening the capacity of the private sector to do road operations and maintenance.

GOA road governance institutions will build up their capacity to manage maintenance contracts.

- GOA road governance institutions acknowledge gratefully and give full approval to donors who will maintain rehabilitated roads for a certain period.

However, there exist coordination issues between MRRD and MPW. The transport sector strategy will help solve this problem.

### Regional, National, And Provincial Road Development Criteria

Below is a list of the most important road criteria identified by stakeholders in the sector:

- Improve regional connectivity to facilitate low-cost movement of goods and people;
- Population density along the road;

- Agricultural potential;
- Mining and industrial development potential;
- Expected growth in traffic and Improve local connectivity to health and other social services.

By end 2009, road projects will be prioritized based on their estimated internal rate of return, impact on counterinsurgency, followed by impact on poverty reduction, gender equity, and other social factors.

Meanwhile, in addition to the above criteria, the major criterion for road sector development and maintenance is how the proposed projects can assist national economic growth, poverty reduction, gender equity, and enable security improvements nationwide. Also, for some of the prioritized roads the only criterion is their industrial development potential. These kinds of roads can be called industrial roads.

Perhaps one of the major challenges affecting the prioritization of road sector development projects is that donors, who are among the major stakeholders, sometimes come up with their own priorities based on their perspective of Afghanistan's needs. This can severely affect the proposed prioritization based on the aforementioned criteria. Better coordination with donors following this Strategy's roadmap will minimize the problem.

## Rural Roads

Rural roads, however defined, are generally recognized as being the responsibility of MRRD. MRRD's strategy to develop rural roads is based on maximizing connectivity between people in rural areas and social services centers, centers to allow people to have a voice in local politics, and market centers. According to MRRD, priority should be placed on ensuring connectivity to the largest villages first as a means of maximizing returns per unit of investment.<sup>1</sup> Indeed, recent research shows that such an approach will also encourage the development of transport hubs and services.<sup>2</sup>

However although efforts have been made to rationalize the decision-making process for investments in the rural roads sector, in practice the selection of targeted rural roads has been strongly influenced by external actors.

Furthermore, current confusion regarding MRRD's role is compounded by the ANDS framework, which is comprised of three pillars for development, which are divided into six sectors. Regional and National Highways for which MPW is the lead agency, fall under the framework of Sector three (3) on infrastructure and natural resources, whereas Secondary and lower classes of roads are included in Sector six (6): Agriculture and Rural Development, with joint MPW/MRRD implementation. The dissection of the Road Sector into two different ANDS sectors has contributed to poor coordination in planning between the sub-sectors within the overall Roads Sector.

To rank and prioritize rural roads projects, as with all roads projects, the most important factors are the estimated internal rate of return, impact on counterinsurgency, followed by impact on poverty reduction and other social factors. However, with rural roads connectivity, counterinsurgency, gender equity, and poverty reduction should count for more weight than is given to the internal rate of return for major roads. In the meantime each recommended road should be justified with

1 This rationale assumes that market and road network hierarchy development principles are respected

2 International Forum for Rural Transport and Development 2006

specific language as to why it is a priority. At this point, it is important to recognize that the WB is providing assistance to the MRRD so that its staff are collecting the relevant data, applying state-of-the art roads planning models, and has developed a national rural roads program. This type of important data-based analytical planning must be integrated into a single road Masterplan for the country.

## Road Maintenance

While MPW has a strategy, it needs to be refined and integrated into one national strategy for all roads, including urban and rural roads.

The MPW has a strategy for cost recovery which includes instituting and expanding road tolls to be administered and collected by a private contractor. This is reasonable in the short run, but tolls need to be abolished in accord with best practices and replaced with a fuel levy. The MPW strategy is to build its maintenance contract administration and management capacity. Its goal now is to engage the private sector in road rehabilitation and maintenance works, but only gradually, and in the long term maintaining some road maintenance functions for its own employees. The MPW is also to regulate and provide oversight for safe, easily accessible, equitable, affordable and high quality transportation system which will promote economic growth in Afghanistan.

MPW's plan is to continue to maintain roads using force account until a suitable alternative is found to employ the MPW's roads O&M labor force, and until MPW is satisfied that the private sector can actually perform quality O&M for roads. MPW realizes that the capacity of the Afghan private sector to carry out road reconstruction and maintenance is still low and needs to be strengthened before they can be effective partners with MPW. There is a need to push the development of a private sector road maintenance industry, and in the interim, use international contractors. The international contractors in country always use Afghan private subcontractors, and this is a good way to build the capacity of the Afghan contractors.

While the Afghan contracting industry is still small by international standards, it is vibrant and ready to take on most if not all of the O&M required by the roads in the country. Moreover, the capacity building project recommended in this strategy will specifically target the redundant MPW workers so that they get the training they need to join firms in the new private sector O&M industry or in other parts of the Afghan economy. Then the strategy recommends a program to establish a job placement center for these newly trained workers.

The MPW will create a new management structure focusing on maintenance work through the private sector. As per the five-year Strategic Plan (2007-2011), the size and the scope of this department will be expanded as fast as possible, while functions of other MPW departments will diminish. This department will be technically and financially supported by donors until the MPW reaches its projected capacity to inspect, design, estimate, contract, and monitor and evaluate maintenance works of the roads.

Operations and Maintenance staff will be offered remuneration according to adjusted salaries in the PAR program similar to the way UNOPS and other donors remunerate MPW engineers in the NRAP and other programs/projects. The MPW staff will be offered technical, managerial, contractual and administrative courses to help them achieve departmental and personal Goals. This supports the strategy's recommendation for a Transport Civil Service and for a single Transport Training Center with a job-placement center.

### **Public Transport-Road Transport Services**

#### **Millie Bus (Public Transport)**

##### **Vision of the Ministry on Millie Bus activities:**

The Millie Bus enterprise is a public utility organization which functions under title of "Public Transport" and, as in many countries, is financially supported and operated by the government. It is

responsible for providing transportation services in the capital, municipalities, and provinces for low-income citizens. The Millie Bus enterprise has been functioning as a transport entity for the past 40 years in Afghanistan which has been financially supported and subsidized by different regimes in the country. With the establishment of Interim Administration, this enterprise has been working towards corporatization in line with government policy. Its capacity has been enhanced after donor countries gave new buses as follows:

India ( 600 buses)

Japan ( 111 buses)

Iran ( 50 buses)

Pakistan ( 100 buses)

Pakistan ( 200 trucks )

The Millie Bus enterprise (being a government-owned enterprise), is currently providing cheap transportation services with its 900 buses in 32 provinces. Only in Kabul City, the Millie Bus enterprise with 601 buses provides transportation services to four million citizens (2006). Millie Buses are the choice of travel mode by the poor citizens of this city because it is the cheapest means of transportation.

There is a need to corporatize the publicly owned bus companies as a first step towards privatization. Public bus transportation's vehicles, maintenance and operations are all now owned and operated by the MoTCA and some municipalities. These assets will be more efficiently operated by private-sector bus companies. There are several options that need to be explored: the busses can be owned by the GOA, and competitively leased to private-sector operators who will be also required to maintain the vehicles to standards set by the GOA; or the busses can be sold to the private sector and concessions developed to allow the private-sector bus owners to competitively bid on providing a government-set level of services on specific routes at government-set fares. Fares can be subsidized by the GOA, or can be set by the market. This applies to urban and inter-urban

public bus transport. Neither public nor private busses (nor trucks) should need to obtain prior approval and costly permits from MOCI to travel between different points in the country.

In the operation of public transport, the implementation of the policy on Equitable Access to Transportation nationwide must be observed. Specifically: (a) allocation of at least 14 seats of public buses to women; (b) allocation of prime seats to pregnant women and women who are accompanied by children, disabled and elderly; (c) free rides for children 12 years old and below; (d) special bus arrangement to bring schoolgirls back home from school; and (e) awareness raising for bus drivers and conductors. Using the private sector under contract(s) to the government will require these provisions in the contract. However, to subsidize these activities, the private-sector contractors will charge the government more for the service. Nonetheless, the provision of the bus service being operated by the private sector under contract to the government will be less expensive overall than if the government provided the services directly. Seats should be labelled as "reserved for women," reserved for children," and "reserved for the handicapped."

For airports, the MOTCA will find cost savings by competitively concessioning out the operations and maintenance of civil airports to private operators who again will have to meet government-set minimum level of services, both in the operation and maintenance of the airports. By carrying out these activities the MOTCA will become a management and a policy-making governance unit, in accord with best practices.

### Municipalities (Both Roads And Public Transport)

Municipalities, under the Provincial Governors, who report to the MOI and the GOA, and the MoUD, have responsibility to maintain and improve urban transport systems. The municipalities also collect their own revenues. MoUD has set the following strategy for the urban transport sector.

MoUD has more ambitious targets for each of the next five years beyond 2010 to meet their vision for 2020. These are not reported here, but are in the Ministry Strategy.

- Preparing urban transport sector plans for 30 major cities and towns. These plans will consider all relevant transport modes, including private vehicles, public transport, bicycles, and pedestrian walkways. They will establish the framework for acquiring and protecting existing and future rights-of-way from building encroachment. The plans will integrate transportation modes to provide choice in mobility. The plans will address traffic and other circulation as well as the physical infrastructure;

Ensure that there a public-transport bus system for 60% - 65% of cities with more than 50,000 population;

Ensure that there are electric trolley bus systems for 60% - 65% of cities with more than 300,000 population;

Building by-pass roads for 20 major cities and towns (those with population above 200,000);

Building inter-city bus stations for 50 cities and towns (those with population above 50,000) and truck parking stations and also to build adequate parking areas in all big, medium and small cities;

Planning detailed programs of transportation for 50 cities and towns (not full Masterplans); and

Airports should be placed as far away as possible from urban areas and residential areas to protect the environment and minimize noise pollution.

### Civil Aviation

As a goal for 2010, civil aviation projects also need to be justified and prioritized much the same as roads projects. The most important factors are the estimated internal rate of return, impact on counterinsurgency, followed by impact on poverty reduction and other social factors. In the meantime each recommended

airport improvement is justified with specific language as to why it is a priority in the Policy Action Annex and Programs and Projects Annex below.

There exist a number of issues that call for much better coordination between ISAF and the US Air Force and the Civil Aviation Department. These include:

Involve MOTCA representatives in the decision making-process on airspace rule changes;

Authorize 24 hour civilian flight access to Kabul and Kandahar International Airports in order to facilitate the growth of a civil aviation private-sector air freight industry;

Avoid new military development works on civilian airports;

Establish direct lines of communication between the military airspace control authority and MOTCA;

Develop direct lines of communication between ISAF DCOM AIR staff and the counterpart office in MOTCA;

Authorize continuous 24-hour civilian flight operations throughout the Afghanistan flight information region;

Eliminate gaps in pilot compliance with aeronautical information publication (AIP) requirements;

Return high-altitude air traffic control to Afghan controllers;

Relocate USAF airspace control authority and planning from Qatar to Afghanistan;

Restore civilian airports in Afghanistan from military to civilian use; and Prepare Masterplans for all civil aviation airports and the airport system in general.

## Civil Aviation Law

This law represents the fundamental building block for a renewed aviation sector and will enable the establishment of a new Civil Aviation Authority under MoTCA to enable Afghanistan to meet international standards. This law is essential to the implementation of a series of modern air regulations, which were prepared in 2005 and then finalized in line with international standards in 2006. These regulations will form the essential framework for a safe air environment, required for future growth.

**A. Rehabilitation of Kabul Airport:** This activity will rehabilitate Kabul Airport so that it will achieve ICAO certification by 2010. This involves an extensive rehabilitation effort involving multiple projects with refurbishment of existing infrastructure and construction of new facilities.

**B. Rehabilitation of other airports:** In addition to Kabul airport, four other major domestic airports (Herat, Mazar-i-Sharif, Jalalabad and Kandahar) and seven smaller regional airports are to be rehabilitated, reconstructed and developed. Logar Airport will be the subject of a new feasibility study now, and will be in the planning stage soon, and will be operational perhaps by 2013. A feasibility study is planned for a civil airport at Baghram, and it will serve as an air cargo hub in the future.

**C. Improving Security Facilities in Airports:** The overall security services at Afghan airports are currently not up to required international standards. As airports are refurbished, the security component will be further examined to ensure that the required improvements are initiated to provide for a safe commercial air transport environment for users.

**D. Salary Reform:** The salary system of the civil aviation sector requires an emergency reform. This reform is very essential for the Ministry of Transport and Civil Aviation so that it can attract, retain and train professional personnel. Even

though the ministry has not yet been able to take advantage of the higher pay available through governmental reform initiatives, indications are that additional pay available under the Priority Reform and Restructure (PRR) program will still be well below acceptable levels required to retain competent aviation professionals. Various options are under consideration to address this problem until the Pay and Grading program comes into effect. Again, this is proposed in the general roadmap for the sector, and should not be separate for aviation.

**E. Restructuring of the Civil Aviation Training Center:** The Civil Aviation Training Center is a central component of the Civil Aviation sector. Not only is it required to perform an important role in helping replenish a decimated civil aviation sector, it is also crucial in ensuring the long term sustainability of the sector by providing for a regular supply of new aviation professionals to meet attrition and expanding requirements for Afghanistan. The training center will be transitions into the single transport training institute as a separate Department.

**F. Gender-Sensitive and Family Friendly Air Service:** pregnant women, passengers accompanied by children, and the physically impaired will be given priority in boarding the aircraft. Good seating will be provided for these passengers. They will also be offered discounted fares.

**G. Improving Air Traffic Control:** The current traffic control system of Kabul Airport is being carried out by USAF under CENTCOM. A transition plan with an important training component is required to ensure that the MOTCA's increases its capability to take on related responsibilities as it is desired that the MOTCA (or the newly formed independent Civil Aviation Authority) re-assume Airspace control authority responsibilities by 2010. In addition to personnel to perform the Air Traffic Control function, improvements in the country's air traffic management facilities and plans are required.

**H. Communication System and Rehabilitation of Infrastructure:** The current communication system has undergone some rehabilitation but further improvements especially at regional airports are required to provide for improved communication and safety.

**I. Rehabilitation of Rescue and Fire System:** The rescue and fire system is not standard in all airports. The World Bank has purchased fire extinguishing vehicles for Kabul International Airport. From the U.S., Baltimore, Maryland has granted two rescue airplanes as well as fire extinguishing vehicles to Afghanistan but managing of delivery of the equipment has been difficult. These vehicles will be sent to Mazar-i-Sharif. Training in rescue and fire extinguishing aspects should be provided so that a good capacity is built. It is vital to have rescue and fire extinguishing vehicles in the airport.

**J. Financial Management:** A transparent financial management system is key to ensure fair and effective fee and taxes collection at airports. An improved system is required that is in compliance with ICAO and the ICAO treaty signed by the GOA. This should be incorporated into the Transport Sector Plan that will be developed by end 2008.

## Railways

Railway links in Afghanistan are critical to Afghanistan's infrastructure and economic development because bulk commodities (such as fuel) are brought to Afghanistan's border by rail, then transhipped to truck for movement within the country. Transport costs of bulk commodities over long distances are typically cheaper by rail than road.

However, by end 2009, it is a priority to build or strengthen intermodal loading and unloading stations at all railheads to lower the costs of loading and unloading freight being moved between international rail shipments and truck

shipments within the country. One of these transhipment points is at Hazareh Toghay (in Afghanistan, opposite from the Uzbek town of Termez). Another rail line enters Afghanistan at Torghundi, just across the Turkmenistan border.

There are proposals to construct three new railway links into Afghanistan. One from the Pakistan border at Chaman to Kandahar (110 km, \$110.13 million; one from Sangan in Iran to Herat (207 km, \$323 million) and the third from Hazareh Toghay in Afghanistan, opposite from the Uzbek town of Termiz, to Mazar e Sharif (approximately 65 km, \$ 207 million). Rail and road investment must be considered together.

The Kazak and the PRC Governments have made overtures to the GOA regarding new rail lines to exploit the deposits of copper, coal, and iron ore. The GOA will conduct its own new feasibility studies of possible new rail lines, and together with estimates of the value of mining Afghanistan's resources on an annual basis, will be able to negotiate a better set of commercial packages. Several other rail lines will also be considered by the GOA, after completing new independent feasibility studies.

### Traffic Regulations and Safety

As the number of people and distance driven increases on the highways each year, without significant improvements in highway safety, the number of fatalities and injuries will also increase. Ensuring that it is safe to travel on the highways is a guiding principle throughout all of our programs and activities. The Transport sector agencies will continually improve road safety.

**Objectives:** Reduce the number of road-related fatalities and injuries:

- 20% reduction in the number of road-related fatalities in the next 5 years.
- 20% reduction in the number of road-related serious injuries in the next 5 years.

### Strategies

Road safety is a high priority, with more than 431 Afghans killed and more than 588 injured in motor vehicle crashes on rehabilitated roads each year, and these estimates likely seriously underestimate the number of injuries and fatalities. The transport sector needs to focus safety programs on high risk areas through technical assistance, research, training, data analysis and public information as well as through compliance, education and enforcement of national motor carrier safety requirements. Further, the transport sector needs to provide resources for infrastructure and system improvements to enhance safety such as highway crossings. Improving highway safety also reduces the economic costs of transportation. To meet its Goals to continually improve highway safety, even as travel increases, the transport sector's key strategies in road safety include the following:

- **Promoting Safety Management Processes:** In partnership with the road community, the transport agencies will facilitate implementation of comprehensive safety management processes with the GOA and the commercial transportation industry. Safety management processes will bring together, in a coordinated approach, the stakeholders affecting road safety, including road design, operation and enforcement agencies, the motor carrier industry, safety advocacy groups and others. The transport agencies will work with partners/donors and stakeholders to develop information and analysis systems to better identify the causes of crashes and develop crash avoidance programs to reduce or eliminate crashes. The transport agencies will identify and share best practices in design and operation of safe roadways to reduce the risks and severity of crashes. The transport agencies will work with its partners/donors to implement special programs to increase involvement of communities and citizens in identifying and implementing safety practices. Through these initiatives, the transport agencies will ensure government agencies; the public, communities and businesses are aware of safety countermeasures and best practices and are able to

apply them throughout every level of road system design, construction, operation and use.

- **Deploying Safety Technologies on the Highways:** The transport agencies will identify and promote the deployment of safety technology with particular emphasis on technologies addressing high priority areas, including run-off-road and pedestrian and bicycle incidents.
- **Focusing on Commercial Vehicle and Driver Safety:** The transport agencies will promote safe driving practices in the vicinity of large trucks; build partnerships to improve motor carrier safety and performance of commercial motor vehicles and drivers; target enforcement on the highest-risk motor carriers, and identify and deploy new technologies to enhance the safety performance and productivity of the motor carrier industry.
- **Focusing on Human Behaviour:** At the headquarters and in regional offices, the transport agencies will employ its resources to work on educational and enforcement activities designed to change human behaviour while using the roadway environment. All the modal administrations will join in such activities that increase the use of seat belts and reduce the number of red light running crashes. These activities will be accomplished in partnership with departmental leadership from Ministry of Internal Affairs.
- **Licensing, Permitting, and Vehicle Inspections:** Now under the purview of MOI, this function must be made more effective, serve to protect the public from unsafe drivers and vehicles, and also serve as a transparent source of revenue.

## RESEARCH AND TECHNOLOGY TRANSFER

Investment in research, data collection and technology transfer from other countries to Afghanistan is critical if the transport sector is to be developed to promote growth and reduce poverty. Monitoring, data collection and evaluation for evidence-based decision-making must be dramatically improved for good planning. Detailed road inventory data; data on pavement structure and condition; traffic volume, loadings and accidents by vehicle type; costs, expenditures, budgets and revenues; inventory of active projects and their descriptions and budget; and inventory of material on hand and equipment are all required for planning and for informed decision making. Analogous information must be collected for airports. Information regarding network details, traffic and axle loads, costs, and road conditions are necessary for planning and budgeting for road operation and maintenance. Such data facilitate determination of physical condition, safety, level of service, and efficiency of operation of the road network. These data are, therefore, necessary for providing the basis for management decisions. At this time no ministry involved in the sector is capable of the needed planning, or has a comprehensive database or a comprehensive system in place to collect this required data. Further, strengthening the planning capacity of ministry staff for road transport, airports, and rail functions is essential so that the ministry staff can perform feasibility studies, Masterplanning, and multi-modal planning, as well as asset management planning to international standards.



## CHAPTER 4

# CROSS CUTTING AND OTHER SECTOR RELATED ISSUES

### CROSS CUTTING ISSUES

The rehabilitated transport sector will provide opportunities for all qualified personnel regardless of gender, and promote gender equity in line with ANDS Goals.

- Environmental regulation including the requirement to follow a proper environmental management plan and covering noise and air pollution will become increasingly important as aircraft and vehicle traffic increases. Sewage handling such as a septic system including leach field capable of supporting all planned facilities is part of each rehabilitation project.
- Environmental impact assessments will be prepared and as required environmental management plans will be prepared and implemented in accord with the Afghan Environmental Law for all construction, maintenance, and rehabilitation works for roads, rail, and airport works.

Fuel and other petroleum products used by all modes of transport must be clean in order to meet Afghan environmental standards;

Lower the negative emissions of all vehicles, especially old vehicles, including aircraft;

Increased access to effective transportation will create additional jobs in the private sector and will serve to reduce poverty. Rehabilitated transport operations across the country will require more transport professionals. These new better paying jobs will contribute to the building of a legitimate

economy and will provide incentive to young people to seek an education. Better pay and professional training and stiff penalties for corrupt acts will reduce the appeal of corruption.

Numerous official and private sources make it clear that that corruption inflates the numerous road user fees by a factor of 15. This occurs at all points where such fees are collected, including the sale of the stickers for the toll roads. Thus, one of the few sectors that is actually functioning in Afghanistan is being choked by numerous and excessive road user fees collected by ministries that do not coordinate their road user fees. The corruption that goes along with these fees has undermined the peoples' trust in the government, according to a number of sources. To reduce corruption, these fees must be simplified, reduced in number, and lowered from their current high levels.

Increased security infrastructure at airports and better qualified security personnel will contribute to increased detection of narcotics smuggling.

Increased number of pull-offs for narcotics checks by the police will be planned in consultation with local police and the MOI.

- Enhanced transportation networks and lower user fees will greatly contribute to increased trade and provide people with greater ease of travel. This process will help build relationships both social and commercial which will reduce isolation and greatly

- increase positive interaction between regions.
- Institutional reforms are required so that transport in the provinces and municipalities is improved. This should be done, as proposed in this strategy, to give the largest amount of autonomy to local areas, but with the central government in a strong position to provide technical and financial assistance.

While the sector strategy emphasizes gender awareness, and participation of women, additional specific programs are needed. These include: special courses on driving will be organized for women. Women drivers will be contracted as instructors, so that other women are encouraged to join the course. Women are to be encouraged to join the private sector firms managing the public transport systems as drivers, bus conductors and supervisors.

By improving access to the treatment centres discussed below, the strategy will assist reaching the counter-narcotics Goals. The Ministry of Counter-Narcotic's (MCN's) goal is to reduce the demand for drugs, offer drug users treatment and reduce the harm caused by drug use. A comprehensive and well-coordinated network of drug treatment, rehabilitation, and after-care and harm-reduction service centres will be established and maintained in all provinces, including 10 residential treatment centres and 34 community-based treatment services.

By improving access to markets and lowering the costs of transporting farm inputs, the strategy will strongly support the Alternative Livelihoods Programs of the MCN. The MCN's program goal is to strengthen and diversify alternative livelihoods that free farmers and other rural workers from dependence on poppy cultivation. By involving other ministries and adopting a corridor development program this should help reach this ANDS goal.

The strategy will assist the MCN in reducing the flow of narcotics across borders. By improving access to all border crossings, the strategy will promote national and regional cooperation to

disrupt the flow of illicit drugs and precursor materials across borders in cooperation with Customs and the MCN.

## SECTOR RELATED ISSUES

As the various government agencies involved in the Transport Sector start shedding their operational functions and move to a streamlined regulatory role, this will create increased opportunities for private sector involvement. The move towards privatization of Ariana Airlines, the Kamaz Freight Agencies and the Millie Bus Agency will stimulate interest in these services from the private sector to carry on these services. Given current limited in country capability to cope with the increasing growth of these services, it will be important to ensure that the country presents a stable and well regulated environment to stimulate foreign investment to meet the demand. This will require the passage of the mortgage law and other laws protecting the rights of Afghan and foreign investors.

For the growth of the private sector transport contracting industry, the following must be solved:

- Lack of access to credit;
- Lack of a bonding industry; and
- Lack of an insurance industry.

For credit, the passage of the mortgage law will create a better environment for lending because the law gives lenders protections that are required for a healthy financial sector. For bonding and the insurance industries to develop, again specific laws and enabling legislation and regulations are required.

### Coordination and Effectiveness

**The GOA:** The current organizational structure is dominated by MPW; but MOTCA, MRRD, and to a lesser extent MOI, MOCI, MOFA, MOF, MOUD, Kabul Municipality, and the municipal and provincial governments are all involved in setting transport policy, improving infrastructure,

and setting or collecting road user fees. This leads to uncoordinated activities and a lack of accountability. Most of these ministries have field offices, usually more than one per province. Such duplication of transport-related branch offices is costly, and due to a lack of capacity, most branch offices are unable to deliver local services.

**The International Community:** The donor community also faces serious coordination and effectiveness problems. Activities between donors, ISAF, and the Provincial Reconstruction Teams lack a system through which they can coordinate closely on a regular basis. The coordination is improving, and the main infrastructure for the ring road is nearly complete due primarily to the donors' efforts. The extent of the donors' coordination reaches only the MPW, thus excluding the other ministries that are involved in the sector.

### Risk Assessment

The risks to the goals and outcomes of the Strategy are high. The risks most easily controlled are those of donor coordination and the coordination and reforms required by the central government. Moving to an integrated management approach for the sector from Kabul and then devolving authority to the provincial and municipal governments is a high risk venture, but absolutely necessary if the Strategy is to succeed.

To improve the transport sector, closer collaboration between all actors in the sector is required due to a deteriorating security situation. The Afghan Military, ISAF, and the US Military must be brought into the planning and execution of transport projects more closely than before. This means delays in separating military from civilian management of air facilities and implementing road improvement projects.

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## **ANNEX I: TRANSPORT SECTOR STRATEGY ACTION PLAN**

PILLAR : INFRASTRUCTURE		SECTOR : TRANSPORT		Expected Outcomes	Policy Actions and Activities	Category	Time frame	Responsible Agencies
<b>ROAD TRANSPORT</b>				Improved connectivity through out Afghanistan and to the foreign destinations within the region.	Massive road rehabilitation, improvement and maintenance programs. (Ring Roads/Regional highways)	Development/ RC Cross Cutting Issues	1388-1392 (2009-2013)	MPW
				Massive road rehabilitation, improvement and maintenance programs. (Priority: 5,334 Km) (National Highways/Provincial Roads)	Development	Development	1388-1392 (2009-2013)	MRRD, MPW
				Massive road rehabilitation, improvement and maintenance programs (with its entire infrastructure including drainage, walkways and street lighting system for urban roads) (Rural Roads and Urban Roads - around 3460 Km) (Priority: 6,290Km Rural roads)	Development	Development	1388-1392 (2009-2013)	MRRD, MPW, MoUD, Municipalities
				The road and air infrastructure will be built and maintained to a higher quality, giving road users lower costs. Whereas, the Feasibility Study of the railway links will be done.	Development	Development	1389-1392 (2010-2013)	MPW, MRRD, MoTCA
				Rationalize road user fees (one fee) and use funds to establish a road fund that manages all road improvement programs.	Institution Building	Development	1388-1390 (2009-2011)	MPW, MoF
				Lower road user fees by 75%	Development	Development	1388-1389 (2009-2010)	MPW, MoTCA, MoF, MoFA, MoCI
				Subsidy to private bus operators to implement the policy on promoting equitable access to transportation	Development/ Gender Cross Cutting Issues	Development	1387-1389 (2008-2010)	MoTCA
				Massive road rehabilitation, improvement and maintenance programs (with its entire infrastructure including drainage, walkways and street lighting system for urban roads). (Urban Roads around 3460 Km with all basic infrastructure)	Development	Development	1388-1392 (2009-2013)	MUD, Provincial Municipalities, MPW, MRRD
				Improve Public Transport Provision in Urban and inter-provincial (34 provinces) (with having bus and truck terminals in all the provincial centers)	Development	Development	1388-1392 (2009-2013)	MoTCA, MPW, KM, MoUD, Provincial Municipalities
				Pass enabling legislation so that the environmental law has regulations that can be enforced	Legislation	Legislation	1388-1392 (2009-2013)	Transport sector line ministries and institutions
				Improved air quality.				

**PILLAR : INFRASTRUCTURE**

SECTOR : TRANSPORT		Policy Actions and Activities		Category	Time frame	Responsible Agencies
Expected Outcomes	CIVIL AVIATION	Policy Actions and Activities	Category	Time frame	Responsible Agencies	
Increased domestic and international passengers and freight traffic.	<p>Massive reconstruction program (Kabul Int'l Airport, Herat in compliance with ICAO and IATA requirements)</p> <p>Massive reconstruction program (Mazar-i-Sharif, Jalalabad, Kandahar airports)</p> <p>Massive reconstruction program (Seven Other Domestic airports)</p> <p>More air transport service providers enter the Afghan market— requires an enabling environment for businesses</p>	<p>Development</p> <p>Development</p> <p>Development</p> <p>Legislation</p>	<p>1387-1390 (2008-2011)</p> <p>1387-1390 (2008-2011)</p> <p>1387-1390 (2008-2011)</p> <p>1387-1390 (2008-2011)</p>	<p>MoTCA</p> <p>MoTCA</p> <p>MoTCA</p> <p>MoTCA</p>		
All stakeholders are well informed about the viability of air transport systems.	Improved governance of civil aviation sector.	Institutional reform programs and a reduction in the requirement of ISAF to use air facilities (Create a new Civil Aviation Authority (CAA), and restore control of Afghan airspace to the Civil Aviation Authority.)	Institution Building	1387-1390 (2008-2011)	MoTCA, MoF	
<b>OVERALL TRANSPORT SECTOR</b>		<p>Massive capacity building programs</p> <p>Capacity building specially in the areas of project monitoring and contract management</p> <ul style="list-style-type: none"> <li>• Completing the regulatory framework- developing the regulatory framework for the implementation of the Procurement law, developing roads standards and codes, land acquisition;</li> <li>• Establishing an effective external scrutiny system;</li> <li>• Conducting VCA (Vehicle type approval) and developing mitigation plans in the sector;</li> <li>• Targeted anti corruption training for the responsible anti-corruption agencies to effectively investigate and report on corruption;</li> <li>• Developing code of conducts and enforcement mechanisms</li> <li>• Increasing wages of the civil service</li> </ul>	Institution Building/ AC Cross Cutting Issues	1389-1392 (2010-2013)	<p>MPW, MoTCA, MRRD, MoUD, MoF, IDLG, MoI, KM</p>	
Improved connectivity through out Afghanistan and to the foreign destinations within the region.	After a study of international standards, adopt a set of standards that are compatible with Afghanistan's neighbors.	Developing code of conducts and enforcement mechanisms	Institution Building	1388-1389 (2009-2010)	MPW, MRRD, KM, MoUD, IDLG	

**PILLAR : INFRASTRUCTURE**

SECTOR : TRANSPORT	Expected Outcomes	Policy Actions and Activities	Category	Time frame	Responsible Agencies
		Establish a Transport Sector Inter-ministerial Working Group to determine the lines of authority between the transportation-related governance institutions and the roles and responsibilities of each institution.	Institution Building	1387-1388 (2008-2009)	MPW, MoTCA, MRRD, MoUD, MoF, IDLG, MoI, KM
		Create an inter-ministerial costing committee to work with the Ministry of Finance to cost out annually programs that take five to fifteen years to implement	Institution Building	1387-1388 (2008-2009)	MPW, MoTCA, MRRD, KM, MoI, IDLG, MoF, MoUD
		Institute a substantial capacity building program, including a road safety program. (Improve the MoI's capacity to conduct drivers' licensing tests, vehicle safety inspections and enforce traffic flow regulations.)	Institution Building	1387-1389 (2008-2010)	MoI
		Develop the Traffic Management Bureau form the MoI to the Provinces and Municipalities through the new Independent Directorate of Local Governance	Institution Building	1388-1389 (2009-2010)	MoI, IDLG
		Institutional reforms put in place to simplify governance of the sector, including devolution of authority to the Provinces and Municipalities.	Institution Building	1389-1390 (2010-2011)	Transport sector line ministries and institutions
		Cost savings will be realized by the governing institutions and thus there will be Government budget savings.	Institution Building	1388-1389 (2009-2010)	Transport sector line ministries and institutions
		Put in place systems to improve transparency in all functions of the government in the transport sector	Institution Building	1389-1392 (2010-2013)	Transport sector line ministries and institutions
		Give more autonomy to local communities and the Provincial Governments to determine how and when rural roads are improved, as well as provincial roads	Institution Building	1388-1389 (2009-2010)	MRRD, IDLG
		Improve coordination between transport sector governance institutions, the MoI and ISAF so that the transport sector can better develop in conflict-affected areas of the country as soon as possible	Institution Building	1388-1390 (2009-2011)	Transport sector line ministries and institutions
		Increase public sector salaries in tandem with increases in capacity	Institution Building	1387-1389 (2008-2010)	GoA and Transport sector line ministries and institutions

**PILLAR : INFRASTRUCTURE**

**SECTOR : TRANSPORT**

Expected Outcomes	Policy Actions and Activities	Category	Time frame	Responsible Agencies
	Annual assessment of data collected and databases maintained and updated in all planning departments, including municipalities, mapping progress against the goal of “best practices” data collection and databases for transport sector planning, with necessary funding mechanisms and capacity building programs in place and operational	Institution Building	1388-1392 (2009-2013)	Transport sector line ministries and institutions
	Strengthening the planning capacity of ministry staff for road transport, airports, and rail functions so that the ministry staff can perform feasibility studies, Master planning, and multimodal planning, as well as asset management planning, to international standards	Institution Building	1389-1392 (2010-2013)	Transport sector line ministries and institutions
	Pass legislation and enabling regulations to allow transport sector governing institutions to competitively engage and manage private contractors, private contract supervision engineers to maintain roads, airports and other transport infrastructure, also regulations that protect the normal market rights of those contractors.	Legislation	1389-1392 (2010-2013)	Office of the President, the National Assembly, MoTCA, MPW, MoI, MoF, MRRD, IDLG and MoUD
Business environment for private sector development improved to create jobs and reduce poverty.	Pass any required legislation and enabling regulations so that private and public sector rights are protected in contract law, enforcement, and penalties for violation.	Legislation	1387-1389 (2008-2010)	Office of the President, the National Assembly, MoCI, MoJ and MoF
	Reform laws relating to determining “fair market value” of lands acquisition/purchased for transport sector improvements	Legislation	1389-1392 (2010-2013)	MPW, MoF, MRRD, MoUD, IDLG, Office of President, National Assembly, MoJ
	Develop and put in place an axle-load limit violation fees and an enforcement system	Legislation	1387-1388 (2008-2009)	MPW, MoF
	Pass any required legislation and enabling regulations so that private sector insurance, auditing, and bonding industries can develop, and foreign insurance firms can operate in Afghanistan, protecting rights of the companies and the public, with penalties for violations.	Legislation	1387-1390 (2008-2011)	Office of the President, the National Assembly, MoCI, MoJ and MoF

PILLAR : INFRASTRUCTURE SECTOR : TRANSPORT	
Expected Outcomes	Policy Actions and Activities
Improved trade, transit documentation procedures	Legislation / RC Cross Cutting Issues
Introduce and checks and balances for illicit transpiration of human and commodities like precursors, drugs, etc.	Legislation and Development/ CN Cross Cutting Issues

## ANNEX II: TRANSPORT SECTOR STRATEGY MONITORING MATRIX

PILLAR: INFRASTRUCTURE SECTOR: TRANSPORT	Expected Outcomes	Indicators	Baseline	Targets
<b>ROAD TRANSPORT</b>				
Improved connectivity through out Afghanistan and to the foreign destinations within the region.	% of target 3263 Km of regional highways or roads to the neighboring countries fully upgraded and rehabilitated.	2236 km has been rehabilitated	Fully upgraded and maintained ring road and roads to neighboring countries by March 2009.	
	% of all villages connected by all-weather roads	Target has achieved 65% (Out of 38,000 villages 9,954 villages have access to rural roads)	40 % of all villages to be connected by all-weather roads to the national road system by the end of 2010.	
	Having updated transport policies/regulation and improved transport management system to enforce and implement the states law and regulations related to the transport sector.	Outdated policies and regulations which need to be improved / Although that some management improvement have been in place	Improved and updated transport management by 2011	
	% of all roads in municipalities (i.e., cities) improved to a good standard (with having bus and truck terminals in all the provincial centers).	15-20 % roads are in good condition with some improved services	70% of all roads in municipalities (i.e., cities) are improved to a good standard by the end of 2011.	
	% of roads in maintainable condition that receive regular maintenance	out of 2236 km of rehabilitated regional highways, 1024 km receives regular maintenance	Fiscally sustainable system for roads maintenance by End 2008	

PILLAR: INFRASTRUCTURE			
SECTOR: TRANSPORT			
Expected Outcomes	Indicators	Baseline	Targets
	Index on the progress of putting a fiscally sustainable road maintenance system in place by End 2008 and its coverage	40%	A fiscally sustainable road maintenance system by End 2008.
Lower road user costs	Improved sidewalks and shoulders (km) (along with improved and connected drainage system) Index on the rationalization of road user costs.	15-20 % roads are in good condition with some improved services 0%	Improved sidewalks and shoulders by 2010 Lower road user fees by 75% by end 2008. Less journey time by end 2012
Less journey time lost due to congestion	Index on the improvement of Public Transport Provision and roads in urban areas and inter-provinces.	TBD	
Improved air quality.	Index on the progress of the process of enforcing the environmental law in transport sector.	TBD	Environmental protection from air pollution by End of 2009
<b>CIVIL AVIATION</b>			
Increased domestic and international passengers and freight traffic by air.	Index on the progress of the process of completion of International Civil Aviation Organization (ICAO) compliance for Kabul and Herat Airports.	40% Kabul 0% Heart	Kabul International Airport and Herat Airport are in compliance with the International Civil Aviation Organization's (ICAO) and the International Air Transport Association's (IATA's) requirements by March 2011.
		50% (KDH) 0% (IBD) 10% (MZR)	Mazar-i-Sharif, Jalalabad and Kandahar will be upgraded with runway repairs, air navigation, fire and rescue, and communications equipment by March 2011.
	Index on the progress of the process of up gradation of Kandhar, Jalalabad and Mazar-e-Sharif Airports with runway repairs, air navigation, fire and rescue and communication equipment.	50% Qalainaw 30% Maimana 0% Faizabad 0% Chaghcharan 0% Zaranj 0% Lashkar Gah 0% Tarin Kowt	Seven other domestic airports will be upgraded to facilitate domestic air transportation by March 2011.
	# of International airports constructed / rehabilitated	0	2 (End 2010)

PILLAR: INFRASTRUCTURE			
SECTOR: TRANSPORT			
Expected Outcomes	Indicators	Baseline	Targets
	# of domestic airports constructed/rehabilitated	The feasibility studies for the 10 domestic airports have been done.	10 (2013)
	Air travel price index comparable to international standards.	For have Airport services cost comparable with international standards ,ICAO personnel is developing a tariff plan for various component of airport services on the basis of the Airport master Planning study report of 2004.	Air transport services and costs will be increasingly competitive with international market standards and rates by March 2011.
Improved governance of civil aviation sector.	Index on the progress of Institutional reform programs and a reduction in the requirement of ISAF to use air facilities (Create a new Civil Aviation Authority (CAA), and restore control of Afghan airspace to the Civil Aviation Authority.) Index on the progress of massive capacity building programs in the civil aviation sector.	5%	Improved governance in civil aviation sector by end 2011
		To enhance capacity of the Ministry, a training programme has been finalized to the tune of 640000. ADB is funding the project.40 students will be trained under the programme. All the programs will be conducted in 2008. 30 Fire Fighter have been trained in Oman and another 17 other personnel will be trained in 2008. Under the Transition Plan also for key functions such as ATC, CNS and Fire Fighting on the job trainings will be provided by ICAO experts. The identification & the number of the beneficiaries will be finalized by March 2008. Further 20 students was sent to FAA academy in U.S.A and 20 others will be sent by end of 2008.	By end-2013, transport sector capacity will be enhanced
<b>OVERALL TRANSPORT SECTOR</b>			
Improved Governance in the Transport Sector	Index on the progress of putting institutional mechanisms in place for better governance of the Transport Sector.	Inter-Ministerial Working Group established. TOR under review	Governance of Road Transport sector progressively improved by by 2013
Business environment for private sector development improved to create jobs and reduce poverty.	Index on the progress of passing enabling legislations and enabling regulations for efficient working of the transport sector and various players therein.	TBD	Improved business environment for private sector by 2012
	% increase in amount of taxes and duties collected through cross border trade	TBD	TBD

## ANNEX III: TRANSPORT SECTOR STRATEGY PROGRAMS AND PROJECTS LIST

S/N	AFG Budget Ref	Programs / Project title	List of Programs and Projects (Transport Sector)			Project Duration			Breakdown of Requirements (US\$ Millions)			Total Requirement (US\$ Million)	Total Funding (US\$ Million)	Gap (US\$ Million)	Major Donors	Core External	Responsible Agency
			Start	End	1387	1388	1389	1390	1391	1392+							
1	AFG/0648701	Construction of Karte- Ariana Road to Kabul University through Gardana Sakhi	1385		2.000						2.00	2.000	0.000	AFG	Core	Kabul Municipality	
2	AFG/0730601	Construction of Chelsooton Road (from Pul-e-Arial to Oasr-e-Chehsooton) 5.5km long and 30m wide	1386		1.500						1.50	1.500	0.000	JPN	Core	Kabul Municipality	
3	AFG/0804801	Construction of Roads on North, south side of Kabul River of Kabul City	1387		2.930	2.93					5.86	0.000	5.860		Core	Kabul Municipality	
4	AFG/0804901	Construction of Road from Ibne Sena to Baghe-Kazi & Chamane Huzuri, Kabul City	1387		2.100						2.10	0.000	2.100		Core	Kabul Municipality	
5	AFG/0805101	Construction of Rahman Mena Up to Part E of the Project Road, Kabul City	1387		1.500	1.75					3.25	0.000	3.250		Core	Kabul Municipality	
6	AFG/0805201	Construction of Connecting Road between Badam Bagh Road & Continental Road Kabul City	1387		0.500						0.50	0.000	0.500		Core	Kabul Municipality	
7	AFG/0805601	Construction of 3 bridges on Kabul River.	1387		3.000						3.00	0.000	3.000		Core	Kabul Municipality	

**List of Programs and Projects (Transport Sector)**

S/N	AFG Budget Ref	Programs / Project title	Project Duration		Breakdown of Requirements (US\$ Millions)				Total Requirement (US\$ Million)	Total Funding (US\$ Million)	Gap (US\$ Million)	Major Donors	Core External	Responsible Agency
			Start	End	1387	1388	1389	1390						
8	AFG/0813401	Construction of Kart-e-Mamureen to Cargha Road	1387		2.200	2.20			4.40	0.000	4.400		Core	K a b u l Municipality
9	AFG/0301301	Rehabilitation of Pulkhumri- Mazar-e-Sharif - Naibabad-Hairatan Road (243 kms)	1384	1388	18.000	32.00			50.00	18.000	32.000	ADB, AFG	Core	MPW
10	AFG/0301401	Rehabilitation - Asphalt of Doshi to Puli-khumri Road	1387	1388	6.000	14.00			20.00	6.000	14.000	ISDB	Core	MPW
11	AFG/0301801	Rehabilitation of Mazar-e-Sharif - Sheberghan - Ankhoy Road (197 kms)	1383		0.450				0.45	0.450	0.000	ADB	Core	MPW
12	AFG/0301901	Asphalt of Andkhoy-Qaissar Road (210 kms)	1383		27.900				27.90	27.900	0.000	ADB, AFG	Core	MPW
13	AFG/0302301	Super Corridor: Asphalt of Andkhoy - Aquina Road (36 kms)	1387	1388	6.000	14.00			20.00	10.000	10.000	ISDB	Core	MPW
14	AFG/0302601	Super Corridor: Rehabilitation of Kandahar - Spinboldak Road (101 kms)	1382		2.500				2.50	2.500	0.000	ADB	Core	MPW
15	AFG/0302901	National Highway: Rehabilitation of Herat- Torgundi Road (119 kms)	1382		18.000				18.00	18.000	0.000	AFG	Core	MPW
16	AFG/0326001	Construction of Bamian - Kabul Road (140 kms)	1382		15.000	14.60			29.60	15.000	14.600	ITA	Core	MPW
17	AFG/0341202	National Rural Access Program (NRAP) (MOPW)	1383		34.690	43.65	80.00		158.34	31.000	127.339	ARTF, WB	Core	MPW

**List of Programs and Projects (Transport Sector)**

S/N	AFG Budget Ref	Programs / Project title	Project Duration		Breakdown of Requirements (US\$ Millions)				Total Requirement (US\$ Million)	Total Funding (US\$ Million)	Gap (US\$ Million)	Major Donors	Core External	Responsible Agency	
			Start	End	1387	1388	1389	1390							
18	AFG/ 0566301	Construction of Mazar Sharif- Dar-e-Souf Road 140 Km	1384		30,000	102.00			132.00	30,000	102.000	ADB	Core	MPW	
19	AFG/ 0566302	Construction of Bamyan - Yakawlang Road 99Km	1387		21,500	36.00			57.50	21.500	36,000	ADB	Core	MPW	
20	AFG/ 0668101	Design and Construction of Bala Morghab- Laram road (14.3 KM)	1387	1389	15,000	51.50	41.20		107.70	15,000	92,700	ADB	Core	MPW	
21	AFG/ 0671801	Construction of Armalak - Laram Road (50Km)	1387	1389	9,000	29.00			38.00	9,000	29,000	SADF	Core	MPW	
22	AFG/ 0709401	Construction (DBST) of Sayed Abad Unkhai Pass 19Km	1384		1,620				1.62	1,620	0.000	AFG	Core	MPW	
23	AFG/ 0709601	Construction of Taloqan - Ay-Khanum - Rostaq Road 148Km (DBST)	1385		8,800	6.00			14.80	8,800	6,000	AFG	Core	MPW	
24	AFG/ 0711601	Construction DBST of Sayeed Abad, Chak, Daimer daad and Bahsod (75 Km)	1385		5,500				5.50	5,500	0.000	AFG	Core	MPW	
		Study and Design of North- South Corridor (Dar-e-Souf - Bamyan 1st Part) and (Yakawlang - Teren Koot 2nd Part) 553Km													
25	AFG/ 0808501	Construction of Faizabad - Eshkashem Road 150 Km ( Faizabad-Baharak 43 Km 1st Phase)	1387	1392	1,250	3.75			5.00	0.000	5,000		Core	MPW	
26	AFG/ 0808601		1387	1390	5,000	15.00	10.00	72.00		102.00	0.000		102,000	Core	MPW

**List of Programs and Projects (Transport Sector)**

S/N	AFG Budget Ref	Programs / Project title	Project Duration		Breakdown of Requirements (US\$ Millions)				Total Requirement (US\$ Million)	Total Funding (US\$ Million)	Gap (US\$ Million)	Major Donors	Core External	Responsible Agency
			Start	End	1387	1388	1389	1390						
27	AFG/0808701	Construction of Jabul Saraj - Sorobi 101 Km	1387	1389	5.000	25.00	30.00		60.00	0.000	60.000		Core	MPW
28	AFG/0808801	Design of Kabul - Sorobi - Jalalabad Road (2nd Line) 150 Km	1387		1.000				1.00	0.000	1.000		Core	MPW
29	AFG/0808901	Construction of Kabul City Ring Road 160Km	1387	1390	2.000	50.00	50.00	98	200.00	0.000	200.000		Core	MPW
30	AFG/0809001	Construction of Provincial Office for Road Maintenance	1387		0.800				0.80	0.000	0.800		Core	MPW
31	AFG/0359901	Priority Rehabilitation of Kabul Airport	1381		8.200				8.20	0.000	8.200	AFG, WB	Core	MoTCA
32	AFG/0359903	Civil Aviation Transitional Plan from NATO to Government of Afghanistan	1384		12.000				12.00	12.000	0.000	AFG	Core	MoTCA
		Rehabilitation of Regional Airports (Faizabad, Bamyan, Cheghcheran, Maimana, Qala-e-Naw, Trin Kot, Lashkarga, Zarang)												
33	AFG/0469101		1383	1391	3.000	3.00	10.00		16.00	3.000	13.000	ADB, AFG	Core	MoTCA
34	AFG/0565501	Expansion & Modernizing of Hirat Airport	1384		5.000	10.00	10.00		25.00	0.000	25.000		Core	MoTCA
35	AFG/0567801	Expansion & Modernizing of Mazar-e-Sharif Airport	1384		5.000	15.00	10.00		30.00	0.000	30.000		Core	MoTCA
36	AFG/0643001	Training of Civil Aviation and Meteorological Experts	1385		0.500	11.25			11.75	0.500	11.250	AFG	Core	MoTCA

**List of Programs and Projects (Transport Sector)**

S/N	AFG Budget Ref	Programs / Project title	Project Duration		Breakdown of Requirements (US\$ Millions)			Total Requirement (US\$ Million)	Total Funding (US\$ Million)	Gap (US\$ Million)	Major Donors	Core External	Responsible Agency
			Start	End	1387	1388	1389						
37	AFG/ 0809101	Airport Master Plan for Kabul-Hirat-Mazar-Kandahar-Jalalabad	1387		1.000			1.00	0.000	1.000		Core	MoTCA
38	AFG/ 0809201	Security at Kabul International Airport	1387		5.000	4.00	3.00	12.00	0.000	12.000		Core	MoTCA
39	AFG/ 0809301	Operation and Maintenance in Kabul International Airport	1387		1.500	2.00	2.50	6.00	0.000	6.000		Core	MoTCA
40	AFG/ 0831901	Safety Oversight Capacity Building in Kabul Airport	1387		4.000	4.00	4.00	12.00	0.000	12.000		Core	MoTCA
41	AFG/ 0301601	Super Corridor: Rehabilitation of Kabul-Jalalabad-Torkhum (220 Kms)	1386		2.87	0.00	0.00	2.87	2.870	0.000	SIDA	External	MPW
42	AFG/ 0717901	Maintenance of Kabul-Jalalabad Road	1386		0.31	0.00	0.00	0.31	0.310	0.000	EC	External	MPW
43	AFG/ 0718101	Jalalabad Bypass Lot 1 - Road	1386		5.94	0.00	0.00	5.94	5.937	0.000	EC	External	MPW
44	AFG/ 0746501	Rehabilitation of Kabul Machinery Center	1386		3.50	0.00	0.00	3.50	3.500	0.000	JPN	External	MPW
45	AFG/ 0746601	Policy Adviser for Road Transport	1386		0.03	0.00	0.00	0.03	0.030	0.000	JPN	External	MPW
46	AFG/ 0788001	Maintenance of Jagdalak road	1386		0.04	0.03	0.00	0.08	0.080	0.000	EC	External	MPW
47	AFG/ 0816801	Construction of 218 km road from Zarantjo Delaram in Nimroz and Farah provinces	1387		54.80	0.00	0.00	54.80	54.800	0.000	IND	External	MPW
48	AFG/ 0827801	Roads Operation and Maintenance/capacity building	1387		10.00	0.00	0.00	10.00	10.000	0.000	USAID	External	MPW
49	AFG/ 0827901	Construction of Bamyan-Dushe Road	1387		50.00	0.00	0.00	50.00	50.000	0.000	USAID	External	MPW

**List of Programs and Projects (Transport Sector)**

S/N	AFG Budget Ref	Programs / Project title	Project Duration		Breakdown of Requirements (US\$ Millions)			Total Requirement (US\$ Million)	Total Funding (US\$ Million)	Gap (US\$ Million)	Major Donors	Core External	Responsible Agency		
			Start	End	1387	1388	1389								
50	AFG/ 0828001	Provincial Roads	1387		83.63	0.00	0.00			83.63	83.634	0.000	USAID	External	
51	AFG/ 0341201	National Rural Access Programme (NRAP)/National Emergency Employment Programme (NEEP) (MRRD).	1382		44.00	57.00	50.00			151.00	33.800	117.200	ARTF, EC, UK- DFID, WB	MRRD	
52	AFG/ 0757502	District Roads	1386		279.00	0.00				279.00	279.000	0.000	USAID	External	
53	AFG/ 0746301	Construction of Kabul International Airport Terminal Package-1	387		10.00	0.00	0.00			10.00	10.000	0.000	JPN	External	
54		Ankhoi-Qaisar-Balamughab	1387	1388	80.00					80.00	0.000	80.000		MPW	
55		Faizabad Ishkshim (160km)	1387	1390	25.00	25.00	50.00			150.00	0.000	150.000		MPW	
56		Construction of East West Corridor Heart-Cheghcheran-Gardan Dewar (675km)	1388	1392	50.00	50.00	100.0	100.0	400.00	0.000	400.000			MPW	
57		Construction of Kabul Jalalabad Highway (155km) (2nd Line)	1387	1389	25.00	25.00	50.0			100.00	0.000	100.000			MPW
58		Kunduz - Tashqurghan Road (103 Km)			60.00					60.00	0.000	60.000			MPW
59		Secondary Roads			150.00					150.00	0.000	150.000			MPW
60		Roads Maintenance			265.00					265.00	0.000	265.000			MPW
61		Other Roads (Including Contingencies for above mentioned road projects)	1388	1391	200.00	300.0	400.0			900.00	0.000	900.000			MPW
62		Railways	1388	1391	200.00	200.0	300.0	300.0	1,000.00	0.000	1,000.000				MPW

**List of Programs and Projects (Transport Sector)**

S/N	AFG Budget Ref	Programs / Project title	Project Duration				Breakdown of Requirements (US\$ Millions)				Total Requirement (US\$ Million)	Total Funding (US\$ Million)	Gap (US\$ Million)	Major Donors	Core External	Responsible Agency	
			Start	End	1387	1388	1389	1390	1391	1392+							
63		Rehabilitation and Equipping Kabul Int'l Airport (Remaining Parts)	1388	1391		30.00					30.00	0.000	30.000			MoTCA	
64		Kabul New Airport	1388	1391	25.00	25.0	50.0	50.0			150.00	0.000	150.000			MoTCA	
65		Mazari Sharif Airport (Phase 1and 2)	1388	1391	3.00	15.0	7.0	15.0	10.0	50.00	0.000	50.000				MoTCA	
66		Hirat Airport Rehabilitation and Expansion (Phase 1 and 2)	1388	1391	3.00	15.0	7.0	15.0	10.0	50.00	0.000	50.000				MoTCA	
67		Rehabilitation and Expansion of Kunduz Airport	1388	1391	7.00	15.0	8.0				30.00	0.000	30.000			MoTCA	
68		Construction of Jalalabad Airport (New)	1388	1391	5.00	20.0	25.0				50.00	0.000	50.000			MoTCA	
69		Security of Major Airports	1388	1391	4.00	6.0	8.0	10.0	12.0	40.00	0.000	40.000				MoTCA	
70		Airports Maintenance	1388	1391	1.50	3.0	4.0	5.0	6.5	20.00	0.000	20.000				MoTCA	
<b>Total:</b>					970.07	1,603.16	1,049.70	1,129.00	495.0	138.5	5,385.43	773.231	4,612.20				

## ANNEX IV: LIST OF PROVINCIAL PRIORITY PROJECTS (TRANSPORT SECTOR)

No.	Project Name	Project Location	Responsible agency	Project Duration (year) Start      End
1	Gravelling of road from centre of Charkoneh district up to villages (50 Km).	Balkh	MRRD	1387
2	Asphalting of road from Hairatan up to Kaldar a (77 km).	Balkh	MPW	1387
3	Asphalting of Balkh road up to Chamtal about (15 km).	Balkh	MPW	1387
4	Asphalting of Mazar e Sharif city ring road (60 km).	Balkh	MPW/IDLG	1387
5	Asphalting of Balkh road up to Bandar e Koloff (93 km)	Balkh	MPW	1387
6	Asphalting of Mazar e Sharif road up to Charkunit district. ( 42km).	Balkh	MPW	1387
7	Establishment of bus stops in Mazar e Sharif district. (8 bus stops).	Balkh	MoUD/ MoTCA/ IDLG	1387
8	Establishment of public bus station with parking in Mazar e Sharif city.	Balkh	MoUD/ MoTCA/ IDLG	1387
9	Construction of Tertiary roads from Tangi Murch in Burk to Hazar Qaq, in 43 Km and will be beneficial for 30000 families.	Bghlan	MRRD	1387
10	Construction of a bridge for vehicles in Pajman, Barfac district (25 metres).	Bghlan	MRRD	1388
11	Road construction from Baghlan Qadeem city to Abqul-i-Gardab (50 km, 60000 beneficiaries) (completed / MPW)	Bghlan	MPW	1387
12	Road construction from Nahrin district to Burk district (27 km, 50000 beneficiaries) (Ongoing/ MPW).	Bghlan	MPW	1387
13	Construction of Gorgan road (30 km, 20000 beneficiaries).	Bamyan	MPW/MRRD	1387
14	Road construction in Mullah Ghulaman & dasht-e- Essa Khan, in the centre of the province.	Bamyan	MPW	1388
15	Road asphalting from Centre of Bamyan until Dokani, for Milli Buses,In centre of the province	Bamyan	MPW	1388
16	Road construction from Shato Pass until Qonaq, Panjab & Waras districts.	Bamyan	MRRD	1388
17	Repair and gravel of road from Dandan Shikan pass to Hajar in Kahmard district (90Km).	Bamyan	MRRD	1387
18	Construction, repair and graveling of road from daga to Treich in Yakawlang district (100 km).	Bamyan	MRRD	1388
19	Costruction of Airport in Shibartoo. 6km	Bamyan	MoTCA	1388
20	Construction of Concrete bridge in centre of Panjab district. 30m	Bamyan	MRRD	1388
21	Construction of Faiz Abad Arghenchkhwa districts road (50km)	Badakhshan	MRRD	1388
22	Construction of Ring Road from Share Bozorg to Darwaz (270km) (circular road of Shar-e-Bozorg-Eshkashim-Shighnan-Mainee-Darwaz ha in total reaches to 400km among which 100km are rocks which will be consulted with Ministry accordingly)	Badakhshan	MPW/MRRD	1387
23	Construction of bridge at Faizabad on the Kohistan road.	Badakhshan	MPW/MRRD	1388
24	Road construction in Fakhor Gezab, Bery and Sartagab districts (55 km).	Daiikundi	MRRD	1387
25	Road construction in Qara Gharnj upat Zard Guljan Kliran district (26 km).	Daiikundi	MRRD	1387
26	Construction of secondary road from Nili to Qonaq passes (137 km).	Daiikundi	MRRD	1387
27	Construction of Mirgulam and Askan bridge (50m)	Daiikundi	MPW/MRRD	1387
28	Construction of Darai Khodi bridge (50m)	Daiikundi	MPW/MRRD	1387
29	Road construction from Pishok up to Ghor province. (80) Km.	Daiikundi	MPW	1391
30	Construction of bridge on Kijran river in Kijran district Zargulan village. (55m)	Daiikundi	MPW/MRRD	1388

No.	Project Name	Project Location	Responsible agency	Project Duration (year)	
				Start	End
31	Construction of bridge on the Helmand river in Sharistan district (60m)	Daikundi	MPW	1390	
32	Construction of bridge on Deh Aroos river in Ashtarai district.(60m)	Daikundi	MPW	1388	
33	Construction of bridge on Tamazan river in Kiti district.( 50m length)	Daikundi	MPW/MRRD	1388	
34	Construction of Hijdi Bridge in centre of province. Hijdi village.	Daikundi	MPW	1387	
35	Construction and rehabilitation of roads in Garziwan (50 km). (Has been surveyed by NRAP-UNOPS and should be investigated TBC)	Faryab	MoRR	1387	
36	Construction and graveling of road from Lalash up to Sari Hawoz (77km).	Faryab	MoRR	1387	
37	Construction of small bridges (300 in 10 districts of Jawzjan) 200000 beneficiaries.	Jawozjan	MRRD	1387	
38	Construction of road from Shibirghan up to Darzab. (200000 beneficiaries). (MRRD has worked at around 35km of this road and the remaining 64 is included in NRAP-88 plan of MoPW) (Ongoing/MRRD/NRAP))	Jawozjan	MPW	1387	
39	Asphalting of Road from Doab to Sorkh village. 20 km in Sorkhparsa district.	Parwan	MRRD/MPW	1387	
40	Construction of road for vehicles in Namakab village in Shinwari district.(10km)	Parwan	MRRD	1387	
41	Construction for Wolang road in Shikhali district.(10km)	Parwan	MRRD	1387	
42	Cosntruction of road for vehicles in Dahan e Kafshan in Shinwari district. 20km	Parwan	MRRD	1387	
43	Reconstruction of Road from Center of Sorkh Parsa district to Sarwarki and Oatundur	Parwan	MRRD	1387	
44	Graveling roads and construction of culverts according to the master plan of the city, 200 Km totally.	Parwan	MRRD	1387	
45	Construction of Ghorband road, from Matak to to kotal e shibar 150 km totally (Ongoing/PRT)	Parwan	MRRD	1387	
46	Asphalt of Do Aab to Dara Sorkh Road	Parwan	MPW/MRRD	1387	
47	Construction of secondary road of Wolang in Shikhali	Parwan	MRRD	1387	
48	Construction of Motor road in Dara Namak Aab district of Shinwar	Parwan	MRRD	1387	
49	Road construction from Jabulsaraj up to Esfalo (about 28 km)	Panjshir	MRRD	1387	
50	Road reconstruction from Dara, Sangeejan up to Shomor Ghalfa (about 3 km).	Panjshir	MRRD	1387	
51	Asphalting of Hesa Awal road from Barmark to Khinj. (About 18 km).	Panjshir	MPW/MRRD	1387	
52	Costrunction of bridge in Rokha 16 km	Panjshir	MRRD	1387	
53	Reconstrucion of main road from Paryan Bamwarda up to Paritab (50 km)	Panjshir	MRRD	1387	
54	Construction of bridge in Shaliz Parian 15m.	Panjshir	MRRD	1387	
55	Construction of Pishgho Bridge for vehicles 40m	Panjshir	MRRD	1387	
56	Asphalt of the roads of the two sides of the river in the centre the province, in 3 km.	Ghazni	MPW/MRRD	1387	
57	Graveling of Zankhan road, in 30 km,	Ghazni	MRRD	1388	
58	Road construction from Rawza to Esfandi village in 15 km,	Ghazni	MPW/MRRD	1387	
59	Asphalt and reconstruction of internal roads of the province, in 80 km (Ongoing)	Ghazni	MPW/MRRD	1387	
60	Reconstruction of road from centre of Ghazni up to Nahor district. (98 km 7km/ c) Harkhan & Mawaja 12km d) Aband Gailan 20km e) Nawor & Kotle (pass) 2 km f) From Company to Char Qalq 8km 7000 beneficiaries	Ghazni	MPW/MRRD	1387	
61	Reconstruction & graveling of 34 km of roads a)Gailan Aghukhan landa 5 km b) Jaghatoo& MoPHmand	Ghazni	MRRD	1387	
62	Asphalting of Herat city road to Ghoryan district (70 km).	Hirat	MPW	1387	
63	Asphalting of Gulran road (65km).	Hirat	MPW	1387	

No.	Project Name	Project Location	Responsible agency	Project Duration (year)
Start	End			
64	Construction of public bridge in Kashak Kuhna district (length 150m).	Hirat	MPW/MRRD	1388
65	Construction of road (second grade) from centre of Adraskan to Suri Sancha, 15km.	Hirat	MRRD	1387
66	Construction of bridge on Harirod river in Oba district.	Hirat	MPW/MRRD	1387
67	Construction of Tagab road in 20 km.	Takhar	MRRD	1387
68	Construction of cable bridge in 25 meter in Bangi district.	Takhar	MRRD	1387
69	Construction of road, bridge and culverts in 25km.	Takhar	MRRD	1387
70	Construction of proper and concrete bridge from Sasait to Kotal Warsaj (12 km, 3000 beneficiaries). Asphalting of Taluqan city road (12 km, 80,000 beneficiaries).	Takhar	MRRD	1387
71	Construction and asphalt of the road from the centre to the Nirkh district (70 km),90000 construction of Chack Road (15km Beneficiaries 132000	Takhar	MPW	1387
72	Construction of Beh Sood Road About 70km Beneficiaries 90000	Wardak	MPW	1387
73	Sub road construction in Hesa Dowom Behsod,(140 km)	Wardak	MPW/MRRD	1387
74	Construction of road from Daimdad up to Aab Kazar, (20 km)	Wardak	MRRD	1387
75	Construction of Road in centre of Behsod About 140 km Beneficiaries 290000	Wardak	MRRD	1387
76	Asphalt the 15 Km Hisarak roads for 400000 people.	Wardak	MRRD	1387
77	Asphalt the 15 Km Rodat roads for 20000 people.	Nangarhar	MPW/MRRD	1387
78	Construction & Asphalt the 15 Km Chaparhar roads for 20000 people.	Nangarhar	MPW/MRRD	1387
79	Asphalt the 15 Km Pacheer Wa Agam roads for 20000 people.	Nangarhar	MRRD	1387
80	Construction the Gandomak Bridge at district Sherzad for 300000 people.	Nangarhar	MPW/MRRD	1387
81	Road construction for Orgon, Surobi and Barmal>About 80 km Beneficiaries 250000	Paktika	MPW/MRRD	1387
82	Road construction from Sharana to Khairkot Wazi Khwa and Wormi. About 260 km Beneficiaries (Ongoing/PRT)	Paktika	MRRD	1387
83	Road construction from Orgon to Aka kandao Gaiyan Tarnak Lwara 65Km Beneficiaries 250000	Paktika	MRRD	1387
84	Construction & asphaltalting of roads from Urogan city to Zerok & Nakah districts (50 km, 350000 beneficiaries	Paktika	MPW/MRRD	1387
85	Construction & asphaltalting of roads from Yanya Khil to Khair Kot districts (12 km).	Paktika	MPW/MRRD	1387
86	Road construction for Khak Jabar district.	Kabul	MPW/MRRD	1387
87	Construction of Musahi and Istalif road, major and sub-roads.	Kabul	MPW/MRRD	1387
88	Asphalt of Farza road, from transit road to Farza district, total of 12 km, and it will be beneficial for 900000 persons	Kabul	MPW/MRRD	1387
89	Repair and graveling of sub-roads of Qara Bagh, Kalkan and Deh Sabz districts, (190 km	Kabul	MRRD	1387
90	Asphalting of Shakar Dara ring road, (20 km, 65,000 beneficiaries).	Kabul	MPW/MRRD	1387
91	Construction of road in Qalai zai district.	Kundoz	MRRD	1387
92	Construction of road from Archi district to Gulbagh.	Kundoz	MRRD	1387
93	Construction of road in Imam Sahib district.	Kundoz	MRRD	1387
94	Construction of road from Aks Dauot to the centre of Khan Aabad city (80,000 beneficiaries)	Kundoz	MPW/MRRD	1387
95	Asphalting of 64 km of roads for Kunduz city and 10 km of roads for Dawra city, Shahruk Dawra.	Kundoz	MPW	1387
96	Asphalting of 15 km of roads for Aaq Tapa, centre of Qala-i-Zal district	Kundoz	MPW/MRRD	1387
97	Graveling of central road of Chaar Dara to Qala-i-Zal (55 km 100,000 persons).	Kundoz	MRRD	1387
98	Asphalting of 5 km road from Aks Dauot to the centre of Khan Aabad city (80,000 beneficiaries)	Kundoz	MPW/MRRD	1387

No.	Project Name	Project Location	Responsible agency	Project Duration (year)
Start	End			
100	Gravelling of Chaar Dara road to Lala Maidan including the culverts, (35 km 500,000 beneficiaries).	kundoz	MRRD	1388
101	Gravelling and repair of the road from centre of the province till Khamram and Roi do Aab, 120 km.	Samangan	MRRD	1387
102	Asphalt of the road in 15km	Samangan	MPW/MRRD	1387
103	Construction and asphalt of road in 117 km.	Samangan	MPW/MRRD	1387
104	Asphalt of the roads in the centre of the province In 30km.	Samangan	MPW/MRRD	1387
105	Construction of rural roads in provincial centre and other districts (10 Km for each district, total 70 Km).	Kapisa	MRRD	1387
106	Asphalting of Deh Baba Ali up to Durnuma centre of province (15 Km)	Kapisa	MPW/MRRD	1387
107	Construction and Rehabilitation of rural roads as per 10km per district in 6 districts and center	Kapisa	MRRD	1387
108	Construction of road in town and connection to the main road in Tagab Nijrab and Kohband.	Kapisa	MPW/MRRD	1387
109	Repairing and graveling of roads and construction of bridges in Ghormach (30	Badghis	MRRD	1387
110	Repairing and graveling of roads and construction of bridges and culverts in Maqar (30 km, 70,000 beneficiaries).	Badghis	MRRD	1388
111	Repairing and graveling of roads and construction of bridges and culverts in Qadis (about 30 km and 120,000	Badghis	MRRD	1387
112	Asphalting of road in Morghab and Maqar. (15 km).	Badghis	MPW	1388
113	Asphalting of road from Badghis to Maqar Qalai now. (15 km).	Badghis	MPW	1388
114	Construction of road Qadis Jawand (15 km)	Badghis	MRRD	1388
115	Construction of DBST raod 15 Km in Qalai Naw sang Atash.	Badghis	MPW/MRRD	1388
116	Construction of DBST raod 15 Km in Qalai Naw sang Atash.	Badghis	MPW/MRRD	1387
117	Construction of DBSD roads from centre of the province to Gosfandan district (600000 beneficiaries)	Sari pul	MPW/MRRD	1387
118	Repair and graveling of the road from Sancharak district to Balkhab district (86 km) (150000 beneficiaries)	Sari pul	MRRD	1387
119	Repair and graveling of the road from centre of the rovnce to Kohestanat district in (97 km, 200000 beneficiaries)	Sari pul	MRRD	1387
120	Repair and resurfacing of 30 km of road from Sayad district to Merza Olang.	Sari pul	MPW/MRRD	1387
121	Repair and resurfacing of 13 km of road from centre of the province to Sayad district.	Sari pul	MPW/MRRD	1387
122	20 Km of road construction in the centre of the province.	Sari pul	MRRD	1387
123	Construction of bridge in the centre of Sar-i-Pul province	Sari pul	MPW/MRRD	1387
124	Construction 90 km of (grade 3) roads from centre of Suzma qala to Dahana-i-Dara and from Sayad district to Zir Jaght	Sari pul	MRRD	1387
125	Construction of three slandered bridges for the cars	Sari pul	MRRD	1387
126	Construction of roads and culverts of the new city of immigrants.	Sari pul	MRRD	1387
127	Asphalt the internal roads of the Kandahar city. About 40 km, for 1000000 people	Kandahar	MPW	1387
128	construction of road of dand 5km Beneficiaries 85000	Kandahar	MRRD	1387
129	Construction the road of the District Khakraiz from the Chowk of Shahagha to the centre of District. About 61 Km. For the 150000 people	Kandahar	MRRD	1387
130	Construction the road of the District Ghorak from the Maiwand to District Ghorak. About 70 Km. For the 70000 people.	Kandahar	MRRD	1387
131	Construction of roads in the centre of the province (20000 beneficiaries).	Logar	MPW	1387

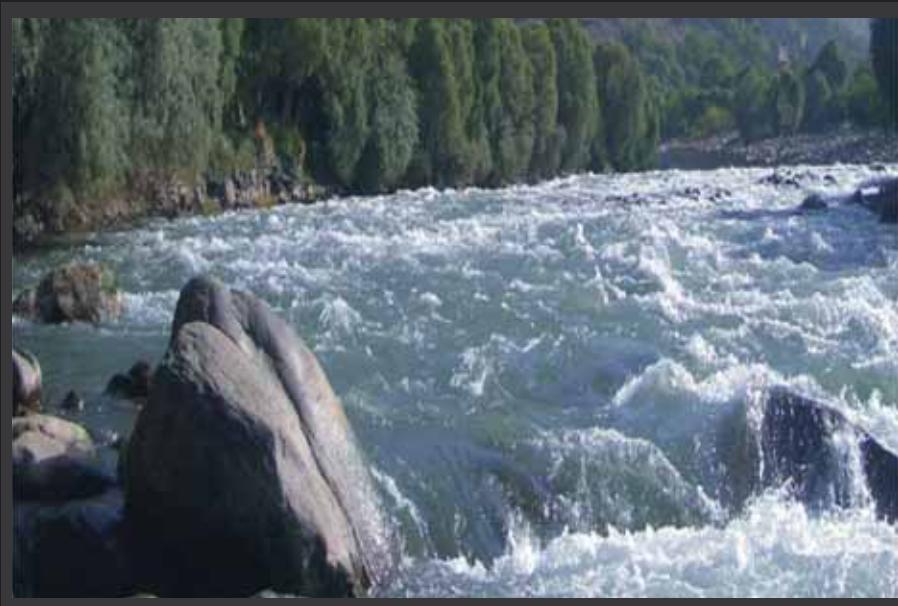
No.	Project Name	Project Location	Responsible agency	Project Duration (year)	
				Start	End
132	Rehabilitation of the following four roads in MoPHammad Agha district. A- Pui Kandahari, B- Zahid Aabah, C-Tandi Mughul Khail and D-Safid Sang to Aab Paran.	Logar	MPW/MRRD	1387	
133	Road construction from Hazra district to Hesarak	Logar	MRRD	1387	
134	Construction and Rehabilitation of rural Roads About 170km (all of Logar will benefit).	Logar	MoRR	1387	
135	Graveling of the all Roads from the centre to the Districts 50km beneficiaries 22000	Zabul	MRRD	1387	
136	construction of Sub Road from Shamaizo to Shinkai District About 65 Km	Zabul	MRRD	1387	
137	Construction of Daichopan Road About 108 Km Beneficiaries All people of The District	Zabul	MRRD	1387	
138	Reconstruction of Road and Culverts form centre to the Districts About 250 km 80 villages	Zabul	MRRD	1387	
139	Construction of Road From Centre to the Shamalzai District 130km Beneficiaries 100000	Zabul	MRRD	1387	
140	Construction of rural roads and culverts 120 km in different villages of Dehrawod district (120000 beneficiaries).	Urozgan	MRRD	1387	
141	Road Construction from Khas Urozgan 96 Km beneficiaries 95000	Urozgan	MRRD	1387	
142	Asphalting of Road from Tarenkot up top Chora District About 27 Km Beneficiaries 30000 (Ongoing/ GTZ)	Urozgan	MPW/MRRD	1387	
143	Construction and graveling of roads from Shozali Fararoad to Saghar district (90km) 100000 beneficiaries.	Ghor	MRRD	1387	
144	Asphalting of roads (Chigh Chiran City) 21 Km about 400000 beneficiaries.	Ghor	MPW	1387	
145	Asphalting of roads from Chigh Chiran to FHherat (160 km), 800000 beneficiaries.	Ghor	MPW	1387	
146	Road construction from Pushtagazak up to Sowich (35km)	Ghor	MRRD	1387	
147	Construction and graveling of road from Pasband up to Purchaman (200km	Ghor	MRRD	1387	
148	Construction and graveling of road from Pasband up to Purchaman (200km	Ghor	MRRD	1387	
149	Graveling of road from Ghoidara up to centre of Chaharsada (120)	Ghor	MRRD	1387	
150	Construction and graveling of road from centre of Shahruk district up to centre of province (120 km)	Ghor	MPW/MRRD	1387	
151	Construction of road from Shorba up to Gaqand Dolaina (70 km).	Ghor	MRRD	1388	
152	Construction and graveling of road from Khobid up to Nawai Sharif (40 km).	Ghor	MRRD	1387	
153	Graveling of roads from Tolac up to Chisht Sharif (65 km).	Farah	MPW	1387	
154	Construction of Farah city roads asphalt 50km,Beneficiaries 200000	Farah	MPW/MRRD	1387	
155	Construction of road from border to Farah centre & Pusht road Khak Safed district.(asphalt 30km, beneficiaries 100000	Farah	MPW/MRRD	1387	
156	Road graveling from Sarpuza to Feroz Kotal in 80Km and 100000 beneficiaries.	Farah	MRRD	1387	
157	Construction of two bridges in Purchaman district (120m 12000 beneficiaries).	Farah	MPW/MRRD	1387	
158	Construction of Bridge in Anar Dara district on Haroot River (300m 100000 beneficiaries).	Farah	MPW/MRRD	1388	
159	Creation of Road Along The Border About 130km Asphalt Road	Nimroz	MPW/MRRD	1387	
160	Construction of bridge on Helmand river in Sar Shila village, Zarani. About 300m Beneficiaries 50000	Nimroz	MPW/MRRD	1387	
161	Construction of bridge on the Helmand river in the Char Burjak district of Nimroz province. (1800	Nimroz	MPW/MRRD	1387	
162	Construction of road From Paron to Dahane Pirok (66km).	Noristan	MRRD	1387	
163	Construction of road from Nuristan to Badakhshan (60km).	Noristan	MPW/MRRD	1387	
164	Construction of road from Pyar to Colam up to Colam (35km).	Noristan	MRRD	1387	
165	Construction of the Chanar Khor road to Ashpi (Kamdish district). About 40 km & the (13,000 beneficiaries).	Noristan	MRRD	1387	

No.	Project Name	Project Location	Responsible agency	Project Duration (year)	
				Start	End
166	Construction of the Mandol (district). To Poshal. About 30 km. 17000 beneficiaries	Noristan	MRRD	1387	
167	Construction roads in Want wai gul / Hamshoz up to Chatrus. About 13 Km.	Noristan	MRRD	1387	
168	Construction of road and Culverts from centre to Sangen District beneficiaries 10% of province)	Hilmand	MRRD	1387	
169	Construction of asphalt road from centre to Dishow District 10% of province)	Hilmand	MPW/MRRD	1387	
170	Construction of asphalt road from centre to Nava district (beneficiaries 10% of province)	Hilmand	MPW/MRRD	1387	
171	Construction of Tertiary Roads in all 14 districts (760 Km 1500000 beneficiaries)	Hilmand	MRRD	1387	
172	Construction of bridge in Segai (120m 80000 beneficiaries).	Khost	MPW/MRRD	1387	
173	Construction of bridge in Matoon (centre 50m 60000 beneficiaries).	Khost	MPW	1387	
174	Construction of bridge in Zakokhil Lakan district (160m 50000 beneficiaries).	Khost	MPW/MRRD	1387	
175	Construction of bridge in Chapa Dara M orchal Village (80m).	Kunar	MPW/MRRD	1387	
176	Construction of 30m bridge Nare District, for Sarkano Kuchies.	Kunar	MPW/MRRD	1387	
177	Construction of canal from Shelton to Khas Kunar (70km) Khas Kunar Monawara, Sarkano district as beneficiaries.	Kunar	MPW/MRRD	1387	
178	construction of Road from Naw apass up to Khas Kunar About 55Km.	Kunar	MPW/MRRD	1387	
179	Construction of road from Asmar up to Barekot (15km beneficiaries Kunar & Provision of local bus facilities for all Kunar province (2 buses).	Kunar	MRRD	1387	
180	Asphalting of the roads from Machaigho district, Ahmad Abad (40 km, 30,000 beneficiaries).	Kunar	MoTCA	1387	
181	Construction of the roads from Gardiz city to the border of Pakistan, at Jaji Aryoub district (38 km beneficiaries).	Paktia	MPW	1387	
182	Construction of the ring road around Gardiz city & towns (60 km).	Paktia	MPW	1387	
183	Construction of road from Ahmadkhil to the border of Pakistan, at Jaji Aryoub district (38 km beneficiaries).	Paktia	MRRD	1387	
184	Construction of the road of Wazi Zadrان , Laka Tega to Said Karam (40 km).	Paktia	MRRD	1387	
185	Asphalting of the road from Gardiz to Sharana via Zurmat district & Zurmat to Dehyak district, Ghazni (70 km benefits for people of Paktia, Ghazni & Paktika provinces).	Paktia	MPW	1387	
186	Construction of the road from Patan to Khost city (70 Km benefits districts of Patan, Aryoub, Khost)	Paktia	MPW/MRRD	1387	
187	Construction of five main roads on, Bagh Qazi, Mirwais Maidan and Dar-ul-Aman (21.8 km). circular road of Shar-e-Bozorg-Fishkashim-Shighnan-Maimene-Darwaz in total reaches to 400km among which 100Km are rocks which will be consulted with Ministry accordingly)	Kabul Urban	KM/MPW	1387	
188		Badakhshan	MRRD	1387	
189	Construction of Rural roads in all districts of Khost province	Khost	MRRD	1387	



# **Water Resource Management Sector Strategy**

**1387 - 1391 (2007/08 - 2012/13)**

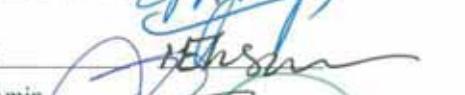
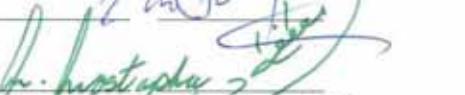


**Pillar III - Economic &  
Social Development**



# Water Sector Strategy

Approved by  
Sector Responsible Authorities

<i>Ministry/Agency</i>	<i>Name of Minister/Director</i>	<i>Signature</i>
Ministry of Energy and Water	HE M. Ismail Khan	
Ministry of Agriculture, Irrigation and Livestock	HE Obaidullah Ramin	
Ministry of Mines	HE Dip. Eng. M. Ibrahim Adel	
Ministry of Urban Development	HE Eng. Mohammad Yousaf Pashtun	
Ministry of Rural Rehabilitation and Development	HE Mohammad Ehsan Zia	
Ministry of Public Health	HE Dr. Said Mohammad Amin Fatimie	
Ministry of Economy	HE DR. M. Jalil Shams	
National Environmental Protection Agency	HE Mostapha Zaher	

Date of Submission  
February – 2008



## EXECUTIVE SUMMARY

# “WATER IS LIFE: EACH DROP IS A LEGACY FOR PRESENT AND FUTURE GENERATIONS”

### 1. Introduction

Social needs of the country require water for domestic water supply and sanitation; economic needs are for agriculture, electrical generation, and industrial usage while ecological needs superimpose additional requirements for fisheries, forestry, and bio-diversity. All these needs are on an almost continuous daily basis, now and into the future.

Afghanistan receives its water in the form of snow falling on mountainous ridges. In a matter of a handful of months, the snow melts and the associated surface runoff rapidly subsides to nothing. Water scarcity abounds for the remaining months of the year.

During the 1960s through the 1970s, a great many advances were taken in identifying numerous potential water projects of almost every conceivable type and complexity. Some large scale water projects were also implemented. All that stopped through the disruptive years of occupation and unrest. At present, the Afghan water sector's institutional structure is organized on a sector basis. Water resources development and management is conducted on a project to project manner, and its planning and administrative elements are essentially centralized.

The water sector's governance structure, however, has been disrupted, and most

infrastructure for agriculture, hydropower, and water supply has deteriorated significantly. Data collection has ceased, and even the stability of line ministries remains in a constant state of flux.

### 2. The way forward

Although a gradual transformation to integrated water resource management (IWRM) is actually in progress; the vast majority of current development undertakings are still being implemented on a project to project basis. This is because IWRM requires a significant infusion of relevant water and land use data pertaining to the analysis of river basins and/or sub-basins. Some of this data is non-existent at this time. Delaying development accordingly would have severe impact on Afghanistan's immediate needs for poverty alleviation. Any delay would also further impede Afghanistan's ability to effectively absorb a substantial number of returning refugees.

In addition to adopting IWRM principals, the Afghan water sector, over the course of time, will transition from a centralized to a decentralized institutional structure. Decentralization will establish jurisdictional boundaries conforming to natural river basins, further divided in sub-basins. A transition to a River Basin Organization (RBO)<sup>1</sup> for the

<sup>1</sup> As early as the mid-1950s, Afghanistan had been introduced to application of IWRM principles as implemented through a river basin management structure: The Helmand – Aghandab Valley Association (HAVA), which was established in conjunction with the Kajakai Multipurpose

introduction of the new way of water resources management and institutional set-up is already being experimented with along the northern frontier comprising the Amu Darya River Basin. Experience gained from this major pilot project will help pave the way for implementing additional RBO undertakings throughout the country in a progressive manner. In making this transition, it is anticipated that all stakeholders will participate in water sector development and management in their respective river basins or sub-basins.

Further change is in progress at the water user level. In the water sector, the concept of water user associations (WUAs) is being introduced. WUAs will, in many regions of the country, supplant the traditional governance mechanisms which have long since become dysfunctional. In urban water supply, the public agency Central Authority for Water Supply and Sanitation (CAWSS) will be replaced by the semi public Afghanistan Urban Water Supply and Sewerage Corporation (AUWSSC). All of these changes are aimed at improving the efficiency of water use and management. With respect to governance, new water law legislation is being prepared, environmental regulations have already been legislated, and enforcement capabilities are being established through the Ministry of the Interior. In the rural sector, governance is also being redressed through the establishment of Community Development Councils (CDCs) under the National Solidarity Program (NSP). Additionally rural water sanitation and village level irrigation is being addressed by the national development program rural water sanitation program (RUWATSAN)

### 3. Water Sector Development Projects

During the period required for transforming development and management principles to IWRM, as well as for transitioning institutional structures to RBOs, a continued project to project implementation program in the water

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Project, was conceived specifically to develop the Provinces of Helmand and Kandhar..

sector needs to be strongly supported by both the donor community and international funding agencies. Substantial infrastructure investment is needed for this development:

- Water sector components involve the construction of storage dams;
- Municipal water supply requires storage and/or diversion dams for the supply of surface waters;
- Both municipal and rural water supply require installation of wells and extraction equipment and comprehensive survey for the supply of groundwater;
- Water conveyance components involve construction of diversion dams, canals, and/or pipelines;
- Water utilization components include the construction of hydroelectric generating plant, pumping plants, water supply and wastewater treatment plants, and water distribution facilities;
- Supportive infrastructure components entail the construction of river diversion facilities which are required during dam construction, service roads, temporary labor camps, and installation of monitoring equipment (instrumentation);
- Groundwater needs to be replenished through the use of recharge basins and dams;
- Water harvesting techniques need to be constructed to supplement groundwater replenishment, as well as to provide for the care of livestock;
- Riverbank erosive defensive measures need to be inaugurated, as valuable farmlands are being severely impacted throughout the country;
- Reforestation, fisheries, biodiversity, and socio-environmental considerations need to be addressed and appropriately attended to as conditions warrant;
- Flood mitigation management requires implementing both non-structural and

structural measures to minimize flood risks and damages. Non-structural measures involve establishing flood warning and preparedness (FW/P) amongst the impacted populace, structural measures involve construction of flood storage projects, embankments, and river training facilities; contrarily

- Dehsabz city and Barikab water requirements must be fully integrated into the water and hydro electric management plans of all the affected water basins.
- Drought management, in addition to the construction of water storage reservoirs, requires developing extensive expertise in weather forecasting techniques; and.
- Applied appropriate technologies in irrigation and agricultural practices shall be introduced
- to improve effective and efficient use of water.
- Control and protection of underground water and its use is very important

A delineation of prioritized water sector projects selected for development is included in the implementation plan developed with this strategy paper. This delineation is mainly presented (formatted) on a project to project basis at this time. As comprehensive IWRM analyses progress in the future, they can be expected to be incorporated with and thoroughly integrated into the respective planning and development programs applicable to their respective basins and/or sub-basins.

#### 4. Poverty Alleviation

Poverty remains a core issue for Afghanistan. Analyses and deductions derived from the National Risk & Vulnerability Assessment surveys rank the people of Afghanistan amongst the most severely impacted and vulnerable people in the world today. Contribution of the Water Sector to poverty alleviation therefore becomes of paramount importance. In Global Water Partnership (GWP) studies, conducted

particularly since 2003, essential or highlighted considerations relating to the adoption of IWRM philosophy have come to light. Four main pivotal insights evolved from the GWP studies:

- In economies having a preponderance of population dependent upon agriculture, access to water is a fundamental factor influencing the level of poverty.
- Strengthening governance structures is of fundamental importance.
- Great effort is needed to ensure management approaches that can adapt to hydrologic variability (spatially and temporally dispersed), limited data and knowledge, rapid social, technological, economic, and demographic changes and dynamics which are politically motivated
- Continuous attention to the needs of the poor is required when adopting a broad integrated approach to solve water problems; particularly when the approach is considered within a context of weak institutional structures and rapid social changes.

Implementation of IWRM policies generally do not target a central objective of providing water for people's use. Instead emphasis is generally focused on water demand management, cost recovery, reallocation of water use to higher value users, and to environmental conservation. It is obvious that a livelihood-centered IWRM approach is required and needs to be implemented in any effective Afghanistan poverty alleviation program. Poverty alleviation has to be constructed on a broader foundation of stakeholder capacity building, and the emphasis should be to support farmers' and other poor water users' desires to achieve sustainable livelihoods. Simultaneously, this approach should be responsive to accepting social responsibility by minimizing downstream and/or off-site impacts, i.e., those areas which fall outside of the poverty study area or bounds.



# CHAPTER 1

## INTRODUCTION

### 1. General

Years of war and conflict, coupled with six years of persistent drought had a devastating impact on the social, environmental and economic structures in Afghanistan, resulting in:

- A vast majority of the population without access to safe and adequate drinking water;
- Damaged existing water infrastructure and lack of required infrastructure need for Afghanistan
- A growing incident of water-borne diseases with little or no medical assistance available;
- A significant decline in the output of the agricultural sector and damage of its infrastructure;
- A large-scale displacement of the population within and outside the country;
- Uncontrolled and deliberate cutting of forests reducing significantly the natural resource base and damaging the environment;
- A significant increase in river bank erosion and flood damages.
- Natural plants, wild pistachio and other nut bearing forest drying up from the roots;
- Badly damaged traditional community based institutions for the management of forests, water and other natural resources.
- Depletion of ground water level due to over exploitation of ground water

Population growth, returning refugees, and a re-vitalized and growing economy have created competitive demands on an already scarce water resource. A lack of specific national legislation and strategies makes proper response to the growing needs of the Afghan communities impossible. The Water Sector is central to responding to these needs.

### 2. Poverty Profile

In Afghanistan, poverty is rampant and the poor invariably lack access to freshwater and sanitation. Caught in a vicious circle, the poor not only end up paying more for water, both in terms of money and energy expended in acquiring it, they are much more susceptible to both water and sanitation borne diseases. Improving freshwater access and conditions of sanitation can factor strongly in poverty alleviation.

A key reason why poor people lack access to clean water and sanitation and why water is used in an environmentally unsustainable manner is the lack of IWRM capacity. IWRM with strong emphasis on ecosystem management improves environmental conditions, enriching the livelihoods of those dependent upon it.

Apart from adopting satisfactory IWRM initiatives, instituting good governance is perhaps the most important requirement for solving problems of providing freshwater

access and sanitation to the poor. Governance includes policy, management, legal frameworks, effective institutions, and responsive community participation. Good governance, in consort with good science, facilitates sustainable use of water resources, leading to achieving sustainable economic development. Thus, poverty reduction can be promoted through the equitable distribution of benefits. Where shared resources are involved, a potential for reduction of conflict also can be achieved.

To fully address and achieve that Millennium Development Goals (MDG) targeting both the aspects of poverty alleviation and gender empowerment, the following guidelines predicated upon global experiences should be included in the IWRM criteria:

- Water law and policy should formally recognize the validity and legitimacy of local community-based water arrangements, so long as these are in compliance with constitutional imperatives and principles of human rights.
- Water resources development should provide technical and financial support to small-scale water use, particularly as is practiced by women
- Administration and allocation of water use should facilitate small-scale rural use without imposing restrictive unrealistic barriers or water use quotas, but also should incorporate realistic and/or practical monitoring methods/devices.

- **Achievements**

- Following is a listing of achievements realized in the Water Sector since 2001:
- Governance: Formation of the Supreme Council for Water Affairs Management (SCWAM) and Technical Secretariat, preparation of new water laws and a multitude of sector policies, environmental

law were enacted by the Afghanistan Parliament.

- Water Resources Management:
  - Adoption of IWRM, formations of the companion concept of River Basin Organizations.
  - Feasibility studies completed or underway for small, medium and large Infrastructure projects
  - Rehabilitation and modernization of hydrological stations have been started.
  - Research and modeling for safe drinking water supply in Kabul for short, medium and long term
- Irrigation: 1200 small, medium and large irrigation networks have been rehabilitated or constructed resulting increase in irrigation land from 1.6 million to 1.8 million hectares.
- Access to safe drinking water and sanitation
  - Establishment of (Afghanistan Urban Water Supply and Sewerage Corporation (AUWSSC)
  - 140 Projects for water supply and sanitation have been developed
  - Research and assessment of underground water for Kabul
  - Water supply systems have been rehabilitated in 11 provinces
- 3.8 Million people benefited from water Supply and sanitation in rural areas through:
  - Construction of 45,666 wells and installation of pumps
  - Construction of 68 water supply systems
  - Construction of 18641 toilets

- Challenges and Constraints
  - Following is a delineation of major challenges and constraints immediately confronting the Water Sector:
    - Lack of skilled/experienced human and financial resources and institutions
    - Lack of reliable hydrological, meteorological, geo-technical and water quality data
    - Inadequate infrastructure and equipment
    - Inadequate of ground water information and data
    - Lack of economic mechanisms regulating water use and investments for irrigation, water supply, sanitary systems and hydropower generation
    - Unclear delineation of responsibilities
    - Projects not integrated among various line ministries
    - Donors focused on emergency projects
    - Access to safe drinking water and sanitation is not qualifying the goals of MDGs
    - Lack of resources for national underground water survey in the country
  - Digging of deep wells without coordination and enough information of hydro geological
  - Water and Poverty Reduction and Economic Growth
- Emphasis on poverty alleviation and private sector development:
- Improve access to clean water to support decrease in infant mortality and increase in life expectancy by mitigate water-borne disease
  - Support private sector development,
  - employment generation and poverty reduction
  - Provide water for irrigation for both cash and non-cash producing crops and support poverty reduction among rural population

### **Provincial Development Plans (PDPs)**

The Water Sector Strategy incorporates feedback, proposed projects and comments from the Sub National Consultations (SNCs) and is a response to the people's needs and development goals. For details of provincial priority projects refer to annex IV.



# CHAPTER 2

## CONTEXT

### 1. Sector Status

After the defeat of the Taliban in 2001, a significantly smaller amount of resources relative to other sectors of the economy went into restoration of capacity in the water sector, i.e., technical, Managerial and infrastructure capacities. This was so despite programs and projects for:

- the rehabilitation of the irrigation networks and associated works;
- implementation of the National Solidarity Program (NSP) in the rural sector supporting water pumps, micro-hydro and small scale irrigation systems;
- the urban sector with rehabilitation and extension of water supply systems in Kabul and 22 provincial towns and improvement of the institutional set-up and management capacity;
- The hydro-power sector with the rehabilitation of some hydro-power plants and implementation of demonstration projects for micro-hydro power (and renewable energy) in remote rural areas.

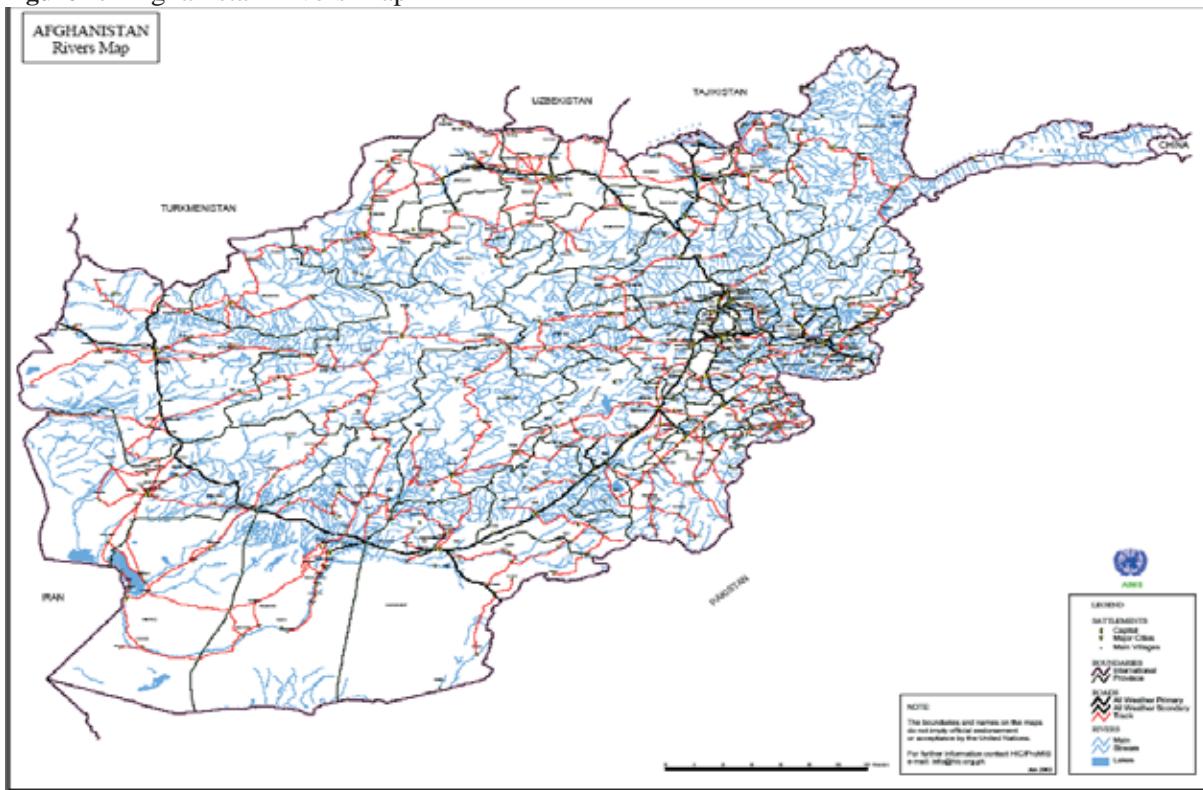
However, initial steps were also undertaken to draft policies, legislation and strategies for the planning, development and management of the water sector.

### 2. Country Features

#### GEOGRAPHY

Afghanistan is a semi arid land locked country with an area of about 655,000 square km extending about 1,300 km from southwest to northeast and about 600 km from northwest to southeast. Over three quarters of the land is mountainous, the interconnected ranges of Pamir, Hindu Kush, Koh-i- Baba, and Parapamisus rising in some places more than 6,000 m separate the rich plains of the north from the central plateau and southern valleys and deserts. This impressive chain of mountains and a smaller range running along the eastern edge of the country (Koh-i-Sulaiman) are the source of all the nation's rivers. The main rivers, streams and lakes of Afghanistan are shown in the below map.

**Figure 1:** Afghanistan Rivers Map



Source: AIMS

## CLIMATE

Afghanistan's climate is continental, with temperature ranging from 45°C in summer to minus 20°C in winter. In spring, late frost can affect agriculture, mainly fruit production. Average annual rainfall is estimated at around 250 millimeters and varies in different parts of the country from 1200 millimeters in the higher altitudes of the northeast to 60 mm in the southwest. Snow falls regularly in the mountainous regions and higher altitudes of the Northeast and the Central Highlands, while the rest of the country has varying snow fall. Annual evapotranspiration (ETP) rates are relatively low in the Hindu-Kush (900 – 1,200 mm) due to long and severe winters. They vary between 1,200 mm and 1,400 mm in the northern plains and reach up to 1,800 mm in the southern and southwestern plains. Distribution of seasonal precipitation patterns are shown on Exhibit 3.

Extreme droughts and flooding are expected to occur more frequently in the coming decades and this may cause major economic losses and social and environmental disasters. Climate models predict that rising temperatures will trigger major regional changes in the amount and distribution of precipitation with direct consequences for the availability and use of water resources, although such models have consistently yielded estimates of temperature increases in excess of actual increases.

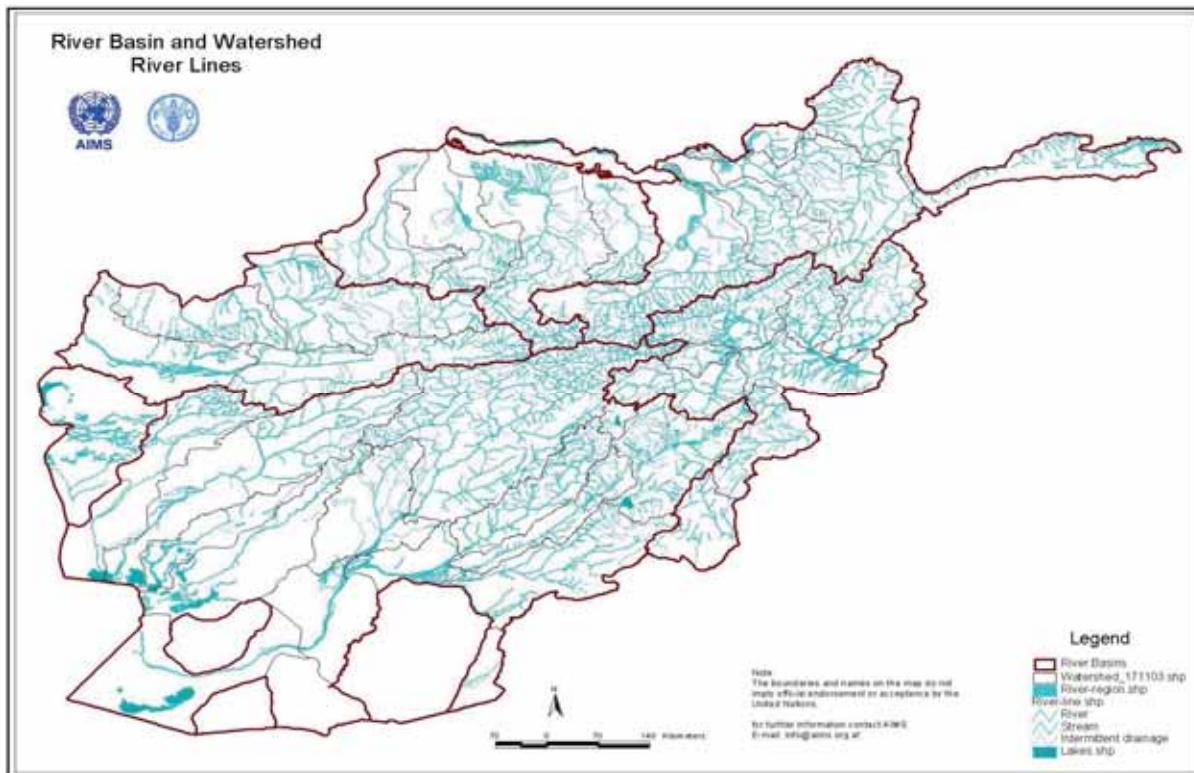
## WATER RESOURCES

Snow at elevations above 2,000 m represent about 80 percent of Afghanistan's water resources (excluding fossil groundwater) and is of key importance to the country as natural water storage. However, the quite significant amount of rain fall in spring should be considered, too. Severe droughts are generally caused by low

winter precipitation in two consecutive years. Historical records show that low winter rainfall in two successive years occurs at least once every 10 -15 years. During the last cycle of drought, the glaciers decreased in size. If this reduction can be

associated with global climate change, this poses additional longer term threats to the water sector. The main basins and watershed with river lines are shown in the below map.

**Figure 2:** River Basins and Watershed - River Line



**Source: AIMS and FAO**

Average total annual natural storage of water in the form of precipitation is about 165,000 million m<sup>3</sup> for the whole country. The total annual surface water volume of about 57,000 million m<sup>3</sup> corresponds to approximately 35% of this total. With approx 65% future use of that flow in

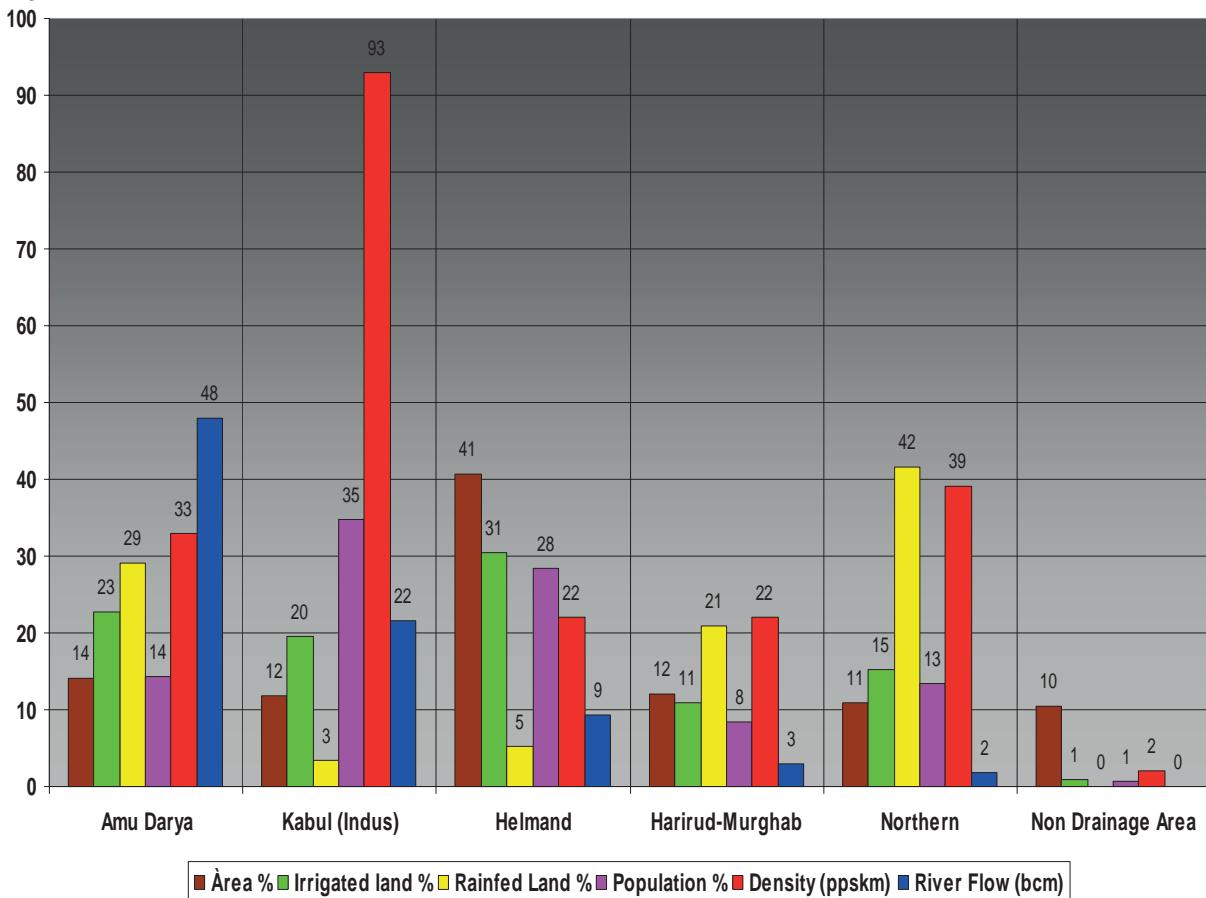
Afghanistan (at present only 30 %) average surface water availability per head is roughly estimated at 2,280 m<sup>3</sup>/year, which would be satisfactory if there was not a problem of seasonal time scale and spatial distribution. Below table and figure shows the details of river basins.

**Table 1:** River Basins

River Basin	Volume of water per year		Present Usage		Surface area		Population	Potential Water per capita
	Billion CUM	% of total	Billion CUM	% of available water	Sq km	% of total		
Amu Dariya	22.00	39	5.3	24	91.5	14	3.4	6470
Harirod-Murghab	3.06	5	1.3	42	78.4	12	2.1	1457
Helmand	9.30	16	5.4	58	2649	41	7.1	1310
Kabul	20.76	36	5.2	24	77.7	12	8.9	2333
Northern	1.88	3	1.88	100	71.7	11	3.3	570
Non-drainage					67.9	10	0.2	

Source: MEW

**Figure 3: Characteristics of different river basins**



## Security

The deteriorating security situation in the country, particularly in southern, south-eastern and eastern provinces, has impacted activities in the water sector. Security concerns have led some implementing partners to stop work temporarily, and over the longer term, to revise their implementation strategies to reduce risks to their personnel. Work stoppages, additional security requirements, and the ability to provide adequate and regular technical oversight all have an adverse impact on their capacity to deliver, timing, cost, and quality of development programmes. Greater reliance on local management and implementation may be essential. Experience has shown that adopting local formal and informal measures enhances security.

## Sector Strategy

### Development of the Water Sector Strategy (WSS)

involves implementing a sub-sector approach to the water utilization system. An effective strategy requires a different approach to governance and development of:

- urban and rural water supply and sanitation;
- irrigation and drainage;
- hydropower;
- industrial water supply and wastewater disposal;
- flood protection and preparedness;
- drought mitigation measures; and
- Environmental conservation, including forestry, fisheries, and bio-diversity.

Each of these sub-sectors necessitates significant institution building, enhancement of legal frameworks, capacity development, enlisting

economic mechanisms, intensive rehabilitation, and facilitating related development.

Several line ministries and GOA agencies are directly and indirectly involved in activities related to the development and management of Afghanistan's water sector. Each entity has drafted a strategy related to its specific sector mandate, and has generally incorporated water sector activities accordingly. All indirect or peripheral line ministry water sector activities are integrated into this Sector Strategy paper. Pertinent oversights or deficits in peripheral strategies, have been rectified in this water sector strategy, so as to create a comprehensive picture of the programmed activities in the Afghan water sector.

## Water Sector Institutional Structure

### INTRODUCTION

Through the 1970's, development and management of water resources were undertaken by three principal line ministries: 1) Ministry of Water and Power which administered irrigation and water power; 2) Central Authority for Housing and Town Planning which administered urban water supply and sanitation; and 3) Rural Development Department which administered rural water supply and small scale irrigation systems. Other line ministries were in existence but participated more as peripheral players with respect to the water sector.

During the subsequent years of civil strife and unrest in Afghanistan, from the early 1980's to at least 2001, line ministries eventually collapsed. Only non-governmental organizations (NGOs) and United Nations (UN) agencies provided minimal services. Outreach programs were concentrated primarily in rural communities. To be able to function, surviving NGO's had to essentially ally themselves with the systems of governance existing during that traumatic period. Today, seven line ministries and/or GOA agencies have programs that are associated directly with the Water Sector:: 1) the Ministry of Energy and Water (MEW); 2) the Ministry of Agriculture,

Irrigation, and Livestock (MAIL); 3) the Ministry of Rural Reconstruction and Development (MRRD); 4) Ministry of Urban Development (MUD); 5) Ministry of Mines (MM); 6) Ministry of Public Health (MPH) and, 7) Department of Environment Protection (NEPA). MEW is the lead line ministry in the surface water sector and ministry of mines is the lead in underground water resource programs. Figure 1 shows the institutional responsibilities and activities assigned to all of the line ministries actively engaged in water sector activities. In a number of cases, some sub-sector responsibilities are being administered by several line ministries. In particular, sub-sector activities associated with domestic water supply and sanitation are currently being administered by four separate line ministries.

### SCWAM AND THE TECHNICAL WATER SECRETARIAT

In 2005, the Supreme Council for Water Affairs and Management (SCWAM) was created. SCWAM is chaired by the First Vice President of the Islamic Republic of Afghanistan, and is composed of the following GOA officials: 1) Minister of Energy and Water 2); Minister of Agriculture, Irrigation and Livestock; 3) Minister of Urban Development; 4) Minister of Rural Rehabilitation and Development; 5) Minister of Health; 6) Minister of Mines; 7) Minister of Economy; and 8) Mayor of Kabul

The creation of SCWAM was in obvious recognition of the importance of water, not only to the well being of the people of Afghanistan, but to the development of the national economy. SCWAM is charged with the following mandates:

- To coordinate water related developments and activities of Government institutions.
- Recommend the National Water Sector Development Plans and Strategies for approval by Cabinet.
- Recommend any newly drafted legislation and regulations for approval
- Monitor the implementation of the development plans by the individual member – ministries and agencies.

- Function as a dispute resolution body for disputes related to water between ministries and/or agencies.
- Ensure proper compliance of the Water Law by the member ministries and agencies.

The formation of SCWAM was followed in mid-2005 by the creation of a Technical Secretariat (TS). The TS is composed of experts of SCWAM members, under chairmanship of Water DM of MEW, to prepare advice to SCWAM for decision-making on developments in water sector. The TS would work with and report directly to SCWRM. In this later directive, it was further envisioned that the TS would ensure, as a minimum, that all of the following functions be implemented:

- Obtain all documents relevant to the water sector from the appropriate line ministries and agencies.

- Review and analyze all relevant documents in accordance with approved policies and directives; thus, ensuring the effective use and conservation of water in a sustainable and integrated manner.
- Submit all relevant documentation and recommendation for action to SCWAM for ultimate decisions.
- Collect and compile all relevant data and information obtained from organizations involved with drought, flood control, drinking water supply etc.
- Collect and compile all national and international legal documentation and contracts regarding the water issues.
- Perform all other related tasks assigned to the Technical Secretariat by SCWAM

**Table 2**

	Institution	Responsibility
1	Ministry of Energy and Water	In charge of development and management of water resources and water resources infrastructures (diversion and conveyance of water) and hydro-power.
2	Ministry of Agriculture, Irrigation and Livestock	In charge of development and management of irrigated agriculture and livestock, on-farm water management, water application to crops
3	a. Ministry of Urban Development b. Afghanistan Urban Water Supply and Sewerage Corporation (AUWSSC)	In charge of policy making and legislation of urban water supply and sanitation In charge of management and operation of urban water supplies in cities.
4	Ministry of Mines	In charge of underground water resources management, survey, Investigation, discovery and development and their control.
5	Ministry of Rural Rehabilitation and Development	In charge of rural water supplies and sanitation as well as small scale irrigation (village level) and rural micro hydro power projects.
6	Ministry of Health	In charge of regulating and monitoring quality of (drinking) water
7	NEPA	In charge of regulating and monitoring any activity related to environment, including water.
8	Kabul Municipality	As representative of the capital it is a member of the SCWAM
9	National Hydrology Committee for Afghanistan (NHCA)	Advisory, research activities and capacity building support to water sector
10	Dehsabz City Development Authority (DCDA)	In charge of feasibility study and design of water supply and discharge systems for the New City at Dehsabz

## Water Sector Institutional Arrangement

The following table summarizes various line ministry and agency responsibilities of those entities directly involved with water sector activities

There are of course numerous line ministries which are not directly involved with water sector activities, but which, through their assigned responsibilities, facilitate the normal

functionality of the water sector as a whole. These

supportive GOA institutions are delineated in the following table:

### 1. Water Policies and Legislation

#### 1.1 BACKGROUND

Throughout Afghanistan's past, governance has generally been vested at provincial, district, municipal, and local levels. Accordingly, natural resources, including the water sector, have also generally been managed at that level. Water resources were typically managed by a Mirab

Table 3.

Table 3. Government institutions indirectly involved in the water sector

11	Ministry of Foreign Affairs	Any issue related to international affairs
	Ministry of Interior	Any dispute on water related conflicts that are referred to this ministry and security measures
	Ministry of Justice	Clarification and elaboration of water law and regulations
12	Ministry of Finance	Proper funding of water sector activities will be of essential importance.
13	Ministry of Economics	Evaluation of the impact of WRD on national economy and prioritization of projects.
14	Ministry of Women's Affairs	Necessary inputs and technical guidance as to how to address women's issues and gender agenda within the water sector
15	Ministry of Counter Narcotics	Funding of projects in the water sector; advisory support and capacity on CN issues and providing input to National Water Resources Development Plan
16	Provincial Governments and Development Committees	Help and support for the establishment of river basin councils according to water law and its regulations and help in their function and activities
17	Ministry of Higher Education	Developing curriculum for WRM, support human resources development in the water sector
18	Meteorological Dept.	Data collection of precipitation
19	Academy of Science	Advice and research for the water sector.

(water master) who was elected by farmers. The Mirab had the power to make key decisions concerning maintenance of irrigation facilities and the distribution and usage of water. The Mirab also provided the necessary linkage between farmers and prevailing governmental implementing entities.

The years of conflict damaged this traditional governance structure, and today governance is not only badly fragmented, but it is often ineffective. This is of great consequence considering that almost 80% of the population lives in rural Afghanistan. Recognizing this plight, there is strong governmental incentive to re-establish local level governance structures by strengthening and legalizing traditional systems which are still functioning properly or by setting-up modified systems with Water User Associations (WUAs). Through these mechanisms, direct stakeholder (community) participation can be re-established and maintained.

## 1.2 POLICY FORMULATIONS

In 2002 an international conference in Kabul laid the foundation for development of the water sector in Afghanistan. The outcome of the conference, also known as the Kabul Understandings, has been used in the formulation of different policies in the sector. The main policy guiding the water sector is the Strategic Policy Framework for the Water Sector, approved by the Supreme Council for Water Affairs Management ( SCWAM) in November 2006 (1<sup>st</sup> draft 2004). It describes the way forward in the water sector and points out specific policies, laws, regulations and procedures to be formulated:

**Table 4.**

International Partners		Specific roles and contribution
1.	World Bank	Administering ARTF, and through direct contribution supports numerous water sector projects and consultancies, capacity building, irrigation rehabilitation, urban water supply and rural development. World Bank support given to numerous sectors and activities is contributing extensively to the goals of the water sector.
2.	European Commission	Support to Kunduz River Basin Program and the Amu Darya (Kokcha-Panj) River Basin. These are pilot IWRM programs. Support given to the NSP (MRRD )and other rural development projects also contributes to the water sector's goals .
3.	ADB	Extensive support given to natural resources and transportation sectors, including significant inputs given to the agricultural sector.: Western Basins and Balkh River Basin Projects are also pilot IWRM projects

- Revision of the approved Water Law of 1991
- Water Resources management Policy and Regulations
- Institutional framework for water resources management;
- Irrigation Policy and Regulations
- Regulations for Water User Associations
- National Urban and Rural Water Supply and Sanitation Policies and Institutional Development;
- Groundwater Policy;
- Hydropower Development Policy
- Environment Law.

The Environment Law has been approved by Parliament in January 2007, while some of the the above mentioned policies have now been approved by SCWAM as national policies and remaining are under discussion.

The Strategic Policy Framework for the Water Sector (approved as national policy) and the revised Water Law (approval in progress) will be guiding the sector. The details are described in specific policies/plans on water resources management, irrigation, urban water supply and sanitation and urban water supply institutional development, rural water supply and sanitation and ground water development. Eleven separate regulations have been identified as being needed for proper implementation of the revised Water Law ( Additional regulations might be.

International Partners		Specific roles and contribution
4.	FAO	FAO studies on agriculture and water resources as well as consultancy support and capacity building contribute extensively to the development of several Afghan sectors. FAO has played a long term vital role in the development of the Afghan economy.
5.	GTZ	Provides institutional and legislative developments to the water resources management sector. GTZ also supports the institutional strengthening of Kabul, Herat and Kunduz Water Supply. Micro-hydropower (and renewable energy) are fields GTZ provides support, too.
6.	KfW	Financial support to the rehabilitation and upgrading of water supply systems in Kabul, Herat and Kunduz. Financial support is also provided to micro-hydro installations.
7.	USAID	Support to domestic urban and rural water supply and sanitation, hydropower, RAMP, Kajakai hpp, Helmand, LBG, IRD, DAI water projects, and capacity development
8.	Japan (JICA)	Feasibility studies of different water resources and contribution to NSP. WRM activities in Balkh through ADB are also funded. Study of water supply and discharge for Kabul Metropolitan Area and preliminary design of water supply and discharge systems for the New City at Dehsabz.
9.	Indian Government	Construction of Salma Dam, rehabilitation Amir Ghazi and Qargha Dams and some of future feasibility studies. Capacity building.
10.	Iranian Government	Support to capacity building and construction of research institute in MoEW. Technical assistance
11.	UNESCO	Assistance through their international hydrology program (IHP) to the preparation of a National Water Resources Development Plan and support to NHCA. Capacity building.
12.	International NGOs	Experience of international NGOs can significantly contribute to the developments in the water sector from national to field level.
13.	CIDA	Contributions to NSP, co-funding of Western Basin. Dahla dam
14.	DfID	Contributions to NSP
15.	Denmark	Contributions to NSP
16.	Norway	Contributions to NSP
17.	UN-Habitat	Support to MUD
18.	UNICEF	Support to MRRD, MoE, MPH, NGOs: advocate and promote better hygiene practice; support provision of safe drinking water and sanitation facilities to families, schools health centers and at communities; provide safe water and sanitation during calamities; support displaced and returnees.
19.	SIDA	Conducting educational capacity development programs, Shamalan canal.
20.	China	Funding and implementing Parwan irrigation project .
21.	IDB	Support to the development of the Western River Basin.
22.	USGS	Support MM with research in groundwater quality

required.). Four out of these eleven have already been drafted:

- Establishment and Management of River Basin Councils, Sub-basin Councils, River Basin Agencies and Sub-basin Agencies;
- Establishment of Water User Associations;
- Declaration of River Basins and Sub-basins; and
- Permits and Licenses.

The remaining regulations are still pending and are dependent upon revisions within the drafted water law. Official adoption of these regulations and their application is compulsory for proper progress in the sector.

In addition to these legislative needs, there is a need for political will and commitment by the Government to introduce and enforce the regulatory frameworks. In particular, in the case of non-compliance, to avoid any protraction of

conflicts between various water users in the water sector and to mitigate against any deterioration in the natural and social environment.

In drafting Legislations, the principles of the Government's "Integrated Water Resources Water Management" will be applied, including one that states: Women are key partners in water management.

## 2. Donors and Partners

Following is a list of those partners most active in the Water Sector, along with an explanation of how their roles and contribution are impacting Water Sector Strategy

## 3. National and International NGO's and the Private Sector

NGOs can play a significant role in the development of the stakeholder participation in water resources management, especially at "field" level. Due to their presence during the years of civil strife and unrest, NGOs have maintained close working contact with virtually all rural communities and their services could be readily broadened to instruct and/or coach functioning CDCs/WUAs with water usage techniques and conservation programs.

Currently there are approximately 1100 national registered non-governmental organizations (NGOs), and 300 international NGOs (INGOs). These organizations are dispersed throughout the Provinces, and enjoy a close working relationship with Afghanistan's rural communities. NGOs therefore play a very vital role in developing stakeholder participation in water resources planning and management. NGO services could also be quite readily broadened to facilitate having Community Development Councils (CDCs) and even Water User Associations (WUAs) provide effective water conservation techniques and associated water management programs to water users.

The Water Law provides significant opportunities for "end-user" participation in decision making relating to 1) water resources, planning, implementation and management ; 2) operation &

maintenance of water supply systems and services; and 3) determinations of water use allocations.. All rights of "end-users" in these processes are described in the Water Law. National and International NGOs will be able to support the participation of "end-users" through appropriate training and capacity development programs

The water law encourages stakeholder participation in IWRM planning and management processes. This participation can take different modalities according to the level at which actions take place and decisions are made. Participation is especially important at project level where water user problems can be more readily resolved. Institutions should therefore be able to integrate stakeholder needs and concerns into a common shared approach; thereby facilitating a partner relationship. This type of relationship not only expedites project execution, but tends to carry over into subsequent project management and provides an excellent platform for implementing water conservation.

Private sector participation is also encouraged. However, where public services are concerned, private sector participation is best served by first having strong institutions and a comprehensive regulatory framework in place. Where regulations are limited or unenforceable, transfer of services to the private sector may be impractical or undesirable.

## 4. Universities, Colleges and other Training Providers

For the development of appropriate degree and diploma curricula and skills training programs pertaining to water sector related subjects (WRD, WRM, WSS, water quality, etc) cooperation between Ministry of Education, MEW, MAIL, MM, MPH, NEPA , Universities, colleges and training institutions is required. It is essential to merge scientific theory with empirical and/or practical knowledge. It is also necessary to develop "practically-oriented" graduates, technicians and skilled personnel that respond to relevant needs of the sector.

## 5. Conclusions

From the context the following general problem areas have been identified::

### 1. Institutional set-up

- Present institutions in the water sector are fragmented, poorly coordinated or organized. No clear delineation of responsibilities between institutions exists.
- Water Sector activities are currently diffused and fragmented and consistently are divorced from adequate environmental management.
- The delivery of water services is typically viewed as being centralized in governmental organizations and agencies that are dealing with a deteriorated infrastructure and operating at extremely low efficiency.

### 2. Human Capacity

- The Water Sector is impaired by a shortage of adequately experienced and trained staff and an inequitable gender balance.

### 3. Information

- Water Sector is hindered by a lack of adequate and reliable hydrological, meteorological, geo-technical and water quality data, as well as information on socioeconomic characteristics and indicators of water use efficiencies and, in general, by an absence of reliable indicators for use as a basis for resolving implementation problems.
- A lack of communication and transparency and openness on information exchange between ministries is noted.

### 4. Legislation

- There is a lack of effective governance mechanisms
- There is a current lack of rules and regulations for monitoring and enforcing pending legislation, particularly in the rural communities.

5. Integrated planning and priority setting The present lists of projects in the water sector are all focused on the different line

6. ministries' mandates: impacts (pro and con) of projects on each other are not considered.

- Water management is an integral part of poverty reduction and increasing employment.
- It is important to improve economic mechanisms regulating water use and to promote attraction of investments for rehabilitation of water supply and sanitary systems.
- It is important to improve the population's access to clean drinking water and sanitation in compliance with the Millennium Development Goals (MDG).
- At present, donors are mainly showing interest in small, emergency projects. Lack of updated pre-investment studies is withholding interest in large infrastructures.
- There is a high rate of both urbanization and returning refugees, both of which are bringing new and frequently unique problems to the Water Sector.
- Continued urbanization and general economic development of the country should be accompanied by proportionate development of water supply, sewerage, and waste disposal.
- There is a lack of "shared vision" on river basin plans and limited financial resources for all proposed projects.

Water plays an important role in economic, social and environmental development. Water sector management and development is a central component of national development and included given focus as one of the important sectors in the National Development Strategy (ANDS).



# CHAPTER 3

## OVERALL STRATEGY FOR THE WATER SECTOR

### Strategic Vision

*To manage the Nation's water resources so as to reduce poverty, increase sustainable economic and social development, and improve the quality of life for all Afghans and to ensure an adequate supply of water for future generations.*

### Goals:

To improve the livelihoods of the Afghan people of present and future generations by providing:

- better access to safe drinking water,
- enhanced household food security,
- protection from the negative effects of droughts and floods,
- sustainable development and management of water resources,
- mechanisms for facilitating more effective user participation,
- support to poverty reduction and private sector development,
- Effective services for efficient water use in all sectors so as to facilitate economic growth and social development.

### Afghanistan Constitution

Article 9: Protection, management and proper utilization of public properties as well as natural resources shall be regulated by law.

### MDG Goals

#### **Goal 7: Ensure environmental sustainability:**

Targets: Halve, by 2020 the proportion without sustainable access to safe water and basic sanitation

#### **Afghan Compact Benchmarks**

Key Water Sector benchmarks established in the Afghan Compact Agreements are transcribed below:

#### **Benchmark 1:**

#### **Water Resources Management**

Sustainable water resource management strategies and plans covering irrigation and drinking water supply will be developed by end-1385, and irrigation investments will result in at least 30% of water coming from large waterworks by end-1390.

#### **Benchmark 2:**

#### **Urban Development**

By end-2010: Municipal governments will have strengthened capacity to manage urban development and to ensure that municipal services are delivered effectively, efficiently and transparently;

In line with Afghanistan's MDGs, investment in water supply and sanitation will ensure that 50% of households in Kabul and 30% of households in other major urban areas will have access to piped water.

### Benchmark 3:

#### Agriculture and Livestock

By end-2010: The necessary institutional, regulatory and incentive framework to increase production and productivity will be established to create an enabling environment for legal agriculture and agriculture-based rural industries, and public investment in agriculture will increase by 30 percent; particular consideration will be given to perennial horticulture, animal health and food security by instituting specialized support agencies and financial service delivery mechanisms, supporting farmers' associations, branding national products, disseminating timely price and weather-related information and statistics, providing strategic research and technical assistance and securing access to irrigation and water management systems.

### Benchmark 4:

#### Comprehensive Rural Development

By end-2010: Rural development will be enhanced comprehensively for the benefit of 19 million people in over 38,000 villages; this will be achieved through the election of at least a further 14,000 voluntary community development councils in all remaining villages, promoting local governance and community empowerment; access to safe drinking water will be extended to 90% of villages and sanitation to 50%; road connectivity will reach 40% of all villages, increasing access to markets, employment and social services; 47% of villages will benefit from small-scale irrigation; 800,000 households (22% of all Afghanistan's households) will benefit from improved access to financial services; and livelihoods of at least 15% of the rural population will be supported through the provision of 91 million labour days.

### Benchmark 5:

#### Environment

In line with Afghanistan's MDGs, environmental regulatory frameworks and management services will be established for the protection of air and water quality, waste management and pollution control, and natural resource policies will be developed and implementation started at all levels of government as well as the community level, by end-2007.

#### Policy Framework

The Strategic Policy Framework for the Water Sector approved by SCWAM in November 2006, which was in turn developed as a result of an international conference on water sector in Afghanistan, recommends that the following policies, laws, regulations and procedures should be developed in order to move forward in the development of the water sector

- Revision of the approved Water Law of 1991
- Water Resources management Policy and Regulations
- Institutional framework for water resources management;
- Irrigation Policy and Regulations
- Regulations for Water User Associations
- National Urban and Rural Water Supply and Sanitation Policies and Institutional Development;
- Groundwater Policy;
- Hydropower Development Policy
- Environment Law.

#### Water Resources Management Plan

#### INTEGRATED WATER RESOURCES MANAGEMENT

To implement the Water Sector's Vision Statement, the GOA has adopted the **Integrated Water Resources Management (IWRM)**

approach for planning and developing its water resources.

Commonly accepted expectations embodied in the adoption of IWRM are the following:

- Water resources management is to be undertaken in a holistic, integrated and sustainable manner.
- Satisfactory management of upstream through downstream water user interests
- Satisfactory management of both surface and ground water quantities and quality;
- The environment, including preservation of forestry, fisheries, and bio-diversity, is to be incorporated as a water user and stakeholder.
- Equitable allocation of water for social, environmental and economic needs.
- Water is a public good; no individual or private ownership is allowed.
- Water services will be provided by autonomous and accountable public, private and/or cooperative agencies.
- Women are key players in water management.
- There is a discernable enhancement of water governance by
  - a. Mobilizing stakeholder participation
  - b. Inducing social interaction through establishment of effective institutions
  - c. Providing equitable water resource allocation
  - d. Developing mechanisms for conflict resolution
  - e. Identifying trade-offs or compromises

Effective implementation of IWRM requires

1. A positive enabling environment through
  - Effective water policy
  - Actualized legislation
  - Conducive financing and incentive structures
  - Ability to provide cost recovery through cost sharing
  - Established water use rights
  - Well defined responsibilities of the central government institutions, river basin organizations, provincial and local governments, water user associations, service providers, and the private sector, et all.

2. Well defined river basin institutional responsibilities; and

3. Effective workable management instruments through
  - A capable river basin organization
  - Institutionalized stakeholder participation
  - Capable monitoring and evaluation

#### RIVER BASIN MANAGEMENT INSTITUTIONAL STRUCTURE

A river basin organization approach has generally proven to be an effective vehicle for establishing IWRM strategies. Often these organizations can serve as incentive-based participatory mechanisms. They can be particularly useful in allocating water between users and in mitigating or resolving conflicts.

The above figure shows a four tiered institutional set-up which has generally been employed for water resources management.. At the uppermost level is SCWAM and its delegated line ministries and responsible agencies. These will constitute the national institutional bodies. Basin and catchment organizations are at mid-level, and at the bottom or lowermost level are the water users and related stakeholders.

The natural boundaries of the major river basins will be used to define the areas for the planning and institutional development of water resources management. Five main river basins have been identified for the future introduction of the river basin management set-ups, Depicted on Exhibit 1, these are the following:

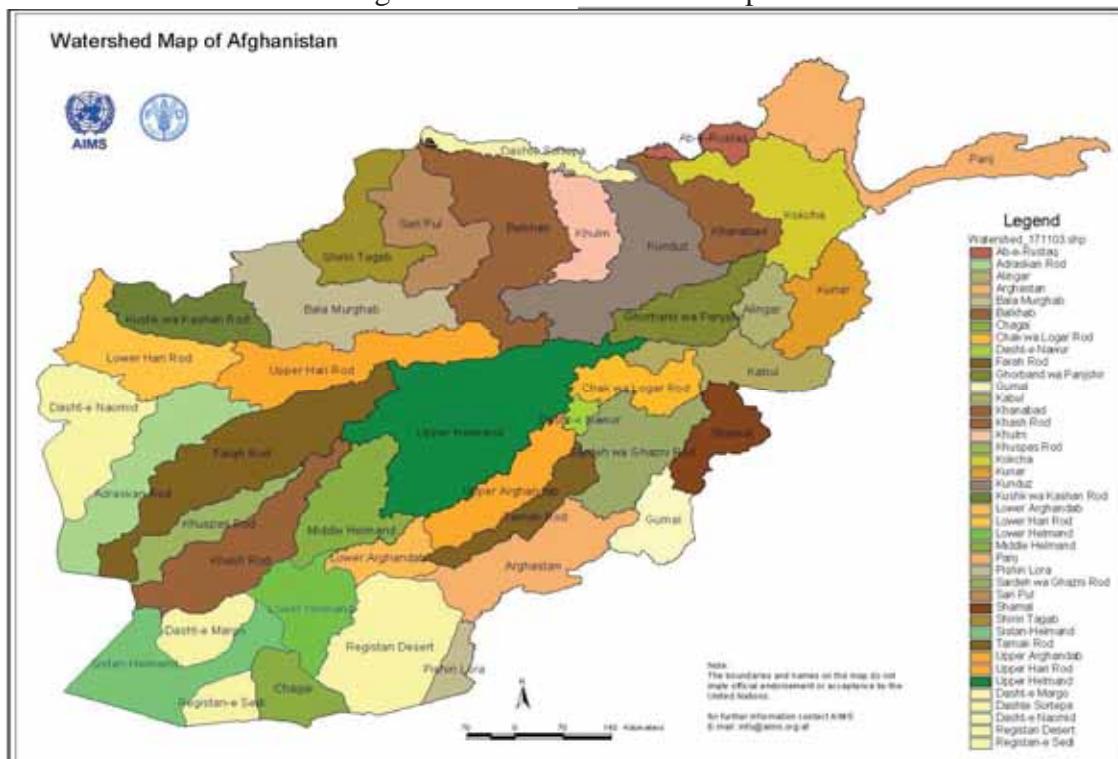
- the Amu Darya River Basin,
- the Northern River Basin,
- the Harirod & Murghab
- the Helmand River Basin and The Kabul River Basin. River and sub rive basins are shown in the below maps.

**Figure 4: River Basins Map**



Source: FAO and AIMS

**Figure 5: Sub River Basins Map**



Source: FAO and AIMS

River Basin and Sub-Basin Councils with representation of Water User Associations and other stakeholders, including women, will allow a high degree of community participation, while the national bodies will provide the necessary support and know-how through the River Basin Agencies. A separate cross-cutting water management council will also be established for the New City of Dehsabz with the responsibility of coordinating all water source management across the river basins that feed the project. As long as the proposed institutional framework has not been established in the river basins, the guidance of the management of natural and human resources will be continued through the present provincial and district offices of the relevant ministries. Traditional shuras and mirabs as well as already established water user associations will continue their resource management activities at the end-user level.

Establishing river basin organizations can perhaps serve to coordinate the actions of several overlapping national and provincial organizations. Their creation can promote the role and responsibility of various interest groups existing within each basin. They can also greatly facilitate problem solving and user coordination. Their adoption and implementation should be undertaken in a progressive manner.

## Domestic Water Supply and Sanitation

### CURRENT SITUATION

Despite advances in water supply and sanitation since 2002, the majority of the people of Afghanistan still lack access to a safe drinking water supply and access to adequate sanitation. The poor, situated in rapidly growing urban peripheral / unplanned areas, rural settlements and the margins of small and medium-sized towns and cities are especially vulnerable. The development within these areas is often neglected. People, meeting their drinking water needs from natural sources, have their

health at constant risk from waterborne diseases. Furthermore, women and girls in particular have to shoulder the considerable physical and time burden associated with fetching water from natural sources. Wastewater and human excreta from sewers, cesspits and people defecating in the open air further impair the living environment and the water supply of the poor.

Adequate drinking water supply, basic sanitation, proper wastewater disposal and effective waste management are the key prerequisites for promoting healthy life conditions. They prevent many of the diseases which impair quality of life, impose financial burdens on households and limit their income-generation opportunities.

Access to safe drinking water and sanitation, among the rural population is the lowest in the region and among the lowest in the world. For example, access to improved drinking water sources in urban areas reaches approximately 31% of the country's population but access drops dramatically in rural areas. (See Annex III.2 for more details) Estimates suggest that 4 out of 5 Afghans in rural areas may be drinking contaminated water and only 10% of rural population have access to improved sanitation.

Microbial contamination of water resources by domestic wastewater has increased substantially. There is also contamination from fertilizers and pesticides used in agriculture. Increasing pollution is also accelerating the degradation of ecosystems (e.g. loss of biodiversity). Unless coupled with wastewater management and (on-site) sanitation, the urgently needed expansion of water supply systems can worsen the already problematical hygiene conditions at local level, while freshwater resources and aquatic ecosystems are put at risk from the increase in the volume of waste water. In many cases, the available financial resources are inadequate, and investments in wastewater management and the operation of water treatment plants are not a political priority.

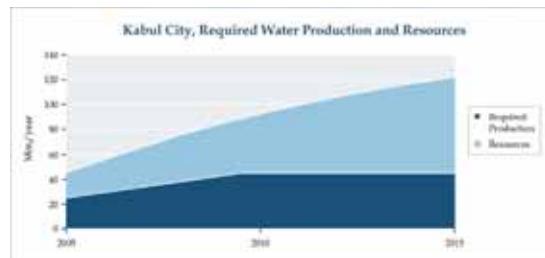
A survey in Kabul City, conducted by BGR and AGS in 2004-2005, showed that approx 50% of the wells were contaminated. The surveyed wells were located at different places in Kabul. A similar situation is expected in other major cities.

Groundwater is still considered the major source for drinking water and both rural communities and urban areas are relying more and more on the extraction of groundwater to serve their purposes. Randomly, uncontrolled drilling of boreholes without proper information on the hydro-geology and quantitative and qualitative situation of the groundwater contributes to depletion of the groundwater table and the use of un-sound technologies harms to the groundwater resource. Lowering of water tables has detrimental effects which are already in evidence. Replenishment of groundwater reserves will be a key element in the water sector strategy.

#### **URBAN WATER SUPPLY GOALS**

Considering the MDGs with regard to access to safe water and the NRVA, considerable attention will be given to the provision of safe water. With a depleting groundwater table the focus will shift to surface water as another resource for providing safe water, especially for larger supply systems.

**Figure 6:** Kabul City required water production and resources



For example, the adjacent figure shows supply and demand projections for groundwater resources for the existing city of Kabul. These projections show a substantial gap between the the demand for water and supply of groundwater. Demand is based on estimated population growth and planned

extensions to the distribution network. Supply is based on the present exploitation of groundwater resources and proposed expansions of those well fields. Supply can only cope with an increased demand till 2012, based on a consumption of only 40 l/capita/day. As no reliable alternative groundwater resources have been identified, the focus will shift to surface water as the potential new resource for Kabul Water Supply. Under an agreement signed in December 2007, JICA is to undertake the study of water supply and discharge for Kabul Metropolitan Area and preliminary design of water supply and discharge systems for the future New City at Dehsabz. This will help making decisions on the alternative surface water resource for Kabul Water Supply to ensure a proper continuous supply of water in the years ahead.

#### **RURAL WATER SUPPLY GOALS**

In the rural areas, groundwater is the main resource for safe water. With a depleting groundwater table and the MDGs in mind there is an urgent need to use bore hole drilling techniques to ensure water supplies are sustainable and aqua-flow levels are not reduced (i.e. decline in the water table impacting on groundwater reserves) with a negative impact on long term water accessibility. The operation and maintenance costs for rural water supply needs to be recovered from rural communities in order to ensure these supplies are sustainable. Rural water supply is needed for many of the agro-processing requirements.

There is a very important health related dimension to access to clean non-contaminated water, an important factor with respect to maternal mortality rates, children's health and child mortality rates. Lack of water affects women disproportionately in a unique way since they are the main managers of household water use. However, this aspect of water policy is often neglected and there needs to be explicit policies, mechanisms and targets to meet the needs of women.

## SANITATION

Generally, people in urban areas use unsanitary toilets that became serious health hazards to public health. There is a need to develop suitable technological options and strategies to make them sanitary and environmental friendly. There is a need for a programmatic approach to achieve this. Further, the open drains are not well connected and leave pools of liquid waste causing major problems. Most cities need rehabilitation of existing network of drains and proper disposal systems.

The situation in the rural areas is even worse. Only the improved latrines and flush toilets are considered safe sanitation and less than 10% of the rural households have access to safe sanitation.. Improved access to sanitation and safe drinking water is urgently needed for the well-being of the rural population.

## Industrial Water and Wastewater Disposal

### CURRENT SITUATION

Besides food security, the availability of water is an important basis for all other productive activities. Water is essential for commerce, mining and industry, where it is used as a medium (e.g. as a solvent), coolant or mode of transport in most production processes. Water is also an important resource for energy production, especially via hydropower plants. Hydropower is likely to become increasingly important in the context of the climate change debate, as it is a cheap renewable energy resource, which generally causes far fewer negative environmental impacts than other energy sources in Afghanistan. Most industries have their own water supply or are connected to an urban network. No quantitative and qualitative data on water use and waste water disposal from industry are available at present..

## DEVELOPMENT GOALS

With the planning of 17 new industrial parks a sharp increase in demand can be expected at the locality of each park. Estimates of demands are urgently needed, to anticipate a proper resource for the parks without harming other resources already in use nearby, such as house or community wells. In addition a full assessment of the water demands of the New City (Dehsabz) is required in order to confirm sufficient supply and management capacity.

### Irrigation

### BENCHMARK CLARIFICATION

Benchmark 1 requires clarification concerning the definition of large works. Classification of large works under the Afghan Compact (AC) is considered to be engineering structures which are able to supply water to more than 5000 Ha. For the monitoring of AC benchmark progress the following indicators have been formulated.

Table 5.

Primary Indicator	Secondary Indicators
Total area under irrigation (Ha).	1. Irrigation capacity (nationwide) from large works in existing systems increased. (Ha) 2. Irrigation capacity (nationwide) from large works acquired through new systems (Ha)

Remarks: The primary indicator does not just refer to the physical infrastructure, but also to the real use of that water.

## CURRENT SITUATION

The term “water for food” denotes water that is used in agriculture in order to feed the growing population. In the broadest sense, it comprises all types of land use which consumes water for food production and income generation, including rain-fed and irrigated agriculture, livestock farming, forestry and aquaculture. Agriculture alone accounts for approximately more than 90 percent of the water consumption. However, the efficiency of water use and its economic importance are low: in many cases, water loss amounts to more than more than 50 percent, and the amount of water withdrawn is grossly disproportionate to the share of economic added value created. As water demand intensifies and climate change increases, the need for action in this area is likely to become more acute.

More than 15% of Afghanistan’s irrigated land derives water from traditional groundwater sources such as karez, springs, and shallow well systems called Arhads. Karez are underground systems which tap groundwater by gravity from an aquifer for purposes of irrigation and domestic water supply. Today, about 60% to 70% of the karez and 85% of the existing shallow wells are not yielding water adequately, and the populations dependent upon them are in desperate circumstances. Low precipitation accounts for their low yield. However, this situation is being aggravated by the sinking of deep tube wells in proximity to traditional systems. The latter impacts the yield from traditional system aquifers. In most urban areas where this is happening, the poorer segments of the population are being placed at risk from being denied access to traditional sources of water supply.

## DEVELOPMENT GOALS

Despite the significant input in the rehabilitation of existing irrigation schemes by on-going projects, there is still an enormous need for expansion of the irrigation supply through continuous rehabilitation and improvements of existing

systems as well as by developing new irrigation schemes, including large works. Not only physical works, but also improvements in on-farm water management, distribution to crops and alternative crops and irrigation technologies should be considered – as small-scale irrigation schemes are rehabilitated there should be community based discussions to determine the options for different agricultural systems/crops to be introduced. Introduction of high value crops to compete with poppy should be demonstrated and promoted. By aiming to reach benchmark 1 (2<sup>nd</sup> part) the focus should not only be on physical infrastructures; in-field developments to use the water from those infrastructures should go hand-in-hand. There is a need for a “social compact” with farmers that rehabilitated irrigation facilities will only be used for legal crops; incorporation of such compact in the constitution of a water user association should be considered.

At present an estimated 1.8 million Ha of land is under irrigation command; 300 had of land irrigated from engineered systems and large works, the remaining is traditional irrigation.

## Hydropower

### CURRENT SITUATION

In 1993, Afghanistan’s total installed electrical capacity was approximately 454 MW, of which about 281 MW was contributed by various hydroelectric projects. Most hydroelectric generating plants were situated in relatively close proximity to Kabul. Similar to most infrastructures throughout the country, during Afghanistan’s problem years, a majority of the generating plants fell into disrepair. Generating output capacity steadily declined. It was only through the ingenious capability of the operating staff, that plants were able to run at all. Present production capacity of hydro power plants (Mahipar, Naglu, Sarobi, Kajaki) in Afghanistan is about 250 MW.

At the time of national reconstruction, assessments were initially undertaken to determine the extent of restoration required. Slowly, and primarily through the assistance of international funding agencies, hydro project rehabilitation programs were inaugurated. Concentration was on repairing, replacing and where possible, upgrading associated electro-mechanical components. Right at the beginning of this same period, a detailed master plan was prepared to guide the immediate expansion needs of the electric sector (20-year time frame). This plan filtered out all known multipurpose projects, concentrating solely on the adoption of known power projects so as to avoid inter-ministerial turf battles.

#### **DEVELOPMENT GOALS**

The expansion of the electric sector will begin by implementation of the Baghdara Hydroelectric Power Project. This 280 MW project is situated in the Panjshir River gorge. Optimistic predictions cited November 2011 as the initial commercial operation date for this project. Feasibility studies are underway, and a Definition Report has already been prepared by the Consultant engaged for the study. Baghdadra has the potential to serve the power and drinking water needs of the future New City at Dehsabz. Major hydroelectric projects can however take several years to be processed through the necessary design elaboration phases.

In principle, rural areas are often much too remote for connection to the national electrical grid. Micro-hydropower plants in areas with sustainable water resources can therefore function as effective alternatives to provide electrification to rural areas. Power generation facilities constructed within irrigation schemes can also sometimes become viable alternatives. In terms of rural infrastructure development, a combination of rural water supply and the generation of electricity through a sustainable source of water using micro hydro will contribute to the counter narcotics efforts through strengthening the options for alternative livelihoods.

Hydropower development strategy will focus on the following:

- Hydropower should be given greater development emphasis, not only to enhance the energy sector, but to benefit the environmental sector and water sector in general.
- Improve inter-connections to increase the reliability of energy production.
- Improved energy planning and associated investment policies.
- Place greater emphasis on multipurpose projects to augment irrigation requirements.
- Renovate and modernize all existing operating projects.

#### **Environment**

Ecosystems are reliant on adequate water quantity and quality. They play a key role in the hydrological cycle and form important natural reservoirs such as wetlands, forests and lakes. Ecosystems transform water into life and absorb parts of the hydrological cycle, which are then no longer available for human use. The feedback effects of forests and afforestation on erosion, mudslides, flooding and precipitation vary according to climate, geology and geomorphology, water catchment size, etc. In practice, it is clear that the environment often carries little weight in negotiating processes on inter-sectoral resource allocation. As a rule, it is the poor who suffer most from environmental pollution and who are most directly reliant on environmental services. In calculating the hydrological balance in research and politics, too, the water requirements of natural ecosystems are often ignored.

The recent years of conflict and poor water management have seriously degraded many of the wetlands and made it difficult or impossible to make improvements to infrastructure or to integrate uncoordinated local schemes into a

coherent national strategy for water. As indicated below, wetlands are a necessary aspect for both the physical rehabilitation of water resources as well as an important feature for social management structures and programs included in the strategy. Issues to be seriously considered are:

- Desiccation of wetlands with accompanying loss of vegetation
- Soil erosion and movement of sand, dust and sediments into irrigated areas, irrigation canals and lakebeds
- Loss of agricultural land
- Change in flora and fauna of the wetlands
- Increasing and uncoordinated water extraction
- Ground water salinity
- Pesticides residues in wetlands

### Natural Disasters

Extreme flood events pose a danger not only to people and infrastructure but also to cultural property and environmental resources. Flooding can claim thousands of lives, cause epidemics, destroy investment in infrastructure, and thus impact severely on economic development. However, countries whose economic and social development is heavily dependent on agriculture will be partly reliant on fertile floodplains for food production and poverty reduction. The frequency and variability of extreme flood events are changing. This is due, among other things, to large-scale deforestation, sealing of soils and climate change. Population growth and the ensuing settlement of new areas as well as urbanization are increasing the numbers of people at risk from flooding, thus contributing to greater vulnerability and potential damage.

### Human Capacity Development

In general, a lack of sufficient capable staff to plan, design and implement projects is assessed

within all the ministries in the water sector, in particular with regard to the new approach of integrated management of water resources and river basin planning, development and management. Most staff trained before and during the Soviet occupation have left the country and did not return, while others who returned have mostly been absorbed by the private sector, by international organizations or NGOs.

The coordinating role of the Supreme Council for Water Affairs Management needs to be strengthened. Although a technical secretariat for the SCWAM has been established and is functioning, there is an urgent need for a pool of sufficiently experienced technical and economical experts to review and prepare documents, monitor the process and inform and advise stakeholders in the public and private sector on relevant issues concerning the policies and regulations in order for the plans to be implemented and observed effectively in the future. Also, its institutional set-up needs urgently to be decided upon.

There is also a lack of social-anthropological understanding, analyses and experience under engineers and other technical staff in the ministries in the water sector. Consideration needs to be given to the recruitment of a Social Gender Advisor or special training of technical experts and other staff in this area. . Efforts will be made to redress the inequitable gender balance in the water sector human resources.

### Information Gathering

Fundamental to river basin planning is having a database of historical information. Having this database also facilitates continual monitoring and evaluation of climatology. The re-construction of the hydrometric network has recently been started. Improvement on meteorological information gathering is also required and construction of additional weather stations is also foreseen in the near future. Any information on water and water related activities/projects, available in

the individual member ministries of SCWAM, need to be made available for a central database for water resources planning, development and management. Although the central database and the operating and analyzing experts will

be stationed in MEW in the section of surface water and in the section of underground water in ministry of mines, the use of the data will be under the supervision of SCWAM.



## CHAPTER 4

# PRIORITY POLICIES AND OBJECTIVES

### General

The following are fundamental for proper planning and sustainable development/investment in the water sector:

- Proper **human capacity** at all levels of the water sector within government as well as within private sector;
- Functional **water sector institutions** at national, river basin and sub-basin level; and
- Up-to-date **water sector information**.

In the implementation of the strategy program, these key-areas should be given highest priority. However, within these three areas, additional priority selections will also need to be made. Concurrent with focus on these key areas, physical development of water resources/projects and infrastructure should be continued.

Experience in other countries has demonstrated that the building of infrastructure is itself not an effective approach in isolation. Construction must be augmented by the enhancement of both institutional and financial capacity in a **parallel approach**. Activities conducted in the field are similarly used as (training) tools for capacity building as well as the development of new institutional set-up. The **progressive introduction** of management – slowly building-up new institutional set-ups, mainly as components of on-going or new projects/programs – also increases effectiveness.. The planning, design and implementation of infrastructure are used as tools

for the setting-up of the institutional components like river basin and sub-basin councils, or river basin and sub-basin agencies, and the participation of the end-users. The new water law endorses this approach.: *"When the Ministry judges the councils and agencies are capable of taking their legal responsibilities, these responsibilities will be delegated to those new institutions"*. Special attention will be paid to the social water management activities of the on-going river basin programs to assure proper establishment of water user associations. Their experience will be employed in the drafting of additional national and local regulations. In summary, the overall strategy for achieving the expected results will be to adopt a **parallel and progressive approach** for the introduction of IWRM in the country. Simultaneously, responding to the immediate needs of the people by rehabilitating and improving drinking water supply and water resources infrastructure/irrigation schemes.

**Information gathering and building capacity to analyze / interpret the information** is another priority area. Special attention should be given to the rehabilitation of the hydro-meteorologic network as this data is of crucial importance for future planning and development of water resources. In addition, information on water quality, geology/geomorphology, socio-economics, and environment need to be gathered. This data is required for efficient integrated strategic development and investment plans in each of the river basins. With priorities established, a realistic roadmap can be developed

for building capacity in the public water sector and for facilitating private sector participation in water sector development. Priorities set in the strategies of the individual ministries will also be reflected in the specific river basin development/investment plans. Benchmarks, indicators and targets need to be mutually agreed upon in order to streamline activities and relate them to the development objectives of the ANDS.

### Implementation Procedure

Implementing the following steps will be of crucial importance to create the new institutional set-up and gradually transfer responsibilities to the River Basin Councils and Agencies.

- Approval of revised Water Law by cabinet and parliament.
- Coordination with other stakeholders in the public sector (Ministries related to water resource management, NEPA etc.\*\*) and agreement on how to implement the new administrative structure of the natural resources sector based on the River Basin approach (natural river basin boundaries for all aspects of natural resources management and planning instead of the administrative provincial and district boundaries).
- Delineation of Sub-basins within each river basin with Sub-Basin Agencies representing the River Basin Agency.
- Progressive establishment of a River Basin Agency in each river basin with administrative, advisory and executive tasks related to irrigation, water resources and infrastructure management (the present provincial and district irrigation offices as well as the regional PCU offices of EIRP will become part of the River Basin Agencies).
- Election of representatives for Sub-Basin Councils by water user and other stakeholder organizations.

- Nomination of Sub-Basin Council representatives by members to form the River Basin Council to which decision-making powers will be given by the revised Water Law.
- Draft, review and approve proposed regulations for the Water Law.
- Draft policies to reduce vulnerability to climate change risks and to mitigate against droughts & floods

### Desired outcomes

#### Overall Water Sector Strategic Outcomes

- Improved water sector legal and governance structures and institutions in place
- Sustainable water resource management strategies and plans covering irrigation and drinking water supply developed and implemented.
- Water resources for drinking and irrigation purposes improved as well as poverty reduction and employment creation.
- Infant mortality decreased and life expectancy increased as result of higher access to clean water. For details refer to Annex I (Action Plan).

### SHORT TERM OBJECTIVES

In the short term the following outcomes are expected:

- Approval of the revised Water Law (spring 2008) and Regulations (mid 2008). Chapter 5 of the Environment Law deals with water sector activities; wherein it is stipulated that all major Works requires an environmental impact assessment (EIA), and where appropriate a Sociological Impact Assessment (SIA) should also be conducted.
- Establishment of new institutions for water resources management and urban water supply management

1. Kunduz River Sub-Basin – 3 sub-basin councils and sub-basin agencies (spring 2008)
  2. b. full Amu Darya River Basin – 3 additional sub-basin councils and sub-basin agencies and one river basin council and river basin agency (spring 2009)
  3. Balkh sub-basin institutions (2009)
  4. Western Basin Institutions (2010)
  5. AUWSSC (spring 2008)
  6. Two SBUs functional (spring 2009) (see short-term plan UWSS)
- Hydrometric network installed and operating (2007-08); data collected, processed and information services effectively provided to users, a basin water allocation/distribution planning procedure established and drought/ (snow melt) flood forecasting system developed (2008 onwards).
  - Environmental regulatory frameworks and management services established for the protection of air and water quality, waste management and pollution control, and natural resource policies (spring 2008)
  - Water User Associations based on traditional Mirab system have been formed by water users and participate in all aspects of planning and management of the water resources in their area through the proposed river basin management institutions (River Basin and Sub-Basin Councils). – (2007 onwards)
  - River Basin Management Plans prepared for basins with functional river basin institutions in place. - (2008 onwards)
  - Construction of 53 600 wells in rural areas (2007-2009)
  - Water use studies for Dehsabz New City and integrated water usage and management concept of operations completed by 2010.

#### **INTERMEDIATE TERM OBJECTIVES**

As mid-term outcomes (2013) are expected:

- Capacity building in different Ministries in the water sector and new management institutions in full swing – starting in 2007 and in 2010 70% of staff properly trained, including an improved gender balance at all levels of staffing.
- New resource for Kabul Water Supply fully operational in 2013
- A total area of 2,534,000 Ha under irrigation, including the control of water distribution, e.g. headwork's for water control provided in schemes representing totally 80% of the total water use.
  1. water provided by small and medium works -- 1771 000 Ha
  2. water provided by large works -- 763 000 Ha (= 30% from large works)
- Improvement / extensions of urban water supply networks to provide access to piped water to 50% of households in Kabul, and 30% of households in other main urban centres
- Revitalize the existing IWRM structure of the Helmand Arghandab Valley Association (HAVA).
- Expanded new management institutions in water resources management and urban water supply:
  1. Northern River Basin institutions (2013)
  2. UWSS Regulator appointed (2013)
  3. UWSS 4 additional SBUs functional (2013)
- Access to safe drinking water is extended to 90% of villages and sanitation to 50%.
- 47% Of villages benefit from small-scale irrigation.

- Construction of an additional 54791 well points and rehabilitation of non-functioning water points.
- Monitoring & Evaluation Units established in the Ministry and River Basin Agencies providing information to management and donor agencies.
- National Water Resources Development plan prepared, indicating options for potential dams, storage reservoirs for multi-purpose use, resources available for drinking water supply, irrigation expansion and improvement in efficiency and effectiveness of water use. Feasibility studies, presently undertaken, should become part of this plan.
- Integrated Dehsabz water management infrastructure in place by 2015

#### **LONG TERM OBJECTIVES**

Long-term desired outcomes (year 2023).

Results as well as experiences and lessons learnt from the short and mid-term desired outcomes will contribute to these long-term desired outcomes.

- River Basin Management institutions are established and functioning in all five river basins, with proper gender balance in River Basin Agencies and River Basin Councils.
- Continuous investment in water resources infrastructures from private and government sector, based on the plans and designs prepared according to the National Water Resources Development plan.
- The improvement of water resources management and introduction of alternative crops, new irrigation technologies and different agricultural systems increased the food security, improved the environmental conditions and reduced the cultivation of poppies significantly.
- Staff of Ministries and River Basin Agencies is fully capable of leading the developments and management of the water resources in the country and informing and advising the public and private sector accordingly.
- Information systems operational for proper prediction of droughts and forecasting of floods.
- Flood management systems in all river basins are functional.
- SCWAM and its Technical Secretariat are functioning as an APEX body, with a pool of part-time contracted experts as advisors
- Proper curriculum in all aspects of the water sector is developed at local Universities and Technical Colleges.
- Gradual increase to 25% of private water supply companies in large irrigation schemes.
- O&M of large (irrigation) infrastructure fully carried out by service providers from private sector;
- Full cost recovery of water services from users;
- Financial Autonomy of RBAs and other public utility organizations.
- Water service providers in urban areas are functioning as independent, autonomous enterprises.
- Supply networks for drinking water are covering 90% of the urban areas.
- Construction of gravity and motorized pipe schemes to provide safe drinking water at the gate of each house hold in rural areas.
- Access to safe water has increased to 98% of the population.
- Hydropower: Potential HPP sites, spread over the country for approx. 3000 MW power production, are developed and operational.



# CHAPTER 5

## INPUTS AND OUTPUTS

### Major Programs

The on-going and planned projects of the ministries have been clustered and structured into a number of national programs, recognizing the requirements outlined in the priority policies:

1. Institutional Set-up and Capacity Building Program
2. National Water Resources Development Program
3. National River Basin Management Program
4. Irrigation Rehabilitation Program (including agriculture programs covering full on farm water management packages, leveling, efficient irrigation methods, drought resistant crops/varieties development etc.)
5. Mid-term Urban Water Supply & Sanitation Program
6. Rural water and Sanitation Program (RuWatSan)
7. Riverbank Protection program
8. Agriculture "Food Security for All" program
9. The Provincial Consultations' priorities
10. Prioritized and costed programs and projects

The programs 1 and 2 are dealing with the capacity building, institutional set-up, legislation

and information gathering and processing. These programs should get priority, but development of the water resources in the field should also continue. Program 3 responds to the dual tasks of remodeling and modernizing institutions and, at the same time, rehabilitating and improving infrastructure. It considers short run emergency water infrastructure rehabilitation and income generation needs as well as the long run goal of sustainable development of institutions and creation of new multifunctional infrastructure in the Water Sector. As most projects and studies comprise components of capacity building and institutional development, the project activities will be used as training tool for the new river basin management staff as well as the water users and the staff of their organizations and others to be created as part of the river basin institutional setup.

Projects in programs 4-8 are presently grouped, based on the main activities of their sub-sector. Once development and investment plans for the river basins have been drafted, the programs 4-8 will be absorbed in the basin plans. Prioritized and Costed Programs and Projects, taking into account the priorities emerging from the provincial consultations under program 9, are the outcome of Program 10. The main criteria for the programs and projects prioritization are multipurpose and long term characteristics. The specific projects to be undertaken during the timeframe of this strategy are still being designed and prioritized by the GOA and other stakeholders. The projects will be in line with the on-going and planned projects of the ministries,

and have been clustered and structured into a number of national programs, recognizing the requirements outlined in the priority policies: At present, the cost estimates and specific projects are being reviewed and revised to meet the goals of this strategy are not available at this time. For details of projects refer to annex III.

### Institutional Set-up and Capacity Building

Activities in this program are components of different on-going and planned projects and are focusing on the institutional set-up and capacity building for water resources management, water resources infrastructure development and urban water supply development at national as well as at river basin and sub-basin level. These activities have been combined in the program to enhance cooperation between the projects and to avoid duplication of efforts. Following activities as parts or suggested parts of projects should get proper attention for a sustainable development in the water sector:

- Re-organizations of Ministries, corporatization or privatization of viable SOEs, and closing remaining SOE's.
- fostering Ministry cadres and water users' capacity build up in on-farm and off-farm water management, including development of forecasting procedures, annual mid term and drought, flood and climate change preparedness
- supporting the academic capacity and research process,
- All legislative aspects for reforming the Water Sector like regulations to the Water Law, guidelines, standards, setting-up of institutions for water resources management, as well as training of staff in implementing the new legislation and regulations.
- Capacity Building Development for Irrigation and Water Resource and Water Supply Management through continuous TA in several areas like general management, planning

including economics, design, site surveys, agronomy and farm-management, community organizing and gender, O&M, etc.

- Capacity Building and Institutional Development of River Basin Agencies and Sub-basin Agencies
- Capacity Building and Institutional Development of AUWSSC and its SBUs

Capacity development is not only limited to human capability, but extends to having overall capability in three areas: financial, technical, and managerial. Having financial capacity implies that the sector has the capability to acquire and manage sufficient financial resources to permit compliance with regulations and policies as well as facilitate necessary expansion. Essential elements of financial capacity consist in having the proper analytical tools, deriving sufficient revenue to achieve self-sufficiency, and having ability to attract credit worthiness.. Likewise, technical capacity implies also having the physical infrastructure to permit implementation of programs and projects.

### National Water Resources Development

#### PLANNING STUDY COMPONENTS

According to the Water Law the Ministry of Energy and Water is responsible for the preparation of a **National Water Resources Development plan**. Such a plan should cover aspects of development of the national water resources for the social, environmental and economic needs of the country as well as

- Better and accurate studies, identification and confirmation of surface water resources (MEW) and ground water resources (MoM) (preparation of water master plan for surface and ground water)
- Aspects of elaborating river basin development and management plans,

- Opening the ground for private sector investments in the water sector,
- Proper planning and implementation of infrastructure for surface water control , and rain and flood water harvesting, supplementary irrigation, groundwater recharge, soil stabilization, etc.
- Enabling environment for private sector investment

The rehabilitation of the hydro-meteorological network is a first requirement. The present hydro-meteorological data base is from the late seventies. Additional information on water quality, geotechnical aspects, socio-economics and environment needs to be collected.

An IWRM allocation of limited water resources between agricultural, rural, municipal and environmental uses requires the full integration of supply, demand, water quality and ecological considerations. Environmental quality, planning under climate variability and uncertainty, and the need to develop and implement sustainable water use strategies, further necessitates having a comprehensive water sector master plan. To facilitate effective transitioning to IWRM, the water sector's master planning must encompass a baseline analysis of all of Afghanistan's complex river basin systems. It must integrate water balances and water policies with both natural and engineered components of the water sector infrastructure.

Master planning should progress through the discrete steps of 1) identification of parameters and processes; 2) calibration of fundamental components; 3) simulating alternative scenarios; and 4) evaluation of water sufficiency, meeting water use objectives, and impacts on tolerances to variability in major parameters. The latter constraint involves investigation and sensitivity analysis of the following:

- Variations to population growth and economic development patterns.
- Variations to water storage reservoir operating rules.
- Variations to groundwater exploitation.
- Variations to water conservation.
- Variations to ecosystem requirements.
- Variations to conjunctive use to store excess surface water in underground aquifers.
- Variations in potential water recycling programs.
- Variations to irrigation techniques and efficiencies.
- Variations to agricultural cropping patterns.
- Variations to climate change.
- Variations in watershed pollution and consequent impacts on downstream water quality?
- Variations in land use changes and associated runoff characteristics.

The basic objective in formulating a water sector master plan is to place demand-side issues such as water use patterns, equipment efficiencies, re-use strategies, costs, and water allocation schemes on an equal footing with supply-side topics such as surfacewater stream flow, groundwater resources, reservoirs, and water transfers. Only through appropriate master plan simulation studies can water users and stakeholders obtain a comprehensive view of the broad range of factors that must be considered in managing water resources for present and future use. The result is achieving an effective tool for examining alternative water development and management options.

As first step for such national development plan a Master Plan for the Kabul River Basin has been prepared. In addition, the Ministry has prepared a list of water resources development projects in the five river basins, which need consultation

with other ministries for their inputs towards an integrated development plan of the respective water resources. In the coming period such projects should be combined into development packages covering a sub-basin or total river basin. Suggested packages could be the **Upper Kabul Catchment** as an integration of irrigation infrastructure with hydro-power generation and resources for Kabul urban water supply. Alternatively, the **Bamyan Valley Cultural Heritage developments** as an integration of rural water supply and sanitation with irrigation, cultural heritage protection and urban development could be implemented.

Considering the limited capacity in MEW, the drafting of WRD plans per river basin is more realistic than focusing on a national plan. The Amu Darya River Basin and Kabul River Basin have been chosen as pilots for this development

planning. A special WRPU in MEW has been established with support of WB and will be trained for the drafting of the river basin development plans.

#### INFRASTRUCTURE COMPONENTS

During the period that the water sector is in transition to IWRM – RBA programming, the needs of the population and the growth in the economy of Afghanistan will require continued and accelerated implementation of projects. A significant number of major infrastructure projects have already been identified by the water sector and have been selected for implementation to serve these fundamental socio-economic needs. Following table is a listing of major infrastructure projects which have been identified for implementation.

**TABLE 6: LISTING IDENTIFIED MAJOR INFRASTRUCTURE PROJECTS**

Name of Projects	River Basin	Purposes*	Implementation, years			Cost estimate in Million USD		Benefit	
			Start	End	Total	First 5 years	Total	Irrigation ha	Power MW
Lower Kokcha irrigation and power project, Alishing storage dam project	Amu	Ir, P, En, Re	1385	1397	12	200	1300	166,000	130
Almar storage dam project	North	Ir, WS, En, FC	1386	1391	5	42	42	3,000	
Andkhou water supply project	Amu	WS, En	1386	1389	3	10.5	12.5		
Bakhsh abad storage dam, diversion and main canals project	Hilmand	Ir, FC, P, En, WS, GWR, In, Re	1386	1396	10	150	450	60,000	20
Cheshmashafa storage dam project	North	Ir, P, Re, En, FC	1387	1394	7	70	150	200,000	
Dahala dam 2nd phase study, design	Hilmand	Ir, FC, Re,	1388	1403	15				
Dahala dam rehabilitation and improvement	Hilmand	Ir, FC, Re, WS	1387	1395	8	100	183		
Gambiri irrigation and power project	Kabul	Ir, P, En, Re	1386	1392	6	200	250	8,000	10
Gulbahar storage dam project	Kabul	WS, Ir, FC, P, In, Re, En	1387	1397	10	250	1200	60,000 also providing drinking water to the New City at Dehsabz	120
Hilmand valey development project including Nahr-e Saraj	Hilmand	Ir, En	1387	1395	8	100	200	48,000	
Kafgan storage dam project	Harirod - Morghab	Ir, FC, P	1387	1395	8	50	150		
Kajaki (gate installation) irrigation and power project	Hilmand	P, Ir	1387	1390	3	250	250	75,000	110

**TABLE 6: LISTING IDENTIFIED MAJOR INFRASTRUCTURE PROJECTS**

Name of Projects	River Basin	Purposes*	Implementation, years			Cost estimate in Million USD		Benefit	
			Start	End	Total	First 5 years	Total	Irrigation ha	Power MW
Kalagoosh storage dam project	Kabul	Ir, Re	1387	1393	6	120	150		
Kama irrigation and power project	Kabul	Ir, P,	1387	1394	7	200	400	12,000	45
Kamal khan flood protection diversion project	Hilmand	FC, Ir, En, Re	1387	1391	4	400	400	119,000	9
Kilagai storage dam project	Amu	Ir, P, Re, En, In, FP	1386	1393	7	100	350	90,000	50
Machalghoo Storage Dam	Hilmand	Ir, P, En, FC	1387	1393	6				
Pashdan storage dam project	Harirod-Morghab	Ir, FC, In, Re, En, GWR	1386	1391	5	82	82	5,000	
Pump schemes project	Amu, Panj	Ir	1387	1392	5	30	30	10,000	
Salma Storage dam project implementation	Harirod-Morghab	Ir, FC, Re, In	1384	1389	5	80	80	73,000	42
Shah wa aroos storage dam project	Kabul	WS, Ir, P, Re, En, In, FC, GWR	1386	1390	4	44	44	3,000	1.5
Shahtoot storage dam and water supply Project	Kabul	WS, Ir, P, Re, En, In, FC	1387	1394	7	100	100	12,000 Also, provides drinking water to the first phase of the New City at Dehsabz	
Storage dam on bamyan River	Amu	Ir, FC, P	1387	1394	7	50	150		
90 small and medium size storage dams	all		1386	1401	15	200	1000	100,000	
Upper Amu darya diversion project	Amu	Ir, P, WS, En	1387	1400	13	100	2700	500,000	1000
Worsaj storage dam, irrigation and power project	Amu	Ir, P, En, Re, FC	1387	1397	10	80	250	30,000	50

**TABLE 6: LISTING IDENTIFIED MAJOR INFRASTRUCTURE PROJECTS**

Name of Projects	River Basin	Purposes*	Implementation, years			Cost estimate in Million USD		Benefit	
			Start	End	Total	First 5 years	Total	Irrigation ha	Power MW
Investigation for ground water of Charikar City	Kabul	WS	1387	1388	5	1.4	1.4		
Investigation for ground water of Kunduz City	Amu	WS	1389	1390	5	1.11	1.11		
Investigation for ground water of Mazar Sharif City	North	WS	1391	1392	5	1.08	1.08		
Inventory survey of ground water in Mazar-e Sharif city	North	WS	1387	1392	5	0.1	0.1		

Note: WS-Water Supply, Ir-Irrigation, P-Power, FC-Flood Control, In-Industry, Re-Recreation, GWR-Ground Water Recharge, En-Environment

## NATIONAL RIVER BASIN MANAGEMENT

The new water policies and corresponding legislation have four major components:

- Integrated Water Resources Management – planning, development and management of water resources for use in different sectors (drinking water, agriculture, mining, industry, etc.) will be integrated,
- River basin approach – the natural river boundaries will be used as demarcation for the management of the water resources and the related institutional set-up,
- Splitting functions – water resources management recognizes three levels of functions: legal & policy functions by Ministry, organizational functions by river basin management and operational functions by operators (e.g. outsourcing of O&M) and service providers; and
- Stakeholder participation in water resources management at river basin level.

These changes can best be introduced in combination with rehabilitation of damaged and/or improvement of infrastructures for irrigation and improvement of livelihood. The river basin programs supported by EC and ADB, are clear examples of different activities in one program – water management institutional set-up, rehabilitation of irrigation infrastructures, upper-catchments protection, social water management, etc. –with the integration of the different activities as one of their objectives. These programs form an excellent step towards the introduction of river basin management and provide opportunities to develop procedures for the establishment of the future institutions, for the organization of water users and training of local representatives in water management aspects. Experience from the programs shall be used to draft additional regulations and guidelines.

The ongoing projects of the National River Basin Management Program have taken important steps towards spreading the understanding at the Ministry level and by technical personnel on the ground of the importance of the river basin approach for increasing productivity, cost efficiency and effectiveness in the Water Sector as well as sustainability of water use. The response of water users and other stakeholders in the River Basins concerned has been positive as they see decentralization and participation as a way of making government personnel more accountable to users, making infractions against formal and traditional laws and rights transparent to communal and government authorities and reduce conflicts and the use of power and bribes to pursue individual goals and interests.

The on-going process of increased engagement and participation of women and sensitizing stakeholders to gender issues at all levels on the new aspects of water management, while creating the infrastructural and institutional basis for the proposed River Basin Management approach, needs to be emphasized, and ample time and financial resources need to be allocated in the projects/programs for institutional reform and capacity building.

## IRRIGATION REHABILITATION

Over the last two decades many of the more important infrastructures associated with the agriculture sector in Afghanistan were badly damaged or destroyed. The infrastructures which are being prioritized for rehabilitation are in the fields of irrigation, storage, processing, markets, energy, communication, road and transportation. The program focuses on creating an enabling environment for private sector investment and commercialization. Particular priority is being given to investment in processing industries which result in local value addition and thus create job opportunities and increase farmers' incomes. Sustainable, community-based management of irrigation systems, physical rehabilitation of

infrastructures, the development of appropriate regulatory frameworks and capacity development are some of the crucial areas requiring immediate attention to improve the irrigation sector

In 2002 several projects to meet the immediate needs for irrigation infrastructure were developed, which are still going on. Although these projects mainly focus on the infrastructure, they still provide a significant input to the development of the water resources and related issues like the rehabilitation of the hydrometric network for data collection on river flows and weather. Status of emergency irrigation rehabilitation projects is shown in the below figure.

#### Components of the irrigation rehabilitation

program for the period 2008 - 2013 are:

- Rehabilitation of Nationwide Small, Medium and Large Traditional Irrigation Schemes
- National Emergency Irrigation Schemes

#### Rehabilitation of Helmand Valley Project

- Emergency Flood Control (Protection /Water Conservation "Gabion Work")
- Emergency Infrastructure Reconstruction Project, Consultancy for Water Supply and Sanitation

#### **URBAN WATER SUPPLY AND SANITATION (MID-TERM PROGRAM)**

Upgrading of water supply in Kabul and other urban areas has already resulted in improved health and living conditions. Nevertheless, water demand is still higher than present provisions, and cost-recovery through user-charges remains an important issue. Donor support to water and sanitation policy formulation has yielded an Urban Water Policy and Institutional Development Plan. To improve water and sewerage services, the Central Authority for Water Supply and Sewerage (CAWSS) will be restructured into a corporation, AUWSSC.

Feasibility Study Reports for Water Supply for several cities have been developed with the active support of several donors. Based on these reports; investments are planned spreading over a reasonable period. Capacity building and development of standards will also go as sub components in this approach. Several donors have committed funding to Kabul Water Supply and some key provincial cities. More support is needed to provide this basic necessity – a life saving service. This requires planning and working in phases. Water is a key entry point for donors and local institutions to win their hearts. Operational improvement is another major thrust area which is possible only with a range of capacity building programs and cross subsidies. The ministry is keen to aim at 50% water supply coverage for Kabul and 30% for other cities by 2010 (ANDS Benchmarks). However, donor support is the key. As a rough estimate, more than 30 cities don't have piped water supply systems, yet.

Sanitation is another high priority area. The ANDS Benchmark calls for a 50% improvement in Kabul and 30% in provincial cities by 2010. To achieve MDGs and other indicators, sanitation has to be coordinated with Water Supply improvements. So far little work has been done. Some support on solid waste management support has been made available to Kabul. There is a need to equip other cities with tools, vehicles, men and technology to improve their environments. As such, investment in sanitation is an urgent need.

#### **RUWATSAN**

**THE RURAL WATER SUPPLY AND SANITATION PROGRAMME (RuWATSan)** aims to enhance health by reducing death and disease through waterborne diseases allowing individuals to fully participate and strengthen their livelihood strategies, through the provision of sustainable access to potable water sources and sanitation facilities and improve public hygiene and environmental sanitation in rural communities.

In addition, the RuWatSan programme seeks to strengthen the capacity of rural communities for service delivery, operation and maintenance and the sustainable use of water supply and sanitation facilities.

This is carried out through the construction of water or sanitation facilities packaged with community mobilization, health and hygiene education as well as the repair and maintenance training to maximize health benefits and ensure sustainability. Direct implementation is carried out by Facilitating partners (NGOs and the private sector) with regulatory guidance and oversight from MRRD. All these activities are aiming to extend access to drinking water to 90% of the villages and sanitation to 50% with special attention to the quality standard of toilet construction.

The programme has also established mechanisms to ensure that decision-making regarding sub-project selection is consultative and activities do not overlap with those undertaken by other development activities in their respective sectors.

#### RIVERBANK PROTECTION

Virtually every year the major rivers in Afghanistan are flooding; inundating large areas, damaging crops and destroying property. Erosion of riverbanks resulted in many thousands of hectares of productive arable land being washed away. Even during periods of lower flows, the soft alluvial banks are continually undermined by the current, resulting in land slipping into the river. Given the current economic situation in Afghanistan it is impracticable to try and control the entire length of the large rivers. The riverbank protection program is providing emergency interventions as short term measures, and identifying those reaches at greater risk of bank erosion and devising appropriate and economically viable measures to minimise the risk and safe guard valuable property and assets.

#### "FOOD SECURITY FOR ALL" (AGRICULTURE PROGRAM)

The most essential role for an agricultural economy is to assure access to an adequate supply of diverse foods for the nation's people to live a healthy and active life. Food security can be achieved by improving the food supply - through domestic production and productivity gains, commercial imports and donor aid – and by increasing households' ability to purchase food -through improved physical access to food and increased income.

Several agricultural programs are currently supporting improvements in staple supply by:

- testing and introducing improved varieties for wheat, potatoes, and other staple crops
- training farmers on improved farming methods
- improving access to quality seed through development of private seed enterprises
- improved access to fertilizer
- improving storage facilities at household, community and provincial levels

The success of stable production interventions is linked to close collaboration between management and protection of the natural resource base and the improvement of rural infrastructure and irrigation.

#### PROVINCIAL CONSULTATIONS' PRIORITIES

This Sector Strategy incorporates feedback and comments from the Sub National Consultations (SNCs) and as such is a response to the people of Afghanistan's vocalized needs and development goals, both nationally and with provincial emphasis. The Sub National Consultations ensured public participation in the country's development process. Provincial representatives were invited to ask for their perception of the state of development in the eight ANDS pillars in

their province. The water resources strategy was presented by MEW. Based on these consultations the Provinces shared their priorities for inclusion in the water sector strategy. These priorities will be included in the different sector programs and implementation plan. With representatives from all levels of Afghan society, including 47% participation by women, the Sub National Consultations and the resulting Provincial Development Plans have contributed public support to the development of the Strategies.

#### PRIORITIZED AND COSTED PROJECTS AND PROGRAMS

Prioritized and costed projects and programs are discussed separately under the water sector strategy implementation program.

Of special note is the requirement to integrate the water infrastructure projects for Dehsabz into the overall water sector prioritized program.



# CHAPTER 6

## CROSS CUTTING ISSUES

### Cross Cutting Issues

Major cross cutting issues are to be both directly and indirectly addressed through implementation of the on-going and planned programs. These include the following:

#### Environment

The environmental protection section under cross-cutting issues applies primarily to biodiversity. However, the water strategy, through its resulting programs and institutional structures, is an important vehicle for environmental mainstreaming of related policies, regulations and laws. The Environment Law establishes a framework for the conservation and productive use of natural resources and grants enforcement and permitting rights to the government, primarily NEPA.

#### Counter Narcotics

Implementing a strong Water Strategy program with extensive user participation should encourage dissemination of fundamental anti-narcotics sentiments. By enhancing water use efficiencies, and by education programs deployed through water user associations, an effective negative impact should be affected to dissuade both production and use of narcotics. Promotion, demonstration and introduction of alternative irrigation systems, alternative crops, especially higher value crops to compete with poppy, and different agricultural systems is foreseen to contribute to food security, population stability in the rural areas, improved environmental conditions and increased Diversification of the agriculture base.

#### Gender

Gender issues are also addressed in a much more direct and positive manner. Particular improvements include

- Employment opportunities ranging from unskilled labor to highly skilled-professionals.
- Multifaceted improvements to the standard of living, resulting in increased productivity.
- Improved health standards

#### Anti Corruption

Adoption of a River Basin administrative structure should decentralize traditional mechanisms which have been prone to foster potential corruption. A prime ingredient to the growth of corruption is of course marginal subsistence with low resource remuneration. By benefiting from the many enhancements to be found in an effective water strategy policy, properly implemented, growth in the moral fiber of society should prevail, and corruption should subside.

#### Capacity Building

Capacity building is essentially composed (or targeted at) of three basic components: Institutional strengthening, Organizational strengthening, and Individual strengthening. The proposed capacity building programs for the water sector will address all three of these. And, each component will be further sub-divided amongst the various sub sectors that are involved. These are principally in water resources management, rural and urban water supply, and irrigation.



# CHAPTER 7

## IMPLEMENTATION FRAMEWORK

### A. Risk Assessment

1. Political will and supportive cooperation to introduce new WRM concepts.
2. Commitment of the Government
3. Respect for new rules and regulations
4. Availability of professional staff
5. Security improves
6. Funding of large works and institutional development is made available
7. Extreme natural hazards
8. Commitment government and communities
9. Financial resources
10. Non-compliance rules & regulations
11. Security and political instability

### B. Monitoring and Evaluation Process

An effective monitoring and evaluation (M&E) process supports both project management and engages stakeholders in understanding specific project(s) and program(s).progress, learning from achievements and problems, and agreeing on how to improve both strategy and operations. Primary functions of M&E are to ensure improvement, orientate critical reflective thinking, maximize impact of development, and

demonstrating accountability of development. The following guidelines have been established to set-up an effective M&E process:

- a. Setting up or designing the M&E processes
  - Identify and select the most effective methods.
  - Methods should guide project strategy and must ensure effective operations.
  - At each stage of the project cycle, consideration should be given to a set of key M&E tasks.
  - A detailed M&E plan should be drawn up during the project start-up and mobilization phases and clearly documented.
  - The M&E method will need to be monitored and updated throughout the life of the project.
  - Gathering and managing information
  - Identify relevance, effectiveness, efficiency, impact and sustainability of actions.
  - Using experience and information more effectively to improve action
  - Collecting and subsequently checking, sampling, recording, collating and analyzing data .
  - Method used must be technically and financially feasible.
  - Participatory approach to data collection and processing to effectively utilize primary stakeholders is preferable.
- b. Communicating and reporting results

- Identify what needs to be communicated as part of the M&E process, how and to whom.
- Primary audience should be project managers, M&E officers, responsible ministries and impacted stakeholders. For details refer to Annex II (Monitoring Matrix)

## DRINKING WATER

### Access to safe water

In MRRD-NRVA 2005, safe water is considered to be water from a protected

source. Several options were mentioned in the survey:

**Table 7**

Safe Water (protected)	Unsafe Water
Hand pump - In public	Shallow open well - public
Hand pump - in compound	Shallow open well - in compound
Bored well - hand pump	Spring - unprotected
Bored well motorized	Arhad
Spring - protected	Karez
Pipe scheme - gravity	River Lake Canal
Pipe scheme motorized	Kanda
Pipe scheme - municipal	Nawar Dand Dam
Bowser/water tanker	Pool Howz
	Drainage
	Other

**Nationwide**, 31% of the households have access to safe drinking water. Kuchi households have lowest access to safe drinking water (16%), while rural households have 26% and urban households 64%. As minimum requirements 20 l/day/capita for rural populations and 50 l/day/capita for urban populations are considered.

### Payment for drinking water

**Nationwide**, 5% of the households pay for the main source of drinking water. Two percent of Kuchi and rural households report paying for drinking water. In contrast, 16% of urban households pay for their main source of drinking water.

Amount paid for drinking water. (Survey June-August 2005)

**Nationwide**, the monthly payment for drinking water from the main source averages 181 Afs during the months of survey. **Kuchi** households show the highest monthly payment (772 Afs), purchasing from water tankers. Rural households average 188 Afs, which is higher than for **urban** households (162 Afs)

### Time to collect water

**Nationwide**, 82% of the households obtain water from their communities (almost no time); 14% obtain it near their communities, within one hour or less; 2% take between 1 to 3 hours; and 1% require 3 to 6 hours. See also the following

Table 8

Categories	No time - in community	Near community-1 hour or less	1-3 hrs	3-6 hrs	6-12 hrs	1 day
Kuchi	56	34	6	3	1	0
Rural	81	15	3	1	0	0
Urban	94	6	0	0	0	0
National	82	14	2	1	0	0

### Sanitation – toilet facilities

Nationwide, the traditional covered latrine is reported as the most commonly used toilet facility (57%), followed by *dearan/sahrah*, which is a place within or an outside compound for waste products, animal manure, fire end products and used as toilet as well (13%), open fields or

bushes (12%), and open pits (10%). Improved latrines were reported in only 5% of households, and flush toilets were reported in only 2% of households. Thus, if the improved latrines and flushing toilet facilities are defined as “safe”, then only 7% of households nationwide have access to safe toilet facilities.

Table 9

Categories	None/open field/bush	Dearan / (area in compound -but not pit)	Open pit	Traditional covered latrine	Improved latrine	Flush toilet
Kuchi	43	17	26	14	0	0
Rural	13	15	10	58	3	1
Urban	0	1	3	67	20	9
National	12	13	10	57	5	2

### Irrigation

Agriculture is the most important source of income in Afghanistan. Almost one half (47%) of the households are engaged in one or more forms of livestock, followed by non-farm labour (33%), trade (27%) and livestock (23%). Opium activities

constitute only 4%, but they are widespread. Due to the sensitivity of capturing precise information on opium it may be under reported. The most important crops (%) on irrigated land are shown in the following table.

Table 10

Frequency *	First most important crop	Second most important crop	Third most important crop
+++	Wheat (89)	Maize (44)	Alfalfa (20)
++	Opium (3)	Barley (19)	Melon/watermelon (8)
+	Vegetables (1)	Rice (7)	Potato (7)

\* The top three frequencies within the first, second and third most important crops. NRVA 2005

## INDUSTRIAL USE

Presently the existence of industries in Afghanistan is in a state of change – from State-Owned Enterprises (SOE) to private entities – both factories and mines. The government is assisting in the process through ministries and a specialized agency.

There are a range of older factories dating from Soviet days – textiles, cement, furniture, shoes, cottonseed oil and others. There are also a range of new factories just beginning – bottling, cheese, yogurt and other products.

Many factories in Afghanistan are located in industrial parks. This is supported by government and includes provision of land and water. Wells are dug and water is supplied to public industry with no charge and a fee is charged to private user. There are 21 industrial parks planned in 17 provinces. 7 were established in the 1960s and 1970s, but are without necessary infrastructure and proper management. Many small industries like carpentry, car mechanics, steelworks fabrication and black smiths are located in crowded areas of towns and villages.

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Millennium Development Goals Report – Vision 2020	Islamic Republic of Afghanistan, Country Report 2005, UNDP	2005

TITLE	SOURCE	DATE
National Disaster Management Plan	Department for Disaster Preparedness	Dec 2003
National Risk and Vulnerability Assessment 2005	Ministry of Rural Rehabilitation and Development & Central Statistics Office	June 2007
Recommendations and Guidelines on Sustainable River Basin Management	RBA TU Delft, Sponsored by Ministry of Housing	Dec 1999
Regional Cooperation Strategy for Afghanistan National Development Strategy (Draft)	Afghanistan National Development Strategy	Oct 2007
Strategy for Institutional Strengthening in Disaster Risk Management in Afghanistan	Department for Disaster Preparedness	Mar 2004
Strategy for Integrated Water Resources Management	World Bank	1998
The Afghanistan Compact	The London Conference on Afghanistan	Feb 2006
The World Bank Participation Source Book	World Bank	1998
Understanding Poverty in Afghanistan, Analysis & recommendations using National Risk & Vulnerability 2005 (Draft)	World Bank's Non-Lending Technical Assistance for Poverty Team	Oct 2007
UNDP Practice Note: Capacity Development	UNDP	2007
Water Evaluation and Planning System (WEAP) – Tutorial	Stockholm Environment Institute	Nov 2007
Water for Life and Livelihoods, Framework for River Basin Planning	Environmental Agency (England)	Feb 2006
Water Resources Growth and Development	World Bank	Apr 2005
Water Sector Development Strategy in Tajikistan	UNDP Office in Tajikistan and Ministries	2006
Water Sector Strategy – Strategic Directions for World Bank Engagement	World Bank	2004

# ANNEX I: WATER SECTOR STRATEGY ACTION PLAN

PILLAR : INFRASTRUCTURE				
SECTOR : WATER RESOURCES				
Expected Outcomes	Policy Action	Category	Time frame	Responsible Agencies
Improved water sector legal and governance structures and institutions in place	Assess, identify, draft, review, debate, resolve, finalize water law and supplementary regulations	Legislation	1387-1388 (2008-2009)	MEW, MAIL., MoM, MoUD, MRRD, NEPA, MoPH
	Conduct appropriate studies, identify specific pilot programs, experimentation, and customize river basin institutional structures.	Institution Building	1387-1389 (2008-2010)	MEW, MAIL, MRRD, MoM, MoUD, NEPA
	Establishment of institutions for hydrometric network in the country	Institution Building	1387-1389 (2008-2010)	MEW
	National urban and rural water supply institutions in place	Institution Building	1387-1390 (2008-2011)	MoUD, MRRD
	Training of staff from various sector ministries on integrated water resources management	Institution Building	Continue	MEW, MAIL., MoM, MoUD, MRRD, NEPA, MoPH
	Establishment of organization and capacity building of River Basin Agencies and Sub-agencies (RBA/SBA) and River Basin and Sub-basin Councils (RBC/SBC)	Institution Building	1387-1388 (2008-2009)	MEW
	Training of SCWAM Technical Secretariat staff	Institution Building	Continue	MEW, MAIL., MoM, MoUD, MRRD, NEPA, MoPH
	Gathering of data socio-economics, geology/groundwater, environment, hydrological, meteorological and others for project development	Institution Building	1387-1389 (2008-2010)	MEW, MAIL., MoM, MoUD, MRRD, NEPA, MoPH
	Development of curriculum in water resources management at local universities/technical colleges	Institution Building	1388-1389 (2009-2010)	MEW, MAIL, MoHE, MRRD, MoM
	Assessment studies for project	Institution Building	Continue	MEW, MAIL, MRRD, MoUD, NEPA, MoPH
	Institute training in HEC RAS and other appropriate modeling techniques	Institution Building	1388-1389 (2009-2010)	MEW, MAIL., MoM, MoUD, MRRD
	Assignment of staff/personnel to consultancy contracts for training	Institution Building	1388-1389 (2009-2010)	MEW, MAIL, MRRD, MoUD, MoM
	Gender discrepancies in various laws systematically uncovered	Legislation/Gender Cross Cutting Issues	1387-1388 (2008-2009)	National Assembly, MoUD, MoJ

PILLAR : INFRASTRUCTURE SECTOR : WATER RESOURCES				
Expected Outcomes	Policy Action	Category	Time frame	Responsible Agencies
	Regional water issues dialogues initiated	Legislation/ RC Cross Cutting Issues	1388-1392 (2099-2013)	MoFA, MEW, MAIL, SCWAM
Sustainable water resources management strategies and plans covering irrigation and drinking water supply developed and implemented.	Initiate appropriate inventory studies, water resources planning studies and basin master plans	Development	1387-1389 (2008-2010)	MEW, MAIL., MoM, MoUD, MRRD, NEPA
	Complete master plan investigations	Development	1388-1389 (2009-2010)	MEW, MAIL, MRRD,MoUD, MoM, SCWAM,NEPA
	Identify, study, design, procure and implement projects	Development	Continue	MEW, MAIL, MRRD,MoUD, MoM,NEPA
	Identify, prioritize, and implement rehabilitation program	Development	Continue	MEW, MAIL, MRRD,MoUD, MoM,NEPA
Water resources for irrigation and Drinking purposes improved.	Enhance achievement tracking procedures and augment NSP resources	Development	1388-1389 (2009-2010)	MRRD
	WUA implementation programming	Development	Continue	MEW, MAIL, MRRD, MoUD
	Strengthen required resources and monitor programs	Development	Continue	MEW, MAIL,MoUD, MRRD, NEPA
	Improve existing drinking water supply systems and build new systems in villages and cities, including Kabul	Development	1387-1389 (2008-2010)	MoUD, MRRD, MoM, MEW
	Rehabilitation of National Hydro-meteorological network	Development	1387-1389 (2008-2010)	MEW
	Development of technical plans, management plans, and implementation strategies for Amu Darya River Basin, Northern River Basin, Harirud- Morghab River Basin, Helmand River basin, and Kabul River Basins,	Development	1388-1390 (2008-2011)	MEW
	Rehabilitation of all small, medium, and large traditional irrigation schemes and strengthen water users association	Development	Continue	MEW, MAIL, MRRD
	Provision of access to water and sanitation facilities to rural people	Development	Continue	MRRD
	Undertake riverbank protection and erosion control works and implement long-term flood control program	Development	Continue	MEW
	Community based natural resource management established	Development/ Env. Cross Cutting Issues	Continue	MEW, NEPA, MRRD, MAIL
	Water resources for irrigation utilized for non-poppy farming	Development/ CN Cross Cutting Issues	1388-1389 (2009-2010)	MEW, MCN, MAIL, MRRD

## ANNEX II: WATER SECTOR STRATEGY MONITORING MATRIX

PILLAR: INFRASTRUCTURE SECTOR: WATER RESOURCES		Indicator	Baseline	Targets
Improved water sector legal and governance structures and institutions in place	Index on the progress of putting in place improved water sector legal and governance structures and institutions in place.	Partially good (improving)	Improved water sector governance by 2013	
Sustainable water resources management strategies and plans covering irrigation and drinking water developed and implemented.	<p>Index on the progress of developing and implementing sustainable water resources management strategies and plans covering irrigation and drinking water.</p> <p>Sustainable water resource management strategies and plans for large projects are continue</p>	Strategies 70% completed Feasibilities studies for large projects are continue	Sustainable water resource management strategies and plans covering irrigation and drinking water supply will be developed by end-2008, and irrigation investments will result in at least 30% of water coming from large waterworks by March, 2011.	
	% of water coming from large waterworks, Index on the improvement of water resources for irrigation and drinking water purposes.	25-30%	10%	TBD
	# of Hydrometric stations, snow gauges and metostation installed and equipped	7 out of 234	Additional 450,000 ha (2013)	2011
	% of lands irrigated through rehabilitated and new water works	1.8 Million Ha	TBD	TBD
	% of sites where 90% of tail-tenders receive enough water on time	Based on recent surveys 20 % of the sites have been reserved	By 2013 sites reserved as suitable drinking water resource	
Water resources for irrigation and Drinking purposes Improved	# of sites reserved as suitable drinking water resource	TBD	TBD	
	% of beneficiaries, by gender, whose technical knowledge and skills for managing irrigation assets have increased considerably	15-18%	30% by end of 2011	
	% of households in other urban areas except Kabul have access to piped water	18-21%	50% (2010)	
	# of water points available for rural households	10119 since establishing Watsan department	TBD	

### ANNEX III: LIST OF PROGRAMS AND PROJECTS

S/N	AFG Budget Ref	Programs / Project title	Project Duration		Breakdown of Requirements (US\$ Millions)				Total Requirement (US\$ Million)	Total Funding (US\$ Million)	Gap (US\$ Million)	Major Donors	Core External	Responsible Agency		
			Start	End	1387	1388	1389	1390								
1	AFG / 0336101	Rehabilitation of 174 National Hydrological Stations through out the Country	1383		5,000	0.70			5,700	5,000	0.700	WB	Core	MEW		
2	AFG / 0336401	Rehabilitation of the Amu Darya River Basin Irrigation Schemes, Western Basin	1383		4,500	3.80			8,300	4,500	3,800	ADB	Core	MEW		
3	AFG / 0336701	Integrated Water Resource Management Feasibility of Lower Kokcha Irrigation Project and M&E of EIRP	1382		5,470	0.62			6,090	5,470	0.620	ADB	Core	MEW		
4	AFG / 0337301	Design of Kama Irrigation and Power Project	1383		0.660				0.660	0.660	0.000	WB	Core	MEW		
5	AFG / 0337701	National Emergency Irrigation Schemes Rehabilitation program	1383		50,000	75.00	100.00	125.00	400,000	0.900	399,100	AFG	Core	MEW		
6	AFG / 0354601	Rehabilitation of the Country Rehabilitation of Nationwide Small, Medium and Large Traditional Irrigation Schemes	1382		1391	5,000	40.00	45.00	50.00	65.00	205,000	5,000	200,000	ADB	Core	MEW
7	AFG / 0457901	Feasibility Study of Small and Medium Dams	1383		15,680					15,680	15,680	0.000	AFG, WB	Core	MEW	
8	AFG / 0594301	Feasibility Study for Upper Amu Daria Irrigation Project	1384		3,240	2.06			5,302	3,240	2,062	AFG	Core	MEW		
9	AFG / 0602101	Feasibility Study for Ardkhoy Drinking Water Project	1384		1,000				1,000	1,000	0.000	AFG	Core	MEW		
10	AFG / 0602104	Water Project Feasibility Study for Kelegai Dam and Kalagai Dam	1384		2,000	3.00			5,000	2,000	3,000	AFG	Core	MEW		
11	AFG / 0602105	Feasibility Study for Bakrshabab (Farah) Dam Project	1384		1,170	25.00	50.00	75.00	201,170	1,170	200,000	AFG	Core	MEW		
12	AFG / 0602106	Feasibility Study for Gulbahar Storage Dam and Panjshir River Storage Dam	1384		1,000	35.00	55.00	70.00	95,00	256,000	1,000	255,000	AFG	Core	MEW	
13	AFG / 0663801	Feasibility Study of Shahtoot Irrigation Dam	1385		1399	0.730	25.00	75.00	100.00	125.00	325,730	0.730	325,000	AFG	Core	MEW
14	AFG / 0710701	Construction of Power and Irrigation Dam	1385		1391	0.720	25.00	25.00	25.00		100,720	0.720	100,000	AFG	Core	MEW
15	AFG / 0807001	Construction of Power and Irrigation Dam of Shah wa Aros in Shakardara District Supervision and Construction of Almar Irrigation Storage Dam in Faryab Province	1387		1389	3,000	17.00	10.00			30,000	0.000	30,000	Core	MEW	
16	AFG / 0807101										35,900	0.000	35,900	Core	MEW	

S/N	AFG Budget Ref	Programs / Project title	Project Duration		Breakdown of Requirements (US\$ Million)				Total Requirement (US\$ Million)	Total Funding (US\$ Million)	Gap (US\$ Million)	Major Donors	Core External	Responsible Agency	
			Start	End	1387	1388	1389	1390							
280	A F G / 080720/01	Supervision and Construction of Pashtdan Power- and Irrigation Dam in Herat Province	1387	1389	5,000	37.30	39.50			81.800	0.000	81.800	Core	MEW	
17	A F G / 080730/01	Design of Gambari Desert Irrigation Project (Nangarhar) Feasibility Study of Medium and Large Dams (Warsage in Takhar, Kafgaan in Herat, Chashma Shifa in Balkh, Alishang and Kalagosh in Laghman)	1387	1392	1,200	40.00	50.00	65.00		176.200	0.000	176.200	Core	MEW	
18	A F G / 080740/01	Medium and Large Dams (Warsage in Takhar, Kafgaan in Herat, Chashma Shifa in Balkh, Alishang and Kalagosh in Laghman) Creation of Green Zone along the Lashkari Dike Rehabilitation of 5 Storage Dam in 3 provinces (Ghazni, Logar and Paktiya)	1387		3,000	2.00					5.000	0.000	5.000	Core	MEW
19	A F G / 080760/01	Feasibility Study of Anu River Protection Walls	1387		0.240	1.04	0.83				2.105	0.000	2.105	Core	MEW
20	A F G / 080770/01	Storage Dam in 3 provinces (Ghazni, Logar and Paktiya)	1387		0.800	0.40					1.200	0.000	1.200	Core	MEW
21	A F G / 080780/01	Feasibility study and hydropower plant on Kunar river	1385	1393	0.590	25.00	75.00	125.00			350.590	0.590	350.000	AFG	Core
22	A F G / 066420/01	Participatory Management of Irrigation Systems (PMIS) in the Kunduz River Basin Catchment	1386		0.23	0.00	0.00				0.227	0.000	0.227	EC	External
23	A F G / 071880/01	Development Programme Shahrawan Irrigation Canal project in Takhar Province – under KRBPP Afghanistan Provision of Technical Assistance In Support of the Anu Darya River Basin Management Program - Kokcha and Panj Watersheds, Badakhshan,	1386		0.81	0.00	0.00				0.808	0.000	0.808	EC	External
24	A F G / 071920/01	Shahrawan Irrigation Canal project in Takhar Province – under KRBPP Afghanistan Provision of Technical Assistance In Support of the Anu Darya River Basin Management Program - Kokcha and Panj Watersheds, Badakhshan,	1386		0.46	0.00	0.00				0.460	0.000	0.460	EC	External
25	A F G / 072070/01	KRBPP Afghanistan Provision of Technical Assistance In Support of the Anu Darya River Basin Management Program - Kokcha and Panj Watersheds, Badakhshan,	1386		1.47	0.00	0.00				1.470	0.000	1.470	EC	External
26	A F G / 072090/01	Afghanistan Khanabad Irrigation Scheme Rehabilitation Parwam Irrigation Project Rehabilitation Work (Phase II & III) The Salma Dam Project Feasibility Heart Province	1386		1.83	2.99	0.00				4.824	0.300	4.524	EC	External
27	A F G / 082060/01	The Salma Dam Project Feasibility Heart Province	1386		14.80	0.00	0.00				14.800	0.000	14.800	CHN	External
28	A F G / 033720/01				28.84						28.840	0.000	28.840	External	MEW

280 Afghanistan National Development Strategy (ANDS)

S/N	AFG Budget Ref	Programs / Project title	Project Duration		Breakdown of Requirements (US\$ Millions)				Total Requirement (US\$ Million)	Total Funding (US\$ Million)	Gap (US\$ Million)	Major Donors	Core External	Responsible Agency	
			Start	End	1387	1388	1389	1390							
31	A F G / 0746901	The Study on Groundwater Resources Potential in Kabul Basin Provincial Towns WSS (Water Supply System) -14 towns FC - Kabul II Water Supply	1386		0.02	0.02	0.00				0.038	0.000	JPN	External	MoM
32	AFG / 0583901	Safe Drinking Water	1383		21.700					21.700	19.800	1.900	ARTF	Core	MoUD
33	A F G / 0800001	Safe Drinking Water	1386		9.25	0.00	0.00			9.250	9.250	0.000	GER	External	MoUD
34	0928101	Mainama town water project	1387		13.50	0.00	0.00			13.500	13.500	0.000	USAID	External	MoUD
35	A F G / 0830901	National Rural water supply, Hygiene education and Sanitation Programme.	1387		1.70	0.00	0.00			1.700	1.700	0.000	NOR	External	MoUD
36	AFG / 0360101	National Rural water supply, Hygiene education and Sanitation Programme.	1381		62.85	48.50				111.350	16.920	94.430	ARTF, JPN, Swiss, UK- DFID, UNICEF	Core	MRRD
37	A F G / 0553201	The Rural Recovery through community based irrigation Rehabilitation WATER SUPPLY IN FARYAB PROVINCE Kamal Khan Irrigation Project (Nimroz) Upper Amu Dara/Krush Tepa) Water Project Name Siraj (Helmand) Dam Project Cheshma-e-Shifa	1383		1.97					1.970	1.970	0.000	ADB	Core	MRRD
38	AFG / 0819901	Water Project (Balkh) Amu and Puni Rivers (North) Dahlia Dam (Kandahar) Macnaghlu (Paktia) Irrigation Scheme	1387		3.70	1.20				4.900	4.900	0.000	NOR	External	MRRD
39			1393		25.00	50.00	75.00	75.00		225.00	0.00	225.00			MEW
40			1399		25.00	75.00	150.00	175.00		425.00	0.00	425.00			MEW
41			1392		10.00	25.00	40.00	50.00		125.00	0.00	125.00			MEW
42			1391		15.00	25.00	50.00	60.00		150.00	0.00	150.00			MEW
43			1391		15.00	25.00	50.00	50.00		140.00	0.00	140.00			MEW
44			1391		25.00	50.00	75.00	35.00		185.00	0.00	185.00			MEW
45			1389		3.00	20.00	52.00			75.00	0.00	75.00			MEW
		Total:			280.13	518.53	807.33	1,010.00	1,145.00	3,760.98	166.87	3,594.12			

## ANNEX IV: LIST OF PROVINCIAL PRIORITY PROJECTS (WATER SECTOR)

No.	Project Name	Project Location	Responsible agency	Project Duration (year)	
				Start	End
1	Excavation of shallow wells (20).	Balkh	MoM/MEW	1387	
2	Establishment of canal system in centre and Zary district.	Balkh	MEW/MAIL	1387	
3	Reconstruction of previous water supply system for provision of drinking water.	Balkh	MoUD/IDLG/MEW	1387	
4	Construction and reinforcement of the Amo river protection walls (2km, 200,000 beneficiaries).	Balkh	MEW	1387	
5	Provision of drinking water	Bghlan	MoUD/IDLG/MEW	1387	
6	Construction of protection wall at the edges of the river in 3230 meter, along the Dasht-i-Rubat, Munawar Jan, Deh Naw, Efsichi, Shashan and Fering. Will be beneficial to 30000 families.	Bghlan	MEW	1387	
7	Construction of water tank for kochies 100000 will be beneficiary in Azim Shor, Dasht e Gabr Balai Hesar.	Bghlan	MRRD/MoUD/MEW	1387	
8	Construction of dam, 30 metres, Fering district (30000 families as beneficiaries).	Bghlan	MEW	1387	
9	Construction of dam in Andarab Dehsalah.	Bghlan	MEW	1387	
10	Construction of dam in Tangee Nahrin (200m).	Bghlan	MEW	1387	
11	Rehabilitation of Nahr-i-Khushk in Larkhwabi of Dahana-i-Ghori.	Bghlan	MEW	1387	
12	Digging of deep wells in first district of Pul e Khomri.(100m )	Bghlan	MoM/MEW	1387	
13	Digging of deep wells in Zarkum.	Bghlan	MoM/MEW	1387	
14	Reservoir for 6 villages of Shibar, (100000 beneficiaries)	Bamyan	MEW/MRRD	1387	
15	Construction of protection wall in Kahrud district (4 km,10000 families as beneficiaries).	Bamyan	MEW	1387	
16	Construction of water supply network, in the centre of Bamyan province (15000 beneficiaries).	Bamyan	MoUD/IDLG/MEW	1387	
17	Construction of water supply network in the centre of Bamyan province (30000 families as beneficiaries).	Bamyan	MoUD/IDLG/MEW	1387	
18	Construction of the canal of Piazi at Urgo, on 10000 Jirib of land.5000 families as beneficiaries.	Badakhshan	MEW/MAIL	1387	
19	Establishment of drinking water for the Namaz Gah ( Mosque) at the Namaz Gah Kasham. ( 6 km for 800 families)	Badakhshan	MRRD/	1387	
20	System of drinking water at village of Gandom Qool ( Kalan Kasham) (10 km for 2000 families).	Badakhshan	MRRD	1387	
21	Establishment of 10 km drinking water supply system in Dara Ghaib, Kasham district(1800 families as beneficiaries).	Badakhshan	MRRD	1387	
22	Reconstruction and strengthening of Saltarga Stairmy Gizab district canal. (10 km).	Daikundi	MEW/MAIL	1387	
23	Digging of 3 deep wells in Shiring Tagab district.	Faryab	MoM/MEW	1387	

No.	Project Name	Project Location	Responsible agency	Project Duration (year)	
				Start	End
24	Construction of protection walls in Shirin Tagab.	Faryab	MEW	1388	
25	Establishment of canal system in Maimana city. (15km)	Faryab	MEW/MAIL	1387	
26	Digging of deep wells in Khawjan Qool (3 wells)	Faryab	MoM/MEW	1387	
27	Construction of Dadkhowa head work in Khowja Sawozpoosh district Yangiqal village. (One head work)	Faryab	MEW	1387	
28	Construction of protection wall in Bilchiragh , Charmgari, Atawlah, Doghla , Koleyan and Nishar. 12/5 km.	Faryab	MEW	1387	
29	Construction of Bento head work in Pashtonkot district Bento village (100m	Faryab	MEW	1387	
30	Excavation of deep well in Qaisar district (3 wells).	Faryab	MoM/MEW	1387	
31	Provision of irrigation channels for agriculture from the River Amo	Jawozjan	MAIL/MEW	1387	
32	Provision of drinking water for centre & 10 districts with 10 wells and 4 deep wells (200000 beneficiaries)	Jawozjan	MoM/MoUD/MRRD	1387	
33	Construction of diversion dam in Khawaja Ash Kara for reservoir ( Darzab & Qush Tepa ).	Jawozjan	MEW	1387	
34	Excavation of water canal from Morghab river to Jawzjan & Sar-i-Pul provinces (600000 beneficiaries - population of two provinces).	Jawozjan	MEW	1387	
35	Water pipeline from Amu River to Aqcha district and Neighbor districts (400000 beneficiaries population of five districts).	Jawozjan	MoUD/MRRD/MEW	1387	
36	Pipeline for drinking water (25km Khawaja Dokoh district, Qazal Ayeqry Salteq Kalan Aregh villages (16000 beneficiaries).	Jawozjan	MRRD	1387	
37	Connection of Morghab River to Sheberghan River (2km Sancharak district 30000 beneficiaries).	Jawozjan	MEW	1387	
38	Diversion dam in Qarqen district ( 35km60000 beneficiaries).	Jawozjan	MEW	1387	
39	Construction of protection wall (500m in Qush Tepa Darzab Faiz Abad district (6000 beneficiaries).	Jawozjan	MRRD	1387	
40	Digging of 4 deep wells in Shiberghan city.	Jawozjan	MRRD/MoM	1387	
41	Pipeline for drinking water (25km Khawaja Dokoh district, Qazal Ayeqry Salteq Kalan Aregh villages (16000 beneficiaries).	Jawozjan	MRRD	1387	
42	Connection of Morghab River to Sheberghan River (2km Sancharak district 30000 beneficiaries).	Jawozjan	MEW	1387	
43	Diversion dam in Qarqen district ( 35km 60000 beneficiaries).	Jawozjan	MEW	1387	
44	Rehabilitation of dam for the Panjshir, Ghorband and Dashtel river (150000 families as beneficiaries).	Parwan	MEW	1387	

No.	Project Name	Project Location	Responsible agency	Project Duration (year)	
				Start	End
45	Construction of protection wall for water supply canal from Totum Dara till centre of the province (65000 families as beneficiaries )	Parwan	MEW	1387	
46	Construction of Zabir canal in Qala-i-Khwja Bagram (5000 families as beneficiaries)	Parwan	MEW	1387	
47	Development of local head works in Surkh Parsa, Sia Gird, Jabul Seraj and Shaikh Ali districts.	Parwan	MEW	1387	
48	A 22 km extension of the water network.	Parwan	MoUD/MRRD/MEW	1387	
49	Digging of 100 of Shallow wells in the province level.	Parwan	MRRD/MoM	1387	
50	Rehabilitation of Ghorband river from Bagh Afghan to Darazgeerd. 30km	Parwan	MEW	1387	
51	Implementation of 10 water supply projects in 10 villages of Bagram.	Parwan	MRRD	1387	
52	Construction of protection wall in Bazarak, Mala and other villages. (Approx. 2 km.)	Pajshir	MEW/MRRD	1387	
53	Construciton of dam in Tawakh, Anaba, Abdara, Frakh and Zamanko.(45000 beneficiaries)	Pajshir	MEW	1387	
54	Construction of village dams in Rokha , Darai Hisarak, Yawosht Karbashi (8 dam 49km)	Pajshir	MEW/MRRD	1387	
55	Design and survey for canal from Khaniz up to Zamankor. (Approx 15 Km)	Pajshir	MEW	1387	
56	Construction of protection wall in Centre of province Bazarak and Paranda Approx 12 Km.	Pajshir	MEW	1387	
57	Construction of irrigation canal from Warskwal up to Shalkacha. (20 km)	Pajshir	MAIL/MEW	1387	
58	Establishment of water reservoir for dry season water supply (3000 families as beneficiaries, Gailan district).	Ghazni	MEW	1387	
59	Construction of Tege dam (Nava district, 300m, and 3000 families as beneficiaries).	Ghazni	MEW	1387	
60	Reconstruction & cleaning of Sar Deh Dam ( 57 km, beneficiaries 80000 in Andar and Gero districts)	Ghazni	MEW	1387	
61	Protection wall 30km Andar Shapit Macool Nawa MoPHamad khil Khwaja Umery Do Doab Qala Amiry (20000 families as beneficiaries).	Ghazni	MEW	1387	
62	Digging of 155 wells for drinking water in Zanjad Waghaz Nuwa Muqur Gailan Qura 4650 beneficiaries	Ghazni	MRRD/MoM/MEW	1387	
63	Construction of water saver dam (Khaki Dam)	Ghazni	MEW	1387	
64	Construction of protection wall in the area of Mullah Noh Baba, in 400 meter,	Ghazni	MEW	1387	
65	Construction of two small dams in Kushk Rabatsangee District (Khoshab Sya) and Pashtoon Zarghon district (Kambraq).	Hirat	MEW/MRRD	1387	
66	Digging of shallow wells in districts and cities (125 wells).	Hirat	MRRD/MoM/MEW	1387	
67	Construction of Ainak dam in Kushk and Rubat Sangi districts.	Hirat	MEW	1387	
68	Construction of Pashtan dam in Injil district.	Hirat	MEW/MRRD	1387	

No.	Project Name	Project Location	Responsible agency	Project Duration (year)	
				Start	End
69	Construction of Gabion protection walls in 15 districts (10 km).	Hirat	MRRD/MEW	1387	
70	Digging of deep wells in Adraskan and Ghoryan district ( 2 wells).	Hirat	MoM/MEW	1387	
71	Construction of Pashtun dam in Injeel district (180000) beneficiaries.	Hirat	MEW	1387	
73	Construction of reservoir in Eshkamish district (20000 beneficiaries)	Takhar	MEW/MRRD	1387	
74	Digging of shallow wells (20 pcs)	Takhar	MRRD/MoM	1387	
75	Digging of drinking water wells.	Takhar	MRRD/MoM	1387	
76	Digging of shallow wells (30 pcs).	Takhar	MRRD/MoM	1387	
77	Construction of drinking water network in Warsaj district.	Takhar	MRRD	1387	
78	Digging of deep well (25 pcs).	Takhar	MRRD/MoM	1387	
79	Digging of 20 pcs of shallow well.	Takhar	MRRD/MoM	1387	
80	Digging of medium depth wells in all districts of Takhar province (70 wells).	Takhar	MRRD	1387	
81	Extension of water supply pipe in Rustaq district (2000 beneficiaries).	Takhar	MRRD	1387	
82	Construction riverside protection wall (5km, 6000 families as beneficiaries).	Takhar	MEW	1387	
83	Construction and piping of drinking water in Ghaira district (3000 beneficiaries).	Takhar	MRRD	1387	
84	Construction of water dam in Eshkamish district (10,000 beneficiaries).	Takhar	MEW	1387	
85	Sustainability of agricultural head-works in Tagab-i-Bedcha Aab village (10,000 beneficiaries).	Takhar	MEW/MAIL/MRRD	1387	
86	Sustainability of flood protection in Yangi Qala district.	Takhar	MEW/MRRD	1387	
87	Provision of drinking water projects in Hazar Samoj district.	Takhar	MRRD	1387	
88	construction of Dam About 300x500M in Sanglakh JalrizDistrict Beneficiaries 280000	Wardak	MEW	1387	
89	Construction of Dam in Baghak about 250x300M	Wardak	MEW	1387	
90	Construction of Dam in Centre of Beh Sood 1 Beneficiaries 150000	Wardak	MEW	1387	
91	Construction of Headwork's in Pacheragam District About20 Headwork's Beneficiaries 65000	Nangarhar	MEW	1387	
92	Cleaning of Karez system in Ghani Khil 36 Kariz (12000beneficiaries).	Nangarhar	MRRD	1387	
93	Construction of Small Dams and Canals in Nazyan District About 10 Canal & Small Dams 60000Beneficiaries	Nangarhar	MEW/MRRD	1387	
94	Clining of Kariz system in Rodat District 20 kariz Beneficiaries 50000	Nangarhar	MRRD	1387	
97	Construction of the perimeter wall of Nangarhar university.	Nangarhar	MEW	1387	
98	General Head work of Khiwa (Sar Band) in Khiwa district. Beneficiaries 120000	Nangarhar	MEW	1387	
99	Wazir Tangi head-work and Water Reservoir in district Khogiani.Beneficiaries 170000	Nangarhar	MEW	1387	

No.	Project Name	Project Location	Responsible agency	Project Duration (year)	
				Start	End
100	Construction of Head Works in Peache Tangi Achen District Beneficiaries 70000	Nangarhar	MEW	1387	
101	Construction of the Bandi Park Head works Yousaf Khil district (water storage system OR canalization) 125m (95000 beneficiaries).	Paktika	MEW	1387	
102	Construction of the Bandi Wazmi Head works Tarvi Urgon district (water storage system OR canalization) 50m (90000 beneficiaries).	Paktika	MEW	1387	
103	Construction of Asia Dadullah headworks (Reservoir and canalization system) in Srah Waza (80m, 50000 beneficiaries)	Paktika	MEW	1387	
104	Construction of Dost MoPHammad headworks Reservoir and canalization system) in Waza (140m 50000 beneficiaries).	Paktika	MEW	1387	
105	Construction of Patana headworks (reservoir and Canalization system) in central Paltawe (120m, 40000 beneficiaries)	Paktika	MEW	1387	
106	Survey and construction of head-work of a water dyke in Estalef valley, Estalef district.	Kabul	MEW	1387	
107	Construction of a dam in Lalandar district.	Kabul	MEW	1387	
108	Survey and digging of Parwan Canal from Panjshir river.	Kabul	MEW	1387	
109	Construction of dam (2000 beneficiaries). In Paghman.	Kabul	MEW	1387	
110	Rehabilitation and cleaning of karizez in villages of Mir Bacha Kot district, (150 karizez, 450 km 75,000 beneficiaries).	Kabul	MRRD	1387	
111	Construction of protection wall along the Kabul and Logar river, (18 km total, 2500 beneficiaries).	Kabul	MEW	1387	
112	Construction of protection wall, culvert and dam, Estalef district (2500 beneficiaries).	Kabul	MEW	1387	
113	Reconstruction of water supply network in Bagrami district (3000 families as beneficiaries).	Kabul	KM/MoUD	1387	
114	Survey and digging of Parwan Canal from Panjshir river.	Kabul	MEW	1387	
115	Construction fo 7 dam along to Naqikhan canal in Khan Abad district.	kundoz	MEW	1387	
116	Construction fo 7 dam along to Naqikhan canal in Khan Abad district.	kundoz	MEW	1387	
117	Construction of culverts in Archi district (Ongoing/MAIL)	kundoz	MAIL	1387	
118	Reconstruction of "Pr Chaba Naqi" canal with all canal networks in centre of Kunduz (7km, 200,000	kundoz	MEW	1387	
119	Reconstruction of canal (Zabir) in Emam Saheb district (150 km 150,000 beneficiaries).	kundoz	MEW	1387	
120	Construction of riverside protection in Char Dara (5km 50,000 beneficiaries).	kundoz	MEW	1387	
121	Reconstruction of Archi canal from head-work to end, (70 km 700,000 beneficiaries).	kundoz	MEW	1387	
122	Reconstruction of water supply project of Khan Aabad and reconstruction of hydro-power.	kundoz	MEW/MRRD	1387	

No.	Project Name	Project Location	Responsible agency	Project Duration (year)	
				Start	End
123	Construction of water supply network and its distribution system in Sar Bagh, centre of Aibak & remote areas of Aibak (20000 families directly,180000 families indirectly as beneficiaries)	Samangan	MRRD	1387	
124	Digging of deep well in Roy Do Aab district (30000 families as beneficiaries)	Samangan	MoM/MRRD	1387	
125	Construction of dam (24000 families as beneficiaries). In Dara e Sof Bala.	Samangan	MEW	1387	
126	Construction of water supply network and its saving, centre the province.	Samangan	MoUD/IDLG	1387	
127	Construction of diversion dam (water for drinking and irrigation) in Khuram and Sarbagh district	Samangan	MoAIL/MEW/MRRD	1387	
128	Construction of diversion dam in Roi Do Aab district.	Samangan	MoAIL/MRRD/MEW	1387	
129	Digging of a deep well in Toqsun village in Dara-i-Suf Payen (5,000 households will benefit).	Samangan	MRRD/MoM	1387	
130	Construction of a flood protection wall in the centre of Khuram and Sarbagh district (3,000 household beneficiaries).	Samangan	MEW	1387	
131	Construction of a diversion dam in Dara-i-Suf Payen district (25,000 beneficiaries).	Samangan	MEW/MRRD/MAIL	1387	
132	Construction of storage dam in Dara-i-Suf Bala (30,000 beneficiaries).	Samangan	MEW	1387	
133	Digging of deep wells and establishment of veterinary clinic at province level.	Kapisa	MRRD/MoM	1387	
134	Excavation of shallow wells and construction of canals in 6 districts and centre of province (55 wells for each district).	Kapisa	MRRD/IDLG	1387	
135	Construction of water network, reservoir and maintenance of Water Recources in all districts (72000 beneficiaries).	Kapisa	MEW/MRRD	1387	
137	Construction of Mahmood Raqi Water Recource network in Mahmood Raqi area(1400m)	Kapisa	MEW	1387	
138	Strengthening and more excavation of Panjshir river in the centre of Kapisa area.	Kapisa	MEW	1387	
140	Construction of a dam on the Panjshir river in Gulbahar (about 30000 m3).	Kapisa	MEW	1387	
141	Rehabilitation of Baghdara hydro dam in Jangal Bagh Nijrab	Kapisa	MEW	1387	
142	Construction of protection walls in province and district level (31 walls)	Kapisa	MEW	1387	
143	Diversion of Nijrab river.	Kapisa	MEW	1387	
145	Construction of hydro dam in Khan Girdak area of Murghab district.	Badghis	MEW	1387	
146	Construction of water supply dam in Qarqito (length=120m and width =20m).	Badghis	MEW	1387	
147	Construction of water supply dam for Kochiz(nomads) in 6 districts.	Badghis	MRRD	1387	
148	Extension of water supply network in Qalai Naw district (200m).	Badghis	MRRD	1387	

No.	Project Name	Project Location	Responsible agency	Project Duration (year)	
				Start	End
149	Construction of protection wall in Jawand district (500 meter).	Badghis	MEW/MRRD	1387	
150	Construction of dam for irrigation in Bala Murghab (120,000 beneficiaries).	Badghis	MEW/MAIL	1387	
151	Construction of protection wall in Bala Murghab, 500 meter	Badghis	MEW	1387	
152	Construction of hydro dam in Khan Girdak area of Murghab district.	Badghis	MEW	1387	
153	Digging of 62 drinkable water wells (120000 families as beneficiaries.	Sari pul	MRRD/MoM	1387	
154	Construction of water diversion dams in Syad and Kohestanat districts (20000 families as beneficiaries)	Sari pul	MEW/MAIL	1387	
156	Rehabilitation the two waste water storage of the city (At district 4 of the city) about 6 Km. For the 850000 people.	Kandahar	MoUD/IDLG	1387	
157	Making the water control gate in irrigation canals, at Dand, Daman, and Arghandab districts. For 200000 persons, need 70 gates	Kandahar	MEW/MAIL	1387	
158	Making the water control gate in irrigation canals, at Shawali kot and Arghandab districts. For 250000 persons, need 20 gates.	Kandahar	MEW/MAIL	1387	
159	Repairing the system of drinking water for 17 districts as well as that for Kuchis (2,100 metre wells). About 2100 depth (500,000 people)	Kandahar	MRRD	1387	
160	Construction of Canals and Karez system (about 9,000 km through 15 districts).(500,000 beneficiaries).	Kandahar	MRRD	1388	
161	Water supply project in the centre of the province (20000 beneficiaries).	Logar	MoUD/IDLG	1387	
162	Construction of water diversion dams in the centre of the province, Baraki Barak and MoPHammad Agha (benefitting three districts).	Logar	MEW/MAIL	1387	
163	Repair of Kharwar dam and its network in Kharwar district (benefits Charkh and Kharwar).	Logar	MEW	1387	
164	Construction of dam in Kala Gosh Alingar District	Laghman	MEW	1387	
165	Extension of City Drinking water Network in centre About 25 km Beneficiaries 1500 Families	Laghman	MoUD/IDLG	1387	
166	Construction of protection walls, Qarghaee districtMulakhil Kachara /Kachona and Related areas (2) km 1500 beneficiaries).	Laghman	MEW	1387	
167	Construction of Mehterlambaba garden canal (7km, 2000 beneficiaries).	Laghman	MEW	1387	
168	Construction of protection walls, in Tergaro in Baba Sahib Side Related areas (2) km 2200 Beneficiaries).	Laghman	MEW	1387	
169	Excavation of 25 drinking water wells for kuchies (500 families as beneficiaries).	Laghman	MRRD	1387	
170	Construction of protection wall (600m in Qarghai district 500m in the centre of Laghman, Gabela, Mulakhil, Shamta Bela, Mir Hasan villages).	Laghman	MEW	1387	

No.	Project Name	Project Location	Responsible agency	Project Duration (year)	
				Start	End
171	Construction of water reservoir, Alingar district	Laghman	MEW/MAIL	1387	
172	Construction of water cultivation sub headworks (small) Abad village, Charbagh district, (1000 families as beneficiaries).	Laghman	MEW/MAIL/MRRD	1387	
173	Construction of the Tangi Sapidar reservoir in Shinki district.	Zabul	MEW	1387	
174	Construction of the Chogai Reservoir and dam.in Share Safa District	Zabul	MEW	1387	
175	Construction of water diversion dams. in Arghandab District Beneficiaries 45000	Zabul	MEW/MAIL	1387	
176	Cleaning and Clearing of Canals and Kariz about 150 Kariz in 118 villages of Nawbahar District	Zabul	MRRD	1387	
177	provision of Drinking Water in Shah Joi District Beneficiaries 90000	Zabul	MRRD	1387	
178	provision of Drinking Water in share Safa District Beneficiaries 80000	Zabul	MRRD	1387	
179	provision of Drinking Water in Mizana District Beneficiaries 36000	Zabul	MRRD	1387	
180	Excavating of deep wells in Shamalzai District About 100 Beneficiaries 50000	Zabul	MoM/MEW/MRRD	1387	
181	construction of Protection Wall in Arghandab Khwazagai Mali Khil Walgai and Refugge Area About 410 M Beneficiaries 2500	Zabul	MEW	1387	
182	Establishment of drinking water system in Chora district (10km 20000 beneficiaries).	Urozgan	MRRD	1387	
183	Excavation of 600 drinking water wells in Gizab district (30000 beneficiaries)	Urozgan	MRRD	1388	
184	Construction of Rural Roads and Culvert About 130 Km in Khas Urozgan District Beneficiaries 40000	Urozgan	MEW/MRRD	1387	
185	construction of Dam in Agha Jan Area About 100M Beneficiaries 200000	Urozgan	MEW	1387	
186	construction of Dam in Sar Tangi Khas Urozgan Meghar Chora District About 100 M beneficiaries 150000	Urozgan	MEW	1387	
190	Provision of Drinking Water for Tarin Kot Beneficiaries 50000	Urozgan	MoUD/IDLG	1387	
191	Excavation of 30 wells for kuchis in Soly Kalai, Tarin Kot	Urozgan	MRRD	1387	
192	Dam construction (for irrigation) in centre of Ghor province and all districts (Gharmab dam).	Ghor	MEW/MAIL	1387	
194	Construction of canal head-works (Shaikh Mahmood Canal).	Farah	MEW	1387	
195	Cleaning and clearing of 600km canals & 420 km kariz. beneficiaries750000.	Farah	MRRD	1387	
196	Construction of Sheikh Mahmood canal headworks (380m Sheab Koh district, 15,000 beneficiaries).	Farah	MEW	1387	
197	Construction of head-works	Nimroz	MEW	1387	
198	Cleaning of canals and instalment of protection doors in Chakhansor district. 25 km Canals 200 Doors	Nimroz	MRRD/MEW	1387	

No.	Project Name	Project Location	Responsible agency	Project Duration (year)	
				Start	End
199	Cleaning of Nahr e Shahi canal in Zaranj.20 km Beneficiaries 10000	Nimroz	MRRD/MEW	1387	
200	Construction of canalization network from Halili source in Chaghansor district (180 km).	Nimroz	MoUD/IDLG	1388	
201	Excavation of shallow wells and construction of canalization network in centre of province. (4 wells and 120 km of canals).	Nimroz	MoUD/IDLG	1387	
202	Extension of hydro dam to Kang and Chaganso districts (150 km).	Nimroz	MEW	1387	
203	Construction and cleaning of Sikhsang and Ebrahim Khail dam and canal ( 30 km canal and 300m dam).	Nimroz	MEW	1387	
204	Construction of Nahre Sraj Canal Head Work Beneficiaries 200000 Farmers	Hilmand	MEW	1387	
205	Excavation of well for drinking water (350 total in all districts, beneficiaries animal husbandry & Kuchis).	Hilmand	MRRD	1387	
206	Reconstruction & cleaning of canals Kajaki district	Hilmand	MEW	1387	
207	Excavation of new canal from Kajiki to Musa Qala	Hilmand	MEW	1387	
208	Constructing of Protection Wall Bust Village About 200M/ Beneficiaries Bust Village.	Hilmand	MRRD/MEW	1387	
209	Protection wall (8km in Nadershahkot district 20000 beneficiaries).	Khost	MRRD/MEW	1387	
210	Establishment of drinking water system (50 km 200000 beneficiaries).	Khost	MRRD	1387	
211	Construction of Shamal protection wall (5km 20000 beneficiaries).	Khost	MEW/MRRD	1387	
212	Provision of drinking water in Khost city (41,000 beneficiaries)	Khost	MoUD/IDLG	1387	
213	Cleaning of canals and drains at provincial level (70 canals and 350 drains)	Khost	MEW/MRRD	1387	
214	Construction of protection walls in Shomol , Lakan , Spera, Mandozai, Alishir (12 km).	Khost	MEW/MRRD	1387	
215	activation of Managai Micro heydel system and constructing of canals	Kunar	MEW	1387	
216	Water reservoir for Manwari rain- fed land.	Kunar	MEW	1387	
217	Construction of water canal from Noorgal River about(15km)	Kunar	MEW	1387	
218	Head works for canals in Chaoki district.	Kunar	MEW	1387	
219	Construction of Head Works in Karhala Noorgal Salar Bagh Narang and Chawkai About 5 Centres.	Kunar	MEW	1387	
220	Construction of Drinking Water Network About 2 KM in Nari District Jaba village	Kunar	MRRD	1387	
221	Creation of a Water Reservoir /irrigation system for agricultural purposes in Gharak District, AhmdAbad	Paktia	MEW/MAIL	1387	
222	Construction of Dam (Water Storage) in Dund Patan (50 m).(Dund Patan district).	Paktia	MEW	1387	

No.	Project Name	Project Location	Responsible agency	Project Duration (year)	
				Start	End
223	Construction of headworks for water storage & construction of the protection walls in Patan district (10 km, 100,000 beneficiaries).	Paktia	MEW	1387	
224	Rehabilitation of water supply project of Khair Khana region.	Kabul Urbon	MoUD/KM	1387	
225	Rehabilitation of drinking water network in district # 13.	Kabul Urbon	MoUD/KM	1387	
226	Provision of drinking water through water pumps in district 21 and 40000 families will be benefited.	Kabul Urbon	MoUD/Km	1387	
227	Construction of water storage dam in Karta-i-Sakhi hill and 200000 families will be benefited	Kabul Urbon	KM/MoUD	1387	
228	Construction of water supply network in Sayed Noor Mohammad Shah mena. 3 Km and 4500 persons will be benefited form the project.	Kabul Urbon	KM/MoUD	1387	
229	Construction of water diversion dam, in Gul Bakh district and 7000 persons will be benefited.	Kabul Urbon	KM/MoUD	1387	
230	Extention of Water network from Lala Bagh Salang up to Charikar city	Parwan	MEW	1387	
231	Construction of water reservoir dam (40m height 55m width (25000 families as beneficiaries) Alishing District	Laghman	MEW	1387	
232	Construction of water reservoir dam (60m)( 2000 families as beneficiaries) Alingar District	Laghman	MEW	1387	
233	Construction of Nahre Shahi canal from Alingar district to centre (20 km 30000 families as beneficiaries).	Laghman	MEW	1387	
234	Construction of Dam in Tangi Dawlat Shah About 20m Beneficiaries 1500families	Laghman	MEW	1387	
235	Establishing of irrigation water supply network in all districts and centre, 750000 beneficiaries.	Farah	MEW	1387	



# **Information and Communication Technology Sector Strategy**

**1387 - 1391 (2007/08 - 2012/13)**



**Pillar III - Economic &  
Social Development**



# Information & Communication Technology Sector Strategy

Approved by  
Sector Responsible Authorities

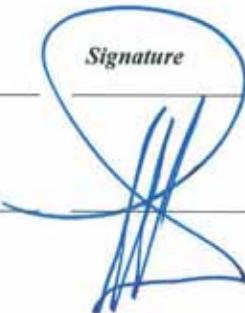
*Ministry/Agency*

Ministry of Communication & Information  
Technology

*Name of Minister/Director*

H.E. Eng. Amirzai Sangin

*Signature*

A handwritten signature in blue ink, enclosed in a blue oval. The signature reads "AMIRZAI SANGIN".

February 2008

Date of Submission  
Feb 2008



## EXECUTIVE SUMMARY

# PROVIDING STRATEGIC LEADERSHIP TO THE ICT SECTOR

In February 2007, cabinet approved the re-naming of the Ministry of Communications to the Ministry of Communications & Information Technology (MCIT) as an acknowledgement of the central role that the information and communications technology (ICT) sector<sup>1</sup> will play in accelerating Afghanistan's full participation in the global Information Society. MCIT will provide strategic leadership to ICT sector development, and it will act as the focal point for all of the stakeholders to help shape future policies and to promote large-scale projects.

The ICT Council was established by Presidential Decree in May 2007 as the primary forum for all of the stakeholders. The ICT Council includes representatives from the government ministries, plus business (service providers), civil society (relevant associations) and academia.

### STAKEHOLDERS & STRATEGIC CHANNELS

In every economy in the world, the government is always the single largest buyer of goods and services. In this role as mega-consumer, governments are also able to play a leading role in the development of sectors, industries, products and even commercial process. In the case of the development of the ICT sector in Afghanistan, the government has explicitly acknowledged the role it must play, and through the ICT Council, MCIT will achieve the following objectives:

- **PROMOTION OF ICT DEVELOPMENT**
  - Create awareness in the ministries and public about the importance of ICT
  - Encourage implementation of required ICT solutions and systems in each Ministry through CIO (Chief Information Officer) Culture
  - Make ICT as a cross-cutting tool to support the ANDS
- **COORDINATION OF ICT ACTIVITIES**
  - Create awareness about existing situation of ICT in the country
  - Coordinate new activities among ministries and/or donors
  - Avoid duplications and waste of resources
- **POLICIES AND STANDARDS FOR ICT**
  - Establish Policies and procedures
  - Establish the Legal framework for ICT
  - Create ICT standards
  - Establish proper procedures for data integrity, security and access
  - Ensure Privacy protection
  - Create Emergency preparedness

<sup>1</sup> The ICT sector is fully defined in Part II.

## E-GOVERNMENT INITIATIVES

- Develop strategic plan for e-Government
- Promote e-Government to deliver services effectively, reduce bureaucracy and fight corruption
- Ensure interoperability of systems and solutions
- Example: National ID, Passport, License, Land Ownership Register etc

By mobilizing resources to build up the ICT sector within the public sector institutions, MCIT will also be accelerating the development of ICT support

capabilities of the private sector in Afghanistan, both through contracts and via participation in the policy processes of the ICT Council.

The ICT ecosystem is characterized by stakeholders and relationship channels. For

example, an inter-Ministerial electronic personnel and payroll system is an example of a Government-to-Government (G2G) channel.

Electronic procurement is an example of G2B. Ultimately, as the ICT market matures, it will resemble a matrix of relationships, as in the table below:

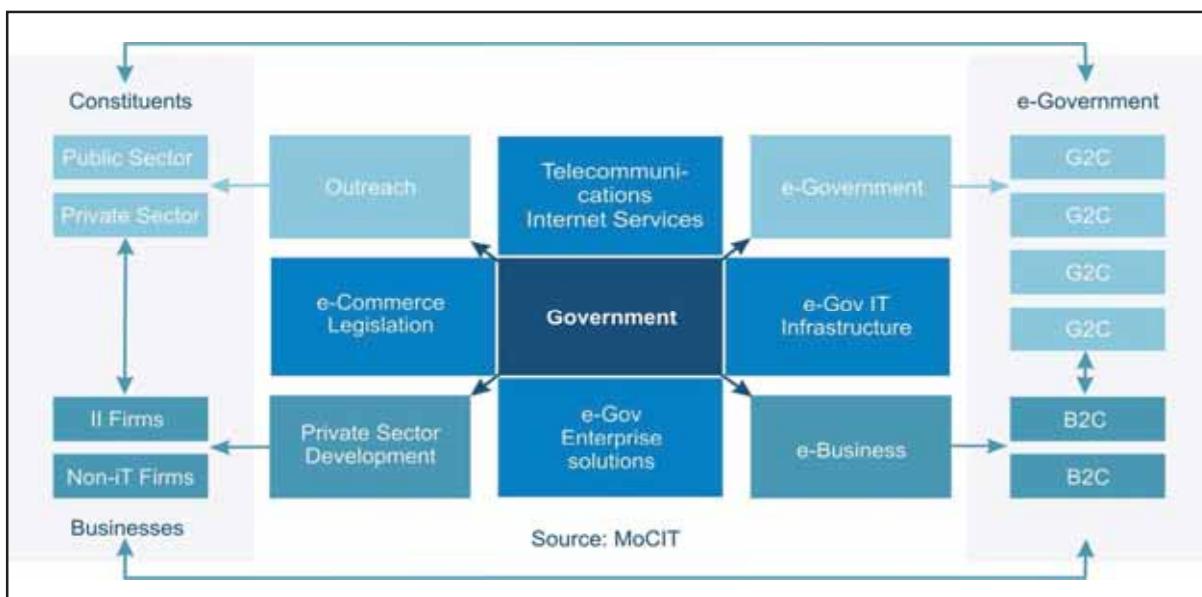
	Government <sup>1</sup>	Citizen	Business	Education
Government	G2G	G2C and G4C	G2B	G2E
Citizen		C2C		
Business	B2G		B2B	
Education		E2C		E2E

(Footnotes)

1 *Government includes the health sector*

These relationships are already well understood and it will be the task of the ICT Council to foster their development in Afghanistan. Several logical high-priority starter programs have already been identified and are listed in the Programs section below .

Figure 1: A graphic illustration of the ICT ecosystem.



## KEY STRATEGIC TARGETS FOR ANDS

This ICT sector strategy carries forward two elements that were adopted in the Interim ANDS (I-ANDS) with adding up the third:

- Telecom access to 80% geographic coverage of populated<sup>1</sup> areas by 2010, ensuring equitable access to most of the population, including women
- US\$100 million revenue contribution to treasury by 2010
- Transforming Afghan society into information based society by 2013

The approach taken to achieve the first target is wireless service. From July 2003 to July 2007, the total number of mobile subscribers has grown from 1,800 to over 4 million and from 6 to over 250 urban areas.<sup>2</sup> Afghanistan now has five nationwide mobile service providers plus three regional licensees. Competitive incentives will continue to spur the expansion of access to ever more remote areas. For the next five years, MCIT policies, working through the Afghanistan Telecom Regulatory Authority (ATRA) will also deploy satellite solutions to the less populated areas where personal mobile is too costly. The current program is to reach at least 3000 villages by 2010. Plans are also underway to issue new licenses for the provision of fixed wireless access for broadband internet.

The second target has been dictated by the Ministry of Finance. The ICT sector is already the most heavily taxed, primarily because it is comprised of the largest law-abiding enterprises in Afghanistan, and therefore an easy target for collections. As more licensees enter the legitimate market, great care should be given to reduce – not increase – the burden on the sector. A World Bank study is being prepared which will provide guidance to the ICT Council, and ultimately the

<sup>1</sup> Afghan Geodesy and Cartography Head Office agree that there are 217 provincial and rural municipalities having populations of more than 5000 people.

<sup>2</sup> All licensees are required to register each user. By 2008, ATRA will require each licensee to provide aggregate number of users by gender, district and nationality.

cabinet, on improving the tax regime to avoid placing an unfair burden on this nascent industry which is providing vast economic benefits in terms of employment and development. With the new telecom infrastructure e.g. Fiber optic ring and national data centre, new business like call centers will spur in the sector contributing to the government revenues.

With the achievement of third target Afghans will be able to enjoy their day to day life. The establishment of national datacenter by end of 2008, implementation of e-Government, e-Commerce, m-Commerce, e-Health (telemedicine) towards the end of 2010 will enable afghan to enjoy the information age. The new mandate of MCIT and establishment of ICT council will strengthen the political will to achieve the third target.

## IMPEDIMENTS

The impediments to the healthy future of the ICT sector are:

- Security – impeding the ability to build and maintain ICT infrastructure in remote areas
- Literacy – the high level of illiteracy reduces the immediate impact of many internet applications
- Corruption – adds a significant burden on legitimate business processes
- Human Resource – the low level of ICT work force is another hurdle to the adoption and promotion of ICT
- In particular, the low literacy rate and limited mobility severely constrains the access of women to internet services.
- There is a limit to the level of taxation that can be imposed on this industry

## SOLUTIONS

The ICT sector also brings solutions that will help

address these impediments, which will bring cross-cutting benefits to the whole of Afghan society:

- Security – wireless technologies require less infrastructure to cover a wider territory, and citizens will no longer be isolated from government
- Literacy – once access to the internet is available, it can be used for education, in particular women, and it is proven to be easy for children to self-teach, which will increase the ICT literate work force. Furthermore, Internet learning and distance learning programmes should be developed for women.
- Corruption – when you make information widely available, you eliminate abuse by the bureaucracy and make the government more accountable.
- Capacity Development – MCIT now has
- ICT training centers established in 16 provincial capitals and will deploy training centers in all 34 capitals by the end of 2008<sup>3</sup>
- Lowering the cost of communication. Developments in this market, particularly increased competition have driven prices down from around \$US3 per minute to less than 10 cents per minute.

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<sup>3</sup> The complete list of the ICT centers already established and planned for 2008 is in annex



# INTRODUCTION

## DEFINITION OF THE ICT SECTOR

Information & Communications Technology (ICT) is defined as the infrastructure, applications and services that are helping to shape the Information Society.

By **infrastructure**, we primarily mean the computers and all other IP based devices that is linked on a global basis by the public internet (or other private access networks). Locally, these devices are either linked to each other by wire infrastructure (Ethernet) or wireless infrastructure (WiFi) or they can connect directly to the internet using the infrastructure of a telephone company. Software makes it possible for various **applications** to utilize the computer hardware. Basic software includes word processing, spreadsheets and relational databases for desktops or laptops. But, as used in this Sector Strategy, the relevant applications mean enterprise-wide or government-wide software, including especially those that are web-enabled, meaning that they can be accessed by any IP enabled device or terminal worldwide (with appropriate security measures).

Services consist of all those E-enabled G2G, G2C, G2B services e.g. e-Passport, e-Land registration, e-Procurement.

Today, there are over 1 billion personal computers in use worldwide.<sup>1</sup> There are 1.3 billion internet users, compared with 1 billion in 2005, 420 million in 2000 and 45 million in 1995.<sup>2</sup> The value of worldwide telecom services was US\$123 billion in 2004, projected to reach US\$282 billion in 2010. The value of ICT equipment sold was US\$198 billion in 2005 is anticipated to reach \$447 billion by 2010.<sup>3</sup>

<sup>1</sup> Research and Markets – <http://www.researchandmarkets.com/reports/c21014>

<sup>2</sup> International Telecommunication Union – <http://www.itu.int>

<sup>3</sup> Research and Markets – <http://www.researchandmarkets.com/reports/c21014>

## THE IMPORTANCE OF THE ICT SECTOR TO AFGHANISTAN

The ICT sector is one of the important parts of the infrastructure of any country and it plays a vital role for further growth of any economy and seeing its due importance it has been placed under pillar three Social and Development in the Infrastructure and the natural resource consultative group of the Afghanistan National Development Strategy.

ICT will enable the government to successfully execute the broad reconstruction effort. A modern telecommunications sector, incorporating e-government initiatives wherever possible, will enhance the effectiveness, efficiency and transparency of the public sector and the provisioning of social services. In this case such provision of services has largely occurred through the enabling environment created within the sector for sustained private sector investment.

Today when the telecommunication revolution has reduced the world to a global village its development is important for the Afghanistan as well. As all the communities of our people face the “tyranny of distance” and the alienation associated with remote geographical conditions of Afghanistan. Women in particular face movement restrictions due to security concerns and conservative tradition. To restore cultural and social normalcy throughout the country it is essential that all 365 districts, major villages and rural areas be integrated with Kabul, with each other, and with the rest of the world. ICT is a basic enabler of informal social and economic discourse necessary in the strengthening of civil society and the promotion of economic activity (e.g. access to markets and pricing). In particular, it can give access to information to those women whose movements are restricted.

ICT is necessary for the resumption of productive capacity and stimulating activity in all sectors

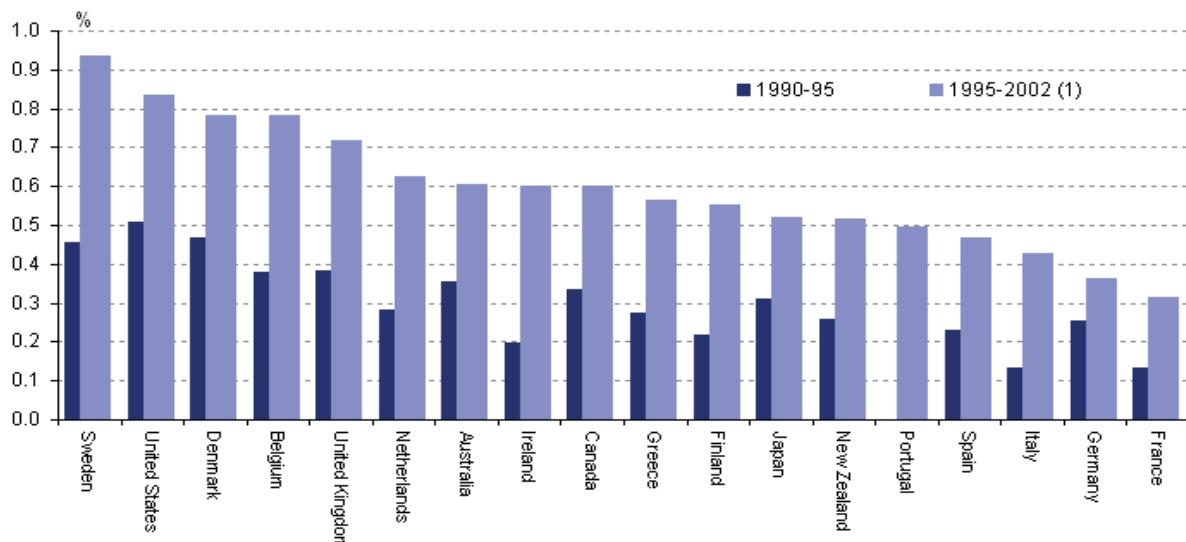
of the Afghan economy. It plays a critical role in reestablishing basic economic linkages by relieving communication bottlenecks from financial, governmental and cultural information flows. ICT is an essential enabler for boosting productivity and creates a climate for job creation, investment and sustainable growth. In fact; currently there are more 50 thousand people who have been provided with direct and indirect job opportunities in this sector since 2002. Research data shows that positive economic effects flow to all parts of a community once basic telephone access is achieved. And now with the advent of Internet the flow of market information is more rapid enabling the market stakeholders enjoy the availability of business/economic statistics thus the information technology revolution which has influenced all the economies in the world can't leave Afghanistan as exception and it has started making ripples by becoming a sole sector which contributes maximum to the exchequer or the national treasury of our country. The contribution of the ICT sector for 2005 estimated at 20% of national domestic revenue collection which is going to rise further will provide government more revenue for carrying out its fight against poverty reduction and reconstruction of the nation and thus this sector will contribute directly

or indirectly in poverty reduction crusade of the nation.

Civil preparedness, education, NGO and community outreach, peace-building and national security efforts are all strengthened when reliable and robust ICT network resources are distributed widely throughout society. ICT is a strategic sector that urgently requires further rapid modernization by encouraging further private sector investment into the sector. It plays a unique role as a facilitator in the overall reconstruction effort – from providing a support infrastructure for humanitarian, aid and other NGO relief workers to improving education, supporting emergency operations and social welfare and boosting the economy.

Administrative reforms being accepted as one of the major challenges by the government of Afghanistan can be tackled with the use of ICT by introducing G2G (Government to Government), G2B (Government to Business) and G2C (Government to Citizen) services. As per the international experiences technology can be one of the strong factors helping reduce the bureaucracy and increase the accountability and transparency. Thus the ICT sector has a crucial role to play in economic growth, in poverty reduction and in overall development of the nation.

**Figure 2:** economic growth, in poverty reduction and in overall development of the nation.

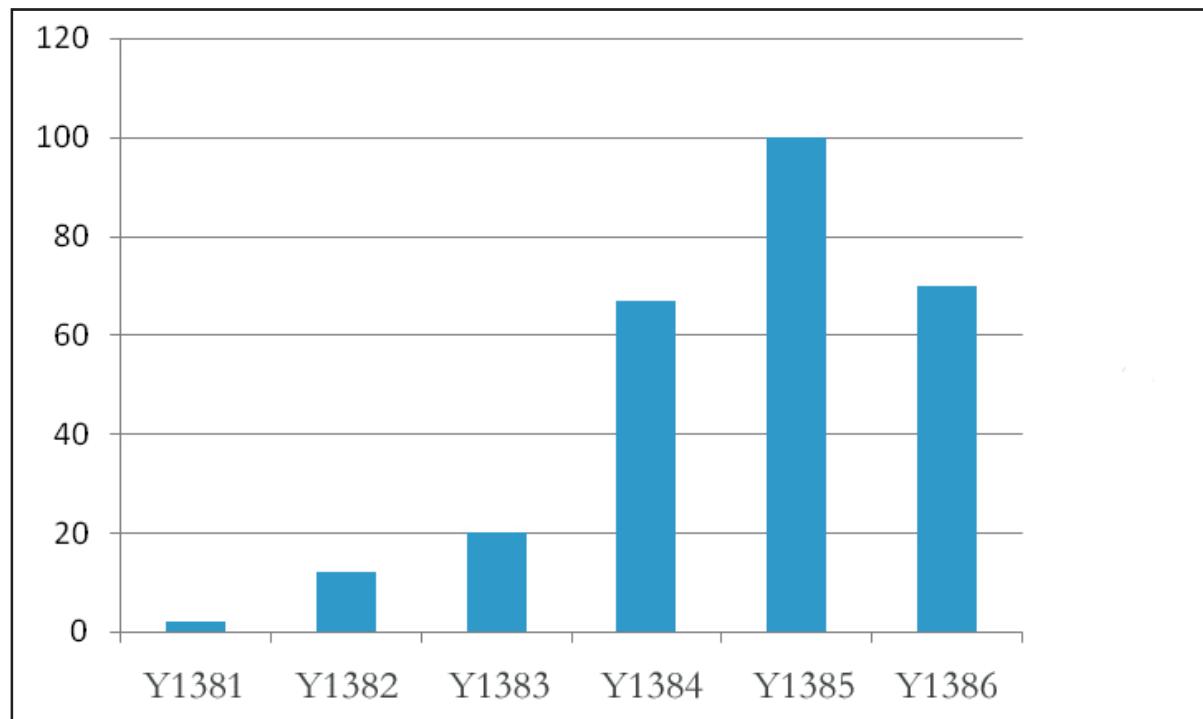


## ACHIEVEMENTS:

- Four nationwide mobile licenses have been issued, generating one time US\$90 million

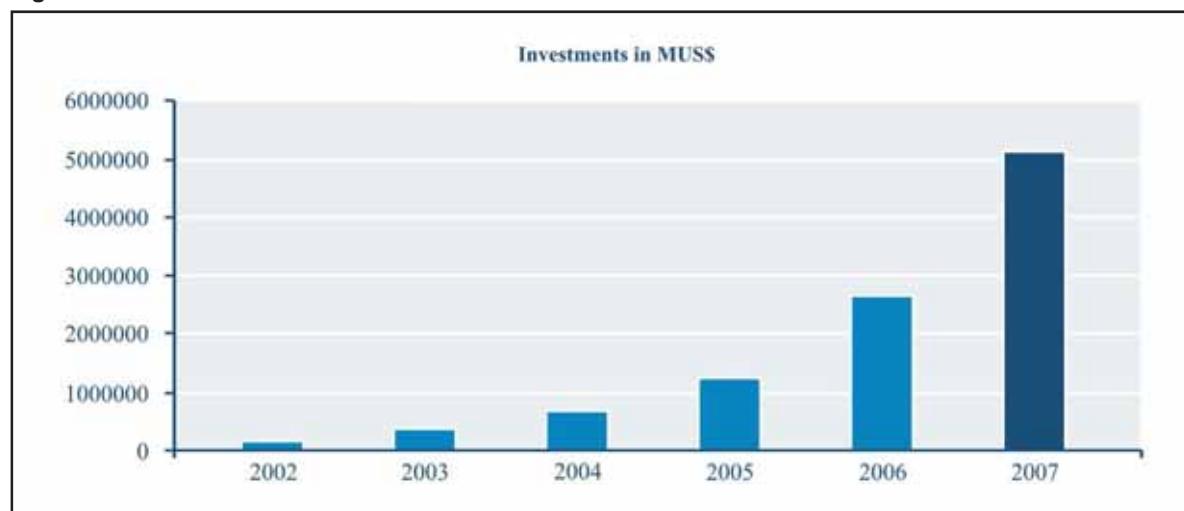
in license fees and US\$ 70 million recurrent annual revenue (end 1386)

**Figure 3:** Recurrent annual revenue



The ICT Sector is Afghanistan's biggest success story in terms of attracting private sector investment US\$925 million (Dec 2007). Expected to reach US\$1.5 billion by end 2010.

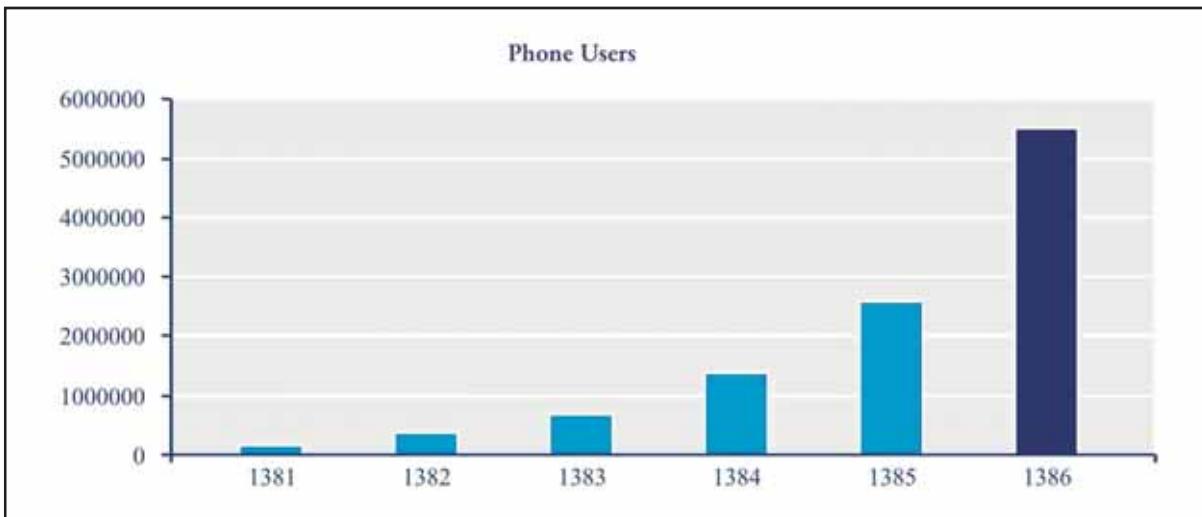
**Figure 4:** Investment in ICT Sector



Source: MoCIT

- There are almost 4.5 million subscribers, as of Dec 07. This will reach to 5 million March 31st 2008(End of 1386) .This is equivalent to 18 % penetration ( one phone for each 5 people)
- There are close to 2000 towers now installed. Telecom services now covers more than 250 cities, towns and populated areas. The population of the covered areas is over 75% of population.

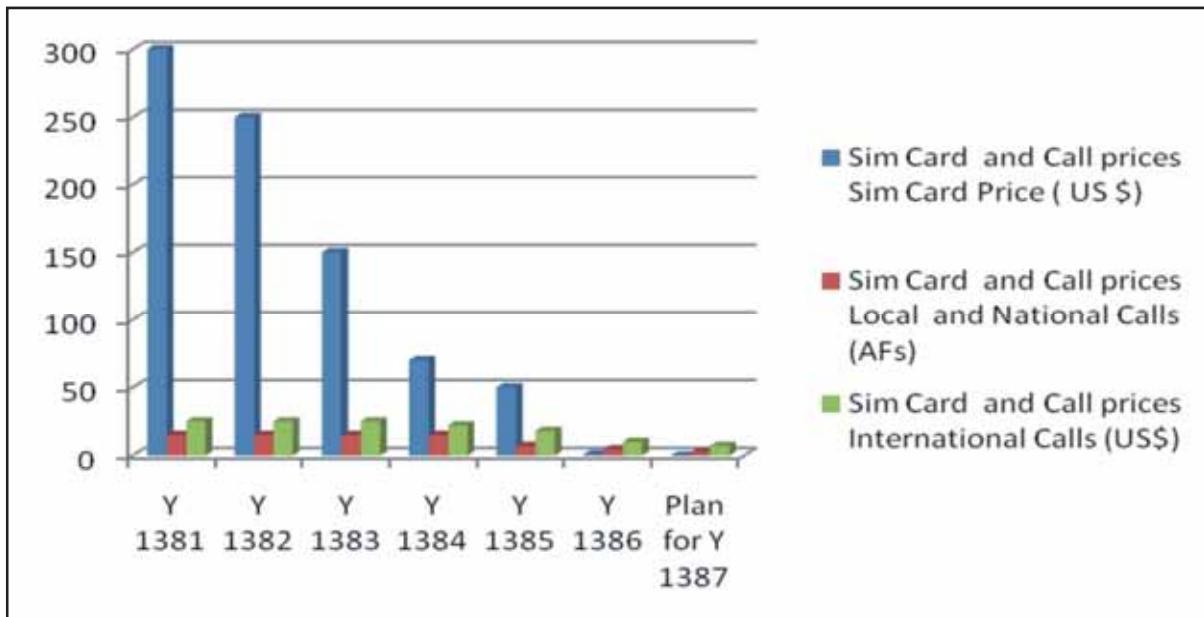
**Figure: 5 Phone Users**



Source: MoCIT

- Call prices reduced from 15 Afs to 1 Afs and sim prices reduced from 300 US\$ to 1 US\$

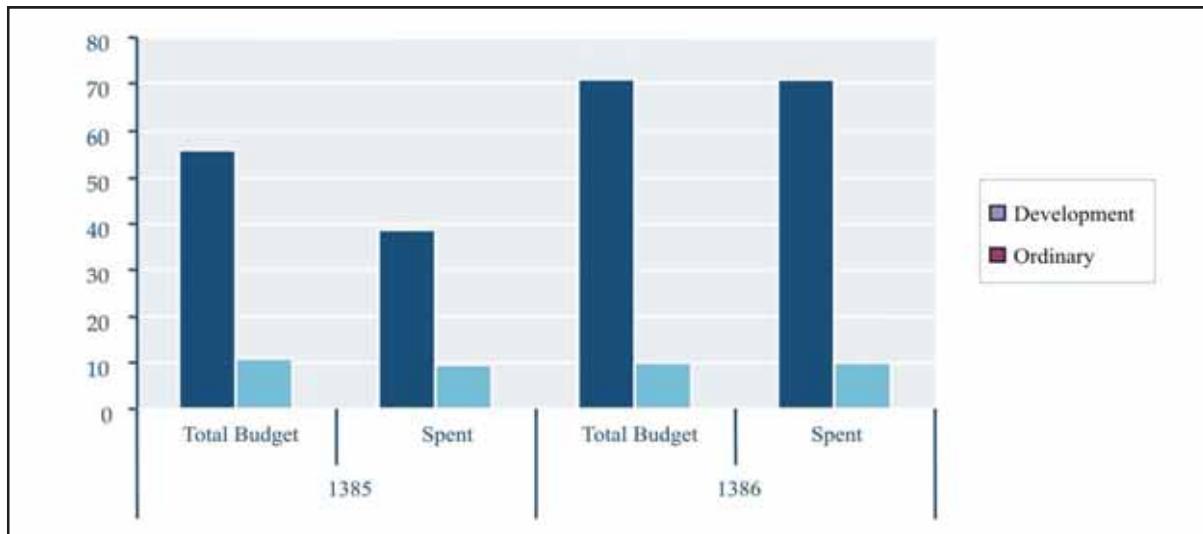
**Figure 6: Reduction in call prices**



Source: MoCIT

- Above 81 % of Development Budget for the current year is has already been spent and it is expected that the complete Development Budget this year will be spent.

Figure 7 on the next page: Development Budget



Source: MoCIT

- Direct and Indirect jobs created for over 60,000 People
- More than 1,000 people trained in basic ICT skills and is establishing training centers in each of the 34 provinces by MCIT

#### **CHALLENGES & CONSTRAINTS – IMPEDIMENTS TO GROWTH**

- Lack of security
- Government bureaucracy (length of time for simple decisions)
- Lack of electricity and high cost of diesel fuel for generators
- Lack of clear property rights
- Low level of literacy and informational content in the local languages.
- High tax burden, especially with policies explicitly targeting this sector( From Operators point of view)

**Provincial Developmental Plan (PDPs):** MCIT has actively utilized its video conferencing capabilities to reach out to all 34 provincial capitals and many of the 240 district capitals that are presently served by the District Communications Network (DCN) infrastructure. MCIT has also worked with Parliament to reach all communities. MCIT has furthermore conducted planning sessions by bringing together representatives from all 34 provinces for work shops in Kabul. ATRA is in the process of instituting even greater responsiveness to the communities, by making available financial support from the Telecom Development Fund (TDF) upon request from community leaders. The ICT Sector Strategy incorporates feedback, proposed projects and comments from the Sub National Consultations (SNCs) and is a response to the people's needs and development goals (see attached annex IV).

#### **ICT AND POVERTY REDUCTION AND ECONOMIC GROWTH**

Role of ICT in Poverty Reduction, Economic Growth and Good Governance

- ICT helps in accelerating literacy which will in turn help in reduction of poverty

- Provision of over 80,000 employments by end 2010.
- Adoption of ICT literacy and basic skills by all young Afghans
- ICT enabled high potential for employment (Call centers, software development and etc)
- ICT can be the engine of economic growth (10 % Penetration growth is equal to 1 % GDP)
- Economic growth through increased private sector investment in ICT sector
- Enabling m and e commerce,
- Promote transparency and citizen access to public information
- Promote government efficiency, reduce cost
- Reduce corruption through streamlining ICT and automate customs processing, procurement and licensing etc.

#### **REFORM POLICIES:**

The ICT sector strategy was initially adopted in July 2003, and has consistently been the reference template for all subsequent reform policies, procedures and activities.

Based on the principles of the ICT strategy, the Telecom Law was promulgated by the President on 18 December 2005 (Official Gazette 878 – 23 February 2006). The law is already compliant with the World Trade Organization (WTO) Basic Telecom Agreement (BTA) framework

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requirements, notably, that it separates the three basic functions and assigns responsibilities to three independent sector elements:

- Policy – MCIT
- Regulation – ATRA
- Operations – Licensed Service Providers.

The main effect of the Telecom Law is the establishment of the independent sector regulator, called ATRA. The legal authority of ATRA rests with its 5-member Board, which was appointed by the President on 6 June 2006.

MCIT has just started drafting the ICT Law. The telecom law addresses the telecom infrastructure and services but the law doesn't cover the content of the services. The ICT law will address issues such as legal recognition of electronic/digital signatures and formation of electronic contracts (affecting transactions both in public and private sectors), content regulation, competition regulation, electronic evidence, data privacy protection, consumer protection and rights, domain name registration and regulation, intellectual property rights, encryption and security, financial and banking sector law and regulation relating to electronic transfers and settlements, taxation of transfers, customs, jurisdiction, dispute resolution and civil and criminal offences, limitations of liability of internet service providers, cyber piracy and digital rights management, facilitation of e-government and cross border interoperability of e-commerce frameworks affecting trade.



## CONTEXT

## HISTORY UP TO 2002

Modern telecommunications technology arrived in Afghanistan in 1930 with a small exchange built in Kabul. The network was gradually expanded to five additional urban areas via copper wire but this infrastructure had been decimated by 23 years of conflict and under-investment since the mid-1970s. At the beginning of the transitional government in 2002, the infrastructure was negligible and services were extremely limited. Wealthy people could afford to use satellite phones (at a cost of US\$5 per minute) and those less fortunate either travelled to neighbouring countries to place a call or to post a letter. But in reality, the majority of Afghans were simply isolated without communications.

In early 2003, Afghanistan had fewer than 15,000 functioning telephone lines for a population of approximately 25 million. This means a telephone penetration rate of 0.06%, among the lowest in the world. In addition to a shortage of basic telephone switching capacity, the local transmission network delivering last mile services, presented an even more difficult bottleneck. The cabling conduit, trunk cables and copper wires were also old or completely destroyed.

Afghanistan did not have a functioning long distance network to provide national or international connectivity. The absence of transmission and switching facilities meant that citizens could only complete calls within their own cities and were unable to reach any other parts of the country or the outside world.

### ADOPTION OF MODERN POLICIES

The government adopted the first modern policy

for the ICT sector in October 2002, which was immediately posted to one of the first government websites. This initial broad policy statement was further refined and split into two separate policies – one for basic telecom infrastructure and regulatory principles, and a second for ICT applications and a vision for the Information Society in July 2003.

The government has not veered from these policies and they remain in force to this day. Their principles have subsequently been given a statutory basis, in the form of the Telecom Law that was promulgated in December 2005 (published in Official Gazette 787). The telecom infrastructure aspects are being implemented by ATRA, which was established in June 2006. The ICT applications aspects are being implemented via the ICT Council, which was established in May 2007. The transparent approach taken to the adoption of the policies and the consistency of the vision from design to implementation has produced rapid results. These results have been formally acknowledged in two film documentaries – the first produced by the World Bank, and the second produced by USAID in 2006. In addition, there have been numerous favorable articles published in the leading business media, including *The Economist*, *The Wall Street Journal* and *The Financial Times*.

### THE EXPLOSION OF COVERAGE, ACCESS & USAGE

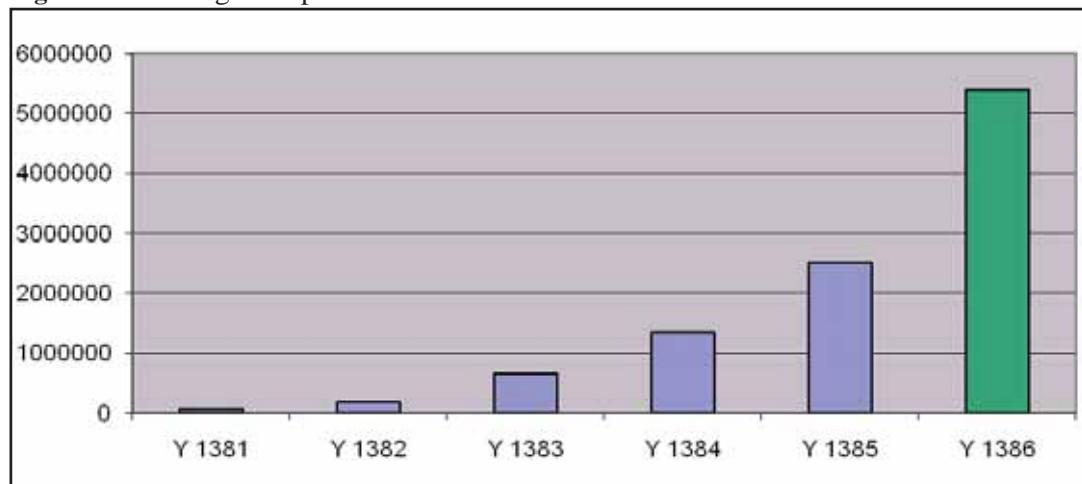
The fact that most of the existing infrastructure was either antiquated or broken meant that

Afghanistan was free to abandon them and essentially start again with a fresh slate. In 2003, the obvious choice for personal communications was wireless. Global standards for wireless mobile meant that the equipment was reliable, cheap and could be deployed rapidly. So wireless was a good fit for the Afghan market.

In July 2003, two nationwide mobile (GSM)

networks began operation, following an international competitive tender. The licenses required commercial service to be offered in Kabul within six months of the effective date, with nationwide service within 18 months. Pursuant to the original Telecom Policy, these first two licenses also were provided a legal duopoly for three years.

**Figure 8:** Coverage and phone users



Source: MoCIT

In October 2005 and May 2006, two additional nationwide mobile (GSM) licenses were awarded, with identical terms and conditions as earlier.

There was immediate strong demand for the mobile services, and has gone from zero to over twelve percent of the population, as documented in the table below:

The additional two licenses have clearly illustrated the benefits of competition, namely:

- Rapid expansion of coverage to new communities- 250 major urban areas to date
- Reduction of prices – from US\$0.30 to under US\$0.07 per minute
- Call per second is considered as 40% decrease in the prices
- Wider selection of optional features – voicemail, SMS.

A report from licensees indicates that the ICT market in Afghanistan is growing faster now than any time in its history, and still accelerating. In January 2007, the three mobile networks were

adding 100,000 net subscribers per month – and by August 2007, close to 180,000 were being added per month (as a fourth licensee entered the market). It is estimated that approximately 70% of Afghans now live within a coverage area of a telecommunications network.<sup>1</sup>

#### AFGHANISTAN COMPARED WITH REGIONAL NEIGHBOURS

In just four short years, Afghanistan has made remarkable progress in bridging the digital divide, as compared to neighbouring countries as of December 2006.

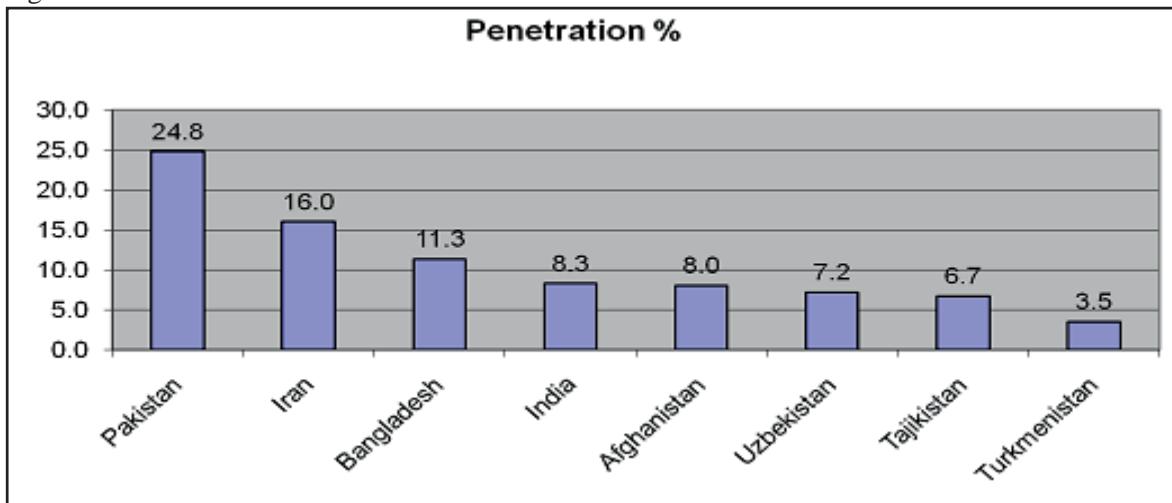
<sup>1</sup> As was noted earlier, ATRA will require all licensees to provide aggregate data on users, including gender and district location, for a better demographic understanding of the market development.

### A. Current Institutional Framework

The Ministry of Communications & Information Technology (MCIT) is responsible for providing the institutional leadership for the ICT sector in Afghanistan. MCIT's ICT Policy Department has the primary responsibility for developing ICT policy and it supervises the implementation of certain ICT projects, like the National Data Center (NDC). MCIT's Planning & Policy Department supervises the implementation of certain large-scale infrastructure projects, including the Optical Fiber Cable (OFC) project and the Copper Cable Network (CCN) project. The Afghanistan Telecom

Regulatory Authority (ATRA) was established by the Telecom Law as an independent institution operating within the political framework of MCIT. This means that its 5-member Board is appointed by the President. It also is financially independent, in that its administrative costs are fully recovered on the basis of regulatory, licensing and spectrum fees that are paid by the private Sector. Afghan Telecom is presently a corporation that is 100% owned by MCIT. It is being privatized pursuant to government policies articulated in the July 2003 *Telecom & Internet Policy*, the Interim ANDS and the MCIT Sector Strategy published in April 2007.

Figure 9



Source: MoCIT

MCIT also has a department for capacity building, called the Information Communication Technology Institute (ICTI). It provides specialized technical training and issues vocational certificates and has just launched a 4-year ICT bachelors program (the first class of 50 students have recently commenced studies). Since 2003, it is also in the process of considering a transformation to public-private partnership in order to ensure that its curriculum meets the needs of the private sector (which has a huge demand for properly skilled workers). Also, MCIT has been fortunate to receive considerable capacity building support from the UNDP, which has trained over 2000 MCIT staff in English and IT. Approximately half of the MCIT is women, and more than one-third of the trainees are women. The ICT Council is the primary forum for all

stakeholders in the ICT sector. It consists of all of the government institutions that already have ICT activities, and it is open to all other institutions as they acquire ICT infrastructure and applications. The ICT Council is chaired by the First Vice President and its total membership is fully inclusive of all interested parties, including the private sector, civil society organizations, and academia.

As of September 2007, the main government institutions utilizing ICT – and therefore the most active members of the ICT Council – are: Da Afghanistan Bank (DAB), the Ministry of Finance (MOF) and the Ministry of Foreign Affairs (MOFA). The Parliament has also become an important institutional player in

the ICT sector, both in terms of policy and utilization. Parliamentary review of Telecom Law began in April 2007 and amendments are expected by the end of 2007.

### B. Current Legislative Framework

The Telecom Law was promulgated by the President on 18 December 2005 (Official Gazette 878 – 23 February 2006). The law is already compliant with the World Trade Organization (WTO) Basic Telecom Agreement (BTA) framework requirements, notably, that it separates the three basic functions and assigns responsibilities to three independent sector elements:

- Policy – MCIT
- Regulation – ATRA
- Operations – Licensed Service Providers.

The main effect of the Telecom Law is the establishment of the independent sector regulator, called ATRA. The legal authority of ATRA rests with its 5-member Board, which was appointed by the President on 6 June 2006. The Telecom Law empowers ATRA to make Implementing regulations and normative acts. Generally, these regulations fall into three categories, pursuant to ATRA's own Code of Procedure, which was adopted in October 2006:

- Administrative Rules (hiring, firing, documentation)
- Procedural Rules (public consultations, rule-making, appeal)
- Substantive Rules (licensing obligations, consumer protection)

The ICT sector is also governed by many other laws because most of the services are provided by the private sector. The related commercial legislation includes, for example:

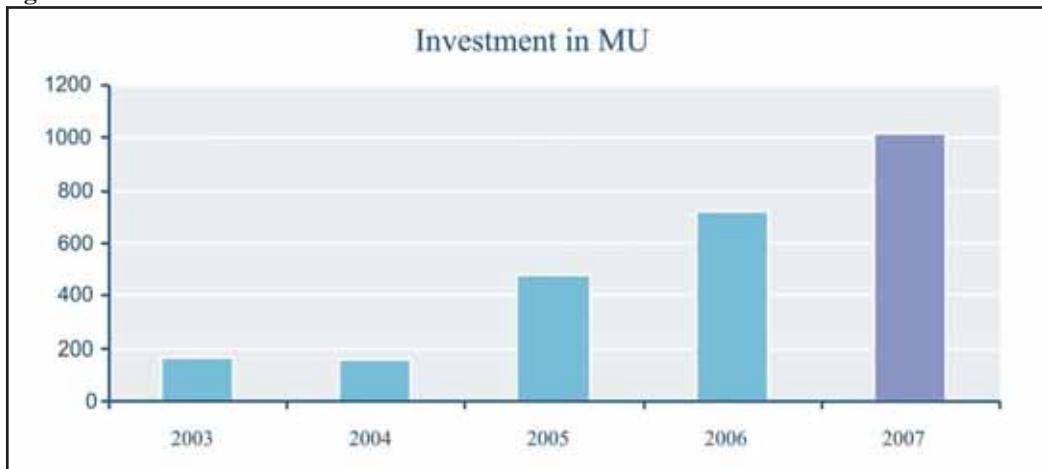
- Investment Law (July 2006)
- Arbitration Law (January 2007)
- Corporation Law (pending)
- ICT Law (pending)

MCIT has just started drafting the ICT Law. The telecom law addresses the telecom infrastructure and services but the law doesn't cover the content of the services. The ICT law will address issues such as legal recognition of electronic/digital signatures and formation of electronic contracts (affecting transactions both in public and private sectors), content regulation, competition regulation, electronic evidence, data privacy protection, consumer protection and rights, domain name registration and regulation, intellectual property rights, encryption and security, financial and banking sector law and regulation relating to electronic transfers and settlements, taxation of transfers, customs, jurisdiction, dispute resolution and civil and criminal offences, limitations of liability of internet service providers, cyber piracy and digital rights management, facilitation of e-government and cross border interoperability of e-commerce frameworks affecting trade.

### ATTRACTING PRIVATE INVESTMENT INTO ICT SECTOR

From 2003 to 2007, approximately US\$800 million has been invested by the private sector into the ICT sector of Afghanistan. According to numerous studies by the World Bank and other observers, this is by far the largest investment into the licit economy. MCIT estimates that an additional US\$750 million will be invested by the end of 2010.

**Figure 10 : Private Investment in ICT Sector**



Source: MoCIT

#### MOST ACTIVE DONORS IN ICT IN AFGHANISTAN

MCIT has been working extensively with both the donor community and the private sector since 2002. The primary donor relationship

has been with USAID and the World Bank, but there have also been projects and activities supported by the ITU, UNDP, JICA and the Governments of China, India, Iran and Korea. The list of private sector partners is even more extensive. The primary ones include the four nationwide mobile licensees (Areeba, AWCC, Etisalat and Roshan), as well as GSI, Motorola, Samsung, Huawei and ZTE.

Furthermore, the private sector "window" of the international financial institutions is also very active:

- Asian Development Bank (lending US\$75 million to Roshan)
- International Finance Corporation (lending US\$40 million to Areeba)

If aid effectiveness is measured on the basis of return on investment, then the role of the donors in the rapid development of the ICT in Afghanistan can only be deemed to be exceptionally high.

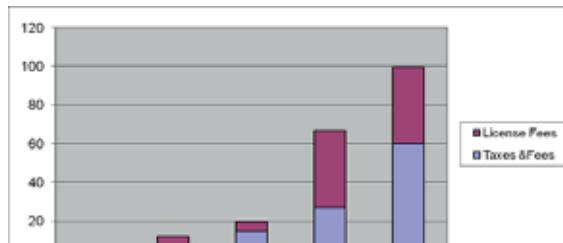
#### ICT Sector Contributes 20% of All Government Revenues

For the government fiscal year that ended on 20 March 2007, the ICT sector contributed approximately 20% of all government receipts to the treasury of Afghanistan. The ICT sector is heavily taxed, because it is law-abiding and is highly visible. The main elements of the contributions are:

- Business Receipts Tax = 10%
- Spectrum Fees = 2%
- Telecom Development Fund = 2.5%

The contribution of the ICT sector to the treasury is illustrated below:

**Figure 11: ICT Sector Contribution**



Source: MoCIT

## **INTEGRATING ICT INTO ANDS AND OTHER CROSS-CUTTING THEMES**

### **ANDS CROSS CUTTING ISSUES:**

**Gender Equality:** Mobile and Electronic commerce will make it possible for women to work at home and be commercially viable without offending cultural sensitivities.

**Counter-Narcotics:** Well connected societies are the lesser victims of narcotics and terrorism besides low employment is another breeding factor for terrorism, ICT will connect afghan society and will create job opportunities and facilitate ground for entrepreneurship.

**Anti Corruption:** E-Governance and other e-Enabled services will reduce the corruption

chances. If information is shared among all then it is less prone to force any entity for corruption.

**Regional Cooperation:** Fiber optic, national data centre, local content development, regional data repositories, regional cyber crime, regional data interconnection and such others are all good examples of regional cooperation which will be furnished by ICT.

**Environment:** Telephone services and the internet reduce the need to travel, which saves expenditures on gasoline and eliminates harmful emissions.

**Capacity Building and Institutional Reform:** The institutional reform phase began in 2003 and has almost been completed: Afghan Telecom was incorporated in 2005, the Afghanistan Telecom Regulatory Authority (ATRA) was established in 2006, and the Afghan Postal Commission (APC) was established in 2007. What remains is to incorporate Afghan Post and to attract private investors into Afghan Telecom in 2008. Capacity building also began in 2003 and continues. The PRR process was completed in 2007 and MCIT's internal training exceeds all other government institutions, especially with respect to learning English and IT skills. MCIT has 16 training centers now offering job-enhancing capacity

building and will have these facilities operating in all 34 provinces by 2010. MCIT (and Afghan Telecom & ATRA) regularly send appropriate personnel abroad to receive advanced technical and professional training from the ITU and other institutions.

**Others:**

In September 2007, the ANDS at one of its CG meetings has acknowledged that ICT is itself a cross-cutting theme, because it makes significant contributions to achieving the government's goals in ANDS themes. For example:

**Security:** Terrorists are taking advantage of the physical isolation of many communities to forcibly hold them back from integration into Afghan society; several ICT projects (like TDF, DCN, VCN) will provide the basic connectivity to eliminate this obstacle to progress. Another aspect is the storage and processing of authentic people and physical data of the country, which will reduce the opportunities of producing false and fake information.

**Governance and Rule of Law:** With the implementation of e-Government and e-Democracy the rule of law will be strengthened. ICT makes the government more accessible and more inclusive.

**Education:** With the introduction of Internet and distance learning to Afghan society the education sector will enter in to a new paradigm.

**Health:** The telemedicine and e-Health will enable Afghans living in far and remote areas of the country to benefit from the health facilities in metropolitan cities of the country and the rest of the world.

**Social Protection:** Through having national wide data bases with people data on it, it will enable the citizen as well the government to securely host, process and produce the authentic data about individuals thus reducing the tempering of people data. Thus no entity will abuse any one with the false testimonials in the society.

**Agriculture and Rural Development:** Through ICT we can promote the local commodity markets, by giving access to the farmers and other local business to market their product

over the internet. Data bases of first hand information for farmers will help them cultivate the right crop and market it in the right place in the right time.

**Economic Governance and Private sector Development:** It is always important to have the right information (facts and figures) in the right time to make a good economical decision. Most of the time the economical data in Afghanistan is missing, thus discouraging the FDI and economic growth. The bureaucracy is another factor of this discouragement, ICT can play vital role through the implementation of different MIS, the private sector development and economical governance will foster.

### **Impediments**

The major challenges to achieve the telecommunications goals are security, administration and financial bureaucracy, late approval of the annual budgets and development projects as well as weak implementation and technical capacity, which are the major concerns. Therefore, a strong capacity building effort is required to upgrade the capability of personnel and the government is also coping to assure that an acceptable security environment and refined

administration and financial procedures be developed for sound business.

Lack of security across Afghanistan has the following two primary negative impacts on the growth and development of the telecommunications sector.

Lack of security will dramatically slow down licensees' ability to extend network coverage and service provision into insecure parts of the country, thereby limiting the ability of Afghans in those areas to benefit from the provision of affordable telephony services. A sustained lack of peace and security will simply reduce foreign private investors and stakeholders' willingness to continue to invest in the sector. Given that much of the expansion of the sector has been driven by private sector investment to date, it should be expected that continued expansion will also result from further private sector investment. Investment levels may drastically be reduced in light of continued insecurity.

Lack of coordination among the government entities and lack of political will in the area of ICT is a major challenge; MCIT through the ICT Council will try to address the issue.

Lack of localized/local content is also slowing down the pace of the ICT promotion and adoption.

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# CHAPTER 1

## POLICY FRAMEWORK

### OVERALL STRATEGY FOR ICT SECTOR

#### Strategic Vision:

"Make affordable information and communication services available in every district and village of Afghanistan through enabling market economy"

#### Goals:

- To bring every resident (men and women alike), every home and school, every business and every public sector institution into the digital age and online;
- To create a digitally literate Afghanistan, supported by an entrepreneurial culture ready to finance and develop new ideas;
- To ensure that the whole process is socially inclusive, builds consumer trust and strengthens social cohesion.

MCIT's strategic vision, which was first stated in May 2003 and recently presented to the ICT Council, is:

"To make affordable communication services available in every district and village of Afghanistan through enabling market economy, so that all Afghans, men and women alike, can use ICT to expeditiously improve Government, social services, foster the rebuilding process, increase employment, create a vibrant private sector, reduce poverty and support underprivileged groups".

The objectives of the MCIT have been rapid development of the ICT sector by having multiple operators providing world-class quality services at reasonable prices. In July 2003, the MCIT adopted its Telecommunications and ICT Policy with

the aim to promote rapid telecom development through private sector investments. The Islamic Republic of Afghanistan firmly recognizes the importance of embracing telecommunications & ICT technologies to achieve the nation's development and reconstruction goals.

The ICT Policy is fully compliant with the sector framework required by the World Trade Organization (WTO) by making the MCIT responsible only for policy, by establishing an independent sector regulator Afghanistan Telecommunication Regulatory Authority (ATRA) and by corporatizing Afghan Telecom as the first step to removing the government from the provision of services to the public. The Policy encourages private investment through the introduction of measured competition; established Afghan Telecom as a state-owned corporation with the right to accept private investment; and supports rapid expansion of telecommunications and Internet services at the local level.

The policies recognize the use of ICT to provide healthcare, social services, and citizen's services, promote systems that accommodate convergence of various technologies and networks through providing a favourable investment and taxation environment. The policies will enhance government effectiveness by using e-government technology and by establishing a national data centre, to promote effective ICT training courses foster the capacity to trade goods and services by electronic means.

#### A.Overall Policy Framework:

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## B. Needs Assessment

The demand and supply in the sector is purely market driven and it has been observed in the developing economies that it is the economic growth and the purchasing power of the people which gives further growth to this sector. In 2003, the World Bank did its initial needs assessment of ICT in Afghanistan, and provided recommendations which were generally accepted and incorporated in the *Telecom & Internet Policy* (July 2003).

To date, closest thing to market analysis was GIPI a project by ACSA report (December 2006).

MCIT is conducting the first E-Readiness survey by the end of 1386, which will indicate the state of ICT in the country and the needs will be spelled out.

## C. Priority Policies & Objectives

The top policy priorities for the ICT sector strategy are:

- To bring every resident (men and women alike), every home and school, every business and every public sector institution into the digital age and online;
- To create a digitally literate Afghanistan, supported by an entrepreneurial culture ready to finance and develop new ideas;
- To ensure that the whole process is socially inclusive, builds consumer trust and strengthens social cohesion.

MCIT will achieve these objectives by providing leadership in the following strategic elements (the corresponding programs are discussed further below):

### Enabling Environment

The enabling environment means the written policies, laws, regulations, procedures, standards and other normative acts that ultimately comprise the legal-regulatory framework. As noted above, much of framework has already been accomplished.

Going forward, MCIT will be the primary force in further developing and improving the enabling environment, in order to attract additional private investment to the ICT sector. MCIT will work through the ICT Council to ensure that the enabling environment truly meets the needs of all Afghans, with particular attention to the needs of women. Public consultations will continue to be an important ingredient to achieve this strategy. In the past, MCIT has used videoconferencing to reach stakeholders in each of the 34 provincial capitals, plus has conducted periodic briefings in the districts (including the Community Development Councils) and semi-annual meetings in Kabul. This approach has proven successful and will be continued.

### Infrastructure

Infrastructure includes telecom networks,

hardware and physical facilities necessary to provide access to services.

The largest percentage of infrastructure has been deployed by the private sector since 2003. However, in very limited cases, where the private sector has shown unwillingness or inability to respond to infrastructure demands on a timely basis, MCIT has stepped in to take the leadership and utilized public funds. The best example is the national OFC ring, which is being funded using US\$65 million from the treasury.

### Applications

Applications refer to the business processes that are carried out utilizing the ICT infrastructure. For example, once a point of connectivity has been established in a particular village, the basic application will generally be telephone services, allowing the citizens at this location to communicate with everybody else on a worldwide basis. Depending on the location, additional ICT infrastructure may include computer terminals, which then enable additional applications, including internet access, distance learning and even telemedicine. Afghans living in close proximity of the access networks will be able to access the government services online e.g payment of taxes, health services, distance learning etc.

### Literacy

There is no easy way to overcome the high illiteracy rate in Afghanistan, which is frequently estimated at more than 70% nationwide. Regardless of the approach, it will surely take decades to reach the acceptable literacy rate in developed economies. But the linkages between jobs, economic growth, prosperity and literacy is very clear – Afghanistan will not become a stable economy without first achieving major progress in addressing literacy.

ICT can play a significant role in accelerating literacy. Within three years, ICT infrastructure and applications will be accessible to more than 80% of the population of Afghanistan. The Telecom Development Fund (TDF) – a program that is described in detail below – can facilitate ICT access to every school nationwide. However, this will not be enough. Working through the ICT Council, the teaching curricula has to be updated and expanded to take advantage of this access channel.

In many emerging markets – Egypt for example – the literacy challenge has been addressed by exposing all school children to distance learning on a mandatory basis. The miracle of ICT is that even the youngest children have a remarkable ability to rapidly accept new technologies, to the point that they quickly out-master their teachers and parents.

Literacy leads to participation – in the work force, in the democratic process and in strengthening the fabric of society.

## D. Desired Outcomes

### Enabling Environment

- The ICT Council, through the MCIT, will work to achieve the following:
  - By Jaddi 1386 (end-2007), support good governance by adopting a short list of priority programs, projects and funding mechanisms to ensure that ICT is deployed to support the timely implementation of the national elections in 1388 (2009).
  - By Jaddi 1387 (end-2008), promote transparency and citizen access to public information by adopting Rules and Procedures to require all government institutions to publish documents on their official websites (as a supplement to the Official Gazette).
  - By Jaddi 1387 (end-2008), promote government efficiency, reduce costly waste and ensure information system interoperability by adopting a full set of Rules and Procedures that will govern the competitive procurement and utilization of ICT by all government institutions.
  - By Jaddi 1388 (end-2009), reduce corruption by reviewing all government services and making recommendations for the adoption of ICT to streamline and automate (for example, customs processing, procurement and licensing).
  - By Jaddi 1387 (end- 2008), the CIO (Chief Information Officer) culture will be implemented in the government.

- By Jaddi 1387 (end- 2008), the e-Government resource centre will be established, which will be a central brain drain for the e-government projects of the government.
- By Jaddi 1387 (end-2008), MCIT will attract private investment for Afghan Telecom to reduce the financial burden on the treasury, and adopt the legal instruments for private investment into Afghan Post.
- By Jaddi 1389 (end-2010), the ICT sector will contribute 5 billions Afs (US\$100 million) annually to the national treasury by broadening the tax base (attracting additional investors to the market, rather than overburdening the existing ones).
- By Jaddi 1389 (end-2010), ATRA will foster a transparent legal-regulatory regime that attracts a further 37.5 billion Afs (US\$ 750 million) in private sector investment, and adds 50,000 in sector employment.
- By Jaddi 1387 (end-2008), MCIT will submit draft ICT Law governing e-Transactions, electronic commerce, electronic signatures and cyber crimes to the Parliament for promulgation.

## **Infrastructure**

- By Jaddi 1389 (end-2010), national ICT networks will be expanded and interconnected so that more than 80% of Afghans will have access to affordable telecom services.
- By Jaddi 1387 (end-2008), Afghan Post offices will be modernized using ICT to ensure reliable collection and distribution of mail.
- By Jaddi 1387 (end-2008), Afghanistan National Data Centre will be ready to host the e-government applications
- By Jaddi 1388 (end-2009), ICT Village will be established in Kabul, this facility will attract the FDI and local investments in the ICT market.

## **Applications (E-Afghanistan)**

- By Jaddi 1387 (end-2008), cross-cutting electronic government applications will be launched to support the government efficiency and reduce bureaucracy e.g. e-Procurement, e-document Management System.
- By Jaddi 1387 (end-2008), the infrastructure of mobile networks will be adapted to enable mobile commerce, meaning the use of phones to transfer funds and conduct other financial transactions (pay utility bills and taxes, make retail purchases).
- By Jaddi 1389 (end-2010), all Afghans should have the possibility of obtaining basic medical diagnosis by remote ICT access and having a health smartcard providing secure, confidential access to networked patient information.

## **Literacy**

- By Jaddi 1387 (end-2008), unified Curriculum and regulatory framework for the private ICT training centers will be drafted in cooperation with Ministry of Education.
- By Jaddi 1387 (end -2008), MCIT will have established one IT Training centre in 34 provincial capitals each to facilitate the ICT literate work force in the provinces as well.
- By Jaddi 1388 (end-2009), all schools should have access to the internet and multimedia resources, together with a basic curricula that includes browsing, searching and messaging.
- By Jaddi 1389 (end-2010), digital literacy must be adopted as one of the mandatory basic skills of all young Afghans. The internet and multimedia resources must be introduced in schools and education must be adapted to the digital age.
- By Jaddi 1397 (end-2018) all pupils should be digitally literate by the time they leave school. For details regarding outcomes refer to Annex I (Action Plan).

## Capacity Building

There has been an enormous loss of skilled professionals from Afghanistan over the last two and half decades of the civil war in the country. Afghanistan has either lost such people or they were forced to leave the country because of the political plights. The government of Afghanistan recognizes the critical importance of embracing capacity building to achieve the nation's development and reconstruction goals. The lack of local capacity for the management and implementation of the projects is the main problem to further develop the reconstruction of the country.

Empowering the capacity building is one of the government's high priority and most attentive project in Afghanistan to start comprehensive capacity building with initial funds available at provincial and capital level, which is the key to the development of the capacity of civil servants; therefore, further support to above is needed to allow them to continue providing these much-needed services.

Within the Ministry, employees have received ongoing training in basic computer skills and English, which is the primary language for business worldwide. It is the goal of MCIT that by the end of 2007, every employee will have a written job description that addresses their contribution to the achievement of MCIT's goals, that a performance appraisal will be conducted every six months and that training will be mandatory to achieve professional conduct and career advancement. MCIT has initiated a public dialogue to transform its ICT Training Center into a public-private partnership so that the technical curriculum is modernized to reflect the needs of prospective employers. MCIT has also begun collaborating with the University of Kabul to accelerate the formation of the Public Administration Institute as the vehicle to raise the standard of institutional capacity building.

In 1973 ITU in collaboration with UNDP had established a very well equipped "Telecommunication Training Centre, TTC" in Kabul Afghanistan. At that time the TTC had been recognized as a special college by Ministry of Education of Afghanistan to train the students at Telecommunication Engineering and Technicians level. Most of the existing technical staff of the

MCIT are graduates of this centre or were trained in this centre. Since its inception, more than 1,200 well-trained professionals have graduated from this centre. During the two and a half decades when Afghanistan was faced with invasion, civil war and isolation, most of the technological infrastructures of the country including this Centre were badly damaged and all laboratory equipments of the Center were destroyed. More serious is the damage to human capacity and knowledge due to the fact that two generations missed to get education and most of the previously educated class have migrated or have become too old. Also, nearly all instructors of the Center had left the country.

MCIT has included development of human resources among its highest priorities. Development of human resources in communication and information technology plays a significant and important role in the reconstruction and development of the country both from social as well as economical point of view. In fact, telecommunication is the key ingredient of economic development. The whole process of development of this sector depends on the availability of trained and qualified people in the market. The huge task and challenge in reconstruction of Telecom sector and its modernization, depends on training young Afghan students and full capacity development of the existing staff which has been disconnected from the new era of the information and communication technology and the advances made in the last two and a half decades.

Therefore, by taking into account the acute need of skilled human resources development, priority was given for rehabilitation and reconstruction of this Training Centre by the MCIT. To achieve this goal, in December 2003, an agreement was signed between the ITU, the Government of I.R. of Iran (as the Donor country) and the government of I.R. of Afghanistan.

## Poverty Reduction

The ICT sector directly benefits poverty reduction in the following manner:

1. Attracting private sector investment into Afghanistan means that the IROA does not have to utilize its own scarce resources (treasury) on building this infrastructure.

2. The US\$800 million that has been invested between 2003-2007 is largely for infrastructure, which becomes a lasting part of the "value" of the economy.

3. A portion of that investment goes to employment, both direct and indirect. Some of the jobs are for unskilled labor (such as construction of the towers, transportation and security) but a vastly larger and growing share goes for skilled jobs (such as sales, marketing, management and customer support). Moreover, these roughly 50,000 new jobs that were created since 2003 are the highest paying opportunities for Afghans in the licit economy.

4. All of the ICT companies also expend a considerable amount of time and money in training their work force. In fact, because of the rapid growth of the sector since 2003, there is actually a shortage of skilled workers, so on-the-job training is becoming increasingly important to recruit and retain the most talented Afghans.

5. With approximately 2000 base stations (transmission towers) now deployed, the mobile companies today reach around 70% of the population of Afghanistan, and they will reach 80% coverage by 2010. By virtue of wireless access, more and more people have the option to communicate, to receive education and to pursue licit employment.

## E. Inputs & Outputs

### Fiscal Implications

The ICT sector today brings approximately 20% of tax receipts to the treasury. As more service providers enter the market and as long as each of them continue to grow, the value will also rise. It is expected to reach US\$100 million by 2010. In addition, the privatization of Afghan Telecom will bring a significant windfall to the Treasury. Broadening the tax basis by private sector competition to meet the demand of the users (where the money is coming from). Right now, collect 14.5% of revenues:

- Custom duty for the importation of the infrastructure = 8%
- Telecom Development Fund (TDF) = 2.5%
- Spectrum Fees = 2%

- Business Receipt Tax (BRT) = 10%
- Income tax = 10%
- Payroll/health benefits and life insurance = 10% (rough estimate)

Every additional user brings the multiplier effect of these revenue resources to the government. Meanwhile, each company hires additional staff and employee payroll has additional tax benefits to the government.

## F. Programs

### Program One: The Enabling Environment

The Afghanistan Telecommunication Regulatory Authority (ATRA) and the ICT Council are the primary mechanisms to achieve MCIT's strategies and goals. In particular, ATRA will continue to issue licenses that attract private sector investment, pushing the availability of telecom services further into every village in Afghanistan. Each existing and new licensee will pay licensing fees and spectrum fees, as well as taxes and customs duties, which will reach a volume of 5 billion Afs (US\$100 million) by Jaddi 1389/2010. Each existing and new licensee will also invest in telecom infrastructure, expected to reach a further 37.5 billion Afs (US\$750 million) by Jaddi 1389/2010. ATRA is committed to achieving the following projects in the coming by 2010.

MCIT established the Afghan Postal Commission (APC) in June 2006 in order to achieve the WTO benchmark to separate policy, regulatory and operations. The APC has taken some rudimentary steps to become an independent sector regulator, but it requires a vast amount of technical assistance and institutional capacity building. Among the top priorities for the sector is the adoption of a transparent licensing regime, including a license for Afghan Post. Afghan Post is presently an administrative department of MCIT, but in order to attract foreign direct investment, Afghan Telecom should be re-structured and incorporated, just as was done with Afghan Telecom (for projects detail see attached annex III).

**Telecom Development Fund (TDF):** ATRA will conduct a public consultation to define the terms and methodology for multiple projects to

accelerate the construction of wireless networks in rural and underserved areas of Afghanistan. Examples of likely projects are: creation of community telecenters; provision of internet connectivity to schools; rapid mobilization of Village Communication Network (VCN) to respond to requests from community leaders. ATRA will work closely with Provincial and District governors, the Provincial Development Councils (PDC), the Provincial Reconstruction Teams (PRT), the provincial directors of the MCIT, the members of Parliament, donors and other interested parties to ensure that these new access facilities meet the immediate needs of the rural users and women. The immediate goal is to provide basic telephony connectivity, but further needs such as distance learning, remote payment of salaries and access to microfinance via mobile commerce platforms will be promoted. Special programmes will be established to assist women to access microfinance.

By Jaddi 1386 (end-2008), the Afghanistan Telecommunication Regulatory Authority (ATRA) will conduct public consultations to complete all of the normative acts that are required by the Telecom Law, including:

- Procedural Rules (Voting, Appeal)
- Administrative Rules (Hiring, Spending, Reporting)
- Substantive Rules (Licensing, Frequency Assignments).

By Jaddi 1386 (end-2008), ATRA will complete an independent audit of its finances, with particular focus on the Telecom Development Fund (TDF). The results of the audit will be submitted to the Government as part of an annual report of activities published on the ATRA official website.

By Jaddi 1387 (end-2009), ATRA will have launched international competitive tenders to provide telecom and ICT services in rural underserved areas of Afghanistan, using the TDF.

By Jaddi 1389 (end-2011), the majority of ATRA professional staff will have completed certification

program in the newly launched Public Service Institute at Kabul University (or equivalent). The employment of women will be particularly favoured and ATRA will strive to increase the percentage of female staff to 30%.

#### Removing the Government from Provision of Telecom Services

- By Jaddi 1386 (end-2007), Afghan Telecom will be fully restructured and will be ready to introduce new products and services to improve its commercial position in the market. The first phase will be to move to prepaid calling and to automate all the internal operations.
- By Jaddi 1387 (end-2008), it is expected that most retail customers will be receiving full mobility services and institutional customers will have wired broadband services.
- By Jaddi 1386 (end-2007), a fully functioning ICT Council will be in place top avoid duplication and waste and to improve the professional capabilities of the staff.
- By Jaddi 1387 (end-2008), the ICT Council will select the first cross cutting e-government applications (for example it might be payroll, procurement).
- By Jaddi 1387 (end- 2008), the CIO culture will be implemented in the government.
- By Jaddi 1387 (end- 2008), the e-Government resource centre will be established, which will be a central brain drain for the e-government projects of the government. By Jaddi 1389 (end-2008), MCIT will submit draft ICT Law governing e-Transactions, electronic commerce, electronic signatures and cyber crimes to the Parliament for promulgation.

#### Program Two: Infrastructure

The traditional structure of the communications sector is comprised of telecom and postal services. Afghan Telecom will continue to refine its commercial strategy to better meet the needs of the consumer and react more successfully to the new competitive market conditions. Afghan

Telecom will deploy new wireless technologies to make service more affordable and comparable with what is now offered by the GSM licensees. It will also move to adjust its retail prices to be cost-oriented, as required by the Telecom Law, and will migrate to a pre-paid service platform to eliminate the non-payment problem. Based on what has been done with Afghan Telecom, MCIT will go the same path with Afghan Post (for projects detail see attached annex III).

Afghan Post is active at approximately 400 facilities nationwide, but the vast majority is in very poor physical condition and generally lacks ICT. Taking advantage of those locations with ICT, Afghan Post has recently entered into a commercial arrangement with Western Union to provide funds transfer services and will offer money order and other financial services in the near future. Afghan Post implemented a self-service kiosk and is in the process of automating its sorting processes to improve customer service. The primary ICT infrastructure programs by Jaddi 1388 (end-2010) include:

- Expansion of telecom service coverage to 3000 villages, 150,000 digital lines in 5 major cities and highways, including roads to major border points.
- Implementing the national fiber optic ring to further enable national and international communications at lower prices with good quality.
- Extending the reach of the existing GCN and DCN locations to all schools within 10-30 kilometers via wireless (WiMAX) as is presently being done with the PGCN.
- Accelerate the deployment of towers in rural and underserved communities, using subsidies from the TDF, if necessary.

**Fiber Optic Ring:** Afghan Telecom will continue to supervise the MCIT's major infrastructure programme, which will link the six major cities of Afghanistan via fiber optic cable. This system will also link to neighboring countries like Iran and Pakistan to eliminate the high cost of satellite connectivity, this making retail calls and internet access more affordable to more people. MCIT will retain ownership of the system until it can be

privatized to provide non-discriminatory access to all licensees. The supply and construction contract was awarded to a Chinese supplier in November 2006 and the project is expected to be fully complete by the end of 2008.

**District Communications Network (DCN):** Afghan Telecom will continue its satellite system to reach all of the 365 districts with at least a basic level of telephone services. In many cities, where demand warrants it, the DCN will offer additional community services, such as distance learning and access to microfinance.

**Village Communications Network (VCN):** VCN will be a further extension of the DCN satellite network, which will eventually reach 5-6,000 communities throughout Afghanistan. A financial analysis of the DCN operations revealed that a low-cost version could be commercially viable if the package configuration is scaled down. Nevertheless, donor funding would be essential to achieve a rapid roll-out.

**Broadband Access:** An integrated public safety network, linking local, regional and national players – ATRA is responsible for assigning spectrum for all commercial and public service requirements. ATRA will conduct a public consultation to define the terms of an international competitive tender for multiple nationwide licenses of new broadband wireless services. Pursuant to the Telecom Law, the licenses will be awarded by an auction that may bring substantial fees to the treasury and include mandatory network construction milestones.

- By Jaddi 1386 (end-2007), organize a Public Safety Task Force, consisting of the Ministry of Interior, the Afghan National Army, the border protection forces, the President's National Security Advisor and the police, fire and ambulance entities
- By Jaddi 1387 (end-2008), facilitate the adoption of the appropriate technical standards, including the assignment of spectrum frequencies, to ensure interoperability of all public safety elements and to establish protocols for emergency response at the local, provincial and national levels. Guidance will be based upon the technical specifications already contained in the ANA TETRA network procured by

international competitive tender in 2006, as well as international best practices using TETRA systems in Germany and elsewhere.

- By 2009, identify gaps in coverage and capability and obtain donor funding to achieve reliable public safety network architecture. The network will be managed by the individual user groups, and additional technical training will be included as part of the competitive tender solicitation requirements.

**National Data Center (NDC):** The NDC is being refurbished and by Jaddi 1387 (end-2008) will be the secure physical hub for many government-wide networks and computer applications. It will also contain a research and development centre to allow Afghans to conduct research as per the needs of the country and afghans society. The NDC will also facilitate web hosting and other advanced web services presently available only outside of Afghanistan. An e-Government resource centre will be hosted in the national date centre, which will be the central location for the development of main e-enabled services projects for the government.

**Internet Exchange Point (IXP):** The IXP will be housed in the NDC and provide a shared platform that will eliminate the need to send vast volumes of internet traffic outside of Afghanistan via satellite. Presently, every electronic message has to be routed to external hubs (in Dubai, Hong Kong or elsewhere) even if both the originating and terminating location is within Afghanistan.

### **Program Three: Applications (E-Afghanistan)**

The official name of the Ministry has been changed from the Ministry of Communications to MCIT to reflect its new, broader responsibilities which extends beyond just communications to include also information technology (computers and networking).

For the promotion and development of ICT, MCIT has designed E-Afghanistan as a program which covers E-Government, Cyber Security, National ICT Council, Internet Governance, Building ICT Capacity, Localization and ICT standards. ,

These activities will enable Afghanistan to fully benefit from ICTs and in the course of coming 10

years Afghan society will be based on information fully benefiting from the international market and opportunities. To achieve that goal the following projects are planned and are underway (for projects detail see attached annex II).

**National Identity Management Initiative (NIMI):** The ICT Council must act quickly to avoid a serious waste of financial resources that is just over the horizon.

During the national elections in 2004 and 2006, more than US\$200 million was spent on the entire process, which included the rudimentary documentation of "qualified voters" at over 60,000 locations nationwide. In order to meet donor benchmarks, all of this work produced over 2 million paper records, with absolutely no forward-planning that would avoid the need to repeat the entire process in all future elections.

Consequently, the United Nations (UNAMA) and the Independent Election Commission (IEC) have assessed that the entire data set from the previous two elections are incomplete, unreliable and unusable for the 2009 elections. In mid-2007, UNAMA and IEC have undertaken two pilot projects to explore the use of ICT to create a new qualified voter database. Once again, individual voter data will be collected at more than 60,000 locations, but this time it will be a combination of biometric scans and paper (that will eventually be stored electronically). It is estimated that close to US\$100 million will be spent on the 2009 elections (to be funded largely by USAID).

It is imperative that the maximum lasting value of this expenditure accrue to the people of Afghanistan. The ICT Council will need to coordinate the following projects:

- Mapping (digital mapping of the election districts)
- Identity Cards (starting with the Civil & Voter Registry)
- Valuable Documents (Ministry of Finance printing of passports, drivers licenses, birth & death certificates, etc)
- Census.

The basic idea is to create a minimum "core personal data set" that would eliminate the need

to repeatedly collect the same information at various government institutions.

**Electronic Government (e-Gov):** e-Gov applications will make the provision of government services more efficient and transparent, thus reducing fraud and corruption. Examples include automated procurement and logistics, driver's license and passport renewals and fiscal services (payroll, budget, and customs).

- By mid-2007, bring the ICT Council to becoming a fully-functioning institution that will guide the adoption of government-wide standards and ICT policies and coordinate ICT projects and resources amongst all institutions to reduce duplication and wasteful spending
- By mid-2007, drive the ICT Council to reach an agreement of the top ICT priorities and conduct a nationwide e-Readiness assessment (including infrastructure, applications and human resources)
- By the end of 2007, define a suitable e-Government project that will serve as the template for all future cross-cutting ICT applications, and obtain donor funding for rapid implementation
- By mid-2008, have the first e-Government project deployed on a small scale and by the end of the year, fully deployed across all institutions
- By 2008, identify further e-Government projects and obtain donor funding as needed
- By 2009, ensure that e-Government applications reach to the provincial, regional and district levels MCIT will work with the new 5-year US\$200 million USAID Capacity Development Program (CDP) to ensure that training is provided to all potential user groups.
- By 2010, deploy the broader suite of e-Government applications.
- The MCIT will work closely with the Ministry of Education and Kabul University to mobilize the necessary resources to ensure that the youth of Afghanistan are e-Ready

#### Accelerating E & M commerce

- By the end of 2007, ATRA will organize a task force to promote the adoption of technical standards so that mobile phones can be used to access commercial bank accounts as part of an inexpensive medium for microfinance and trade
- By the end of 2008, mobile commerce should be possible on a nationwide basis and also facilitate standard commercial transactions amongst users and vendors
- By the end of 2008, the MCIT will facilitate the establishment of Electronic Certification Authority in collaboration with Da Afghanistan bank responsible for the issuance of Public Key Infrastructure (PKI) certificates.
- By 2009, the IXP should substantially reduce nationwide internet costs by
- eliminating the need to route all traffic outside of Afghanistan
- By 2009, the PKI should foster the creation of domestic electronic commerce sites, including government electronic procurement

#### Smart cards for secure electronic access:

- By the end of 2008, the ICT Council will adopt a suitable national standard for smart cards that may be used as the basis for a National Identity Card, National Healthcare Card and other official and commercial purposes
- By the end of 2010, the ICT Council will facilitate donor funding to integrate these smart cards into applicable e-Government projects.

#### Electronic participation for the disabled and the disadvantaged (including women)

- By the end of 2010, the ICT Council will adopt standards requiring the design and content of all official websites and e-Government applications to be accessible to persons with disabilities. These are specially-designed features geared only to overcome disabilities such as blindness (Braille keyboards, voice conversion into text, etc.)

- By the end of 2008, the ICT council will support MCIT to ensure all such official websites and e-Government applications are fully functional.

#### Healthcare online

- By the end of 2008, the ICT Council will work to obtain donor funding for a pilot project that will utilize the District Communications Network (DCN) as the basis for remote healthcare (possibly diagnosis, exchange of basic medical information and real-time remote treatments) MCIT is already working with the Ministry of Health for the initial pilot phase, which is to utilize teleconferencing facilities and high-speed broadband connections that can rapidly display colour images on standard computers.
- By the end of 2010, MCIT will work with the Ministry of Health, the Ministry of Environment and the Ministry of Labor to adopt a plan for all Afghans to have the possibility of having a health smartcard providing secure, confidential access to networked patient information.
- By the end of 2008, MCIT will establish MPCT (Multipurpose community Technology Centers) to be used for the E-Agriculture, e-Health and other such e-services for the local communities.

#### Program Four: Literacy

The low level of literacy is one of the fundamental barriers to economic prosperity in Afghanistan. ICT can play a major role in reducing this hurdle, because it eliminates distance and makes the world of information available 24 hours a day, 7 days a week.

The United Nations recognizes that in the modern world, there is actually a very wide range of literacy that is needed:

- Information Literacy – the skills required to organize and search for information, while also analyzing the information.
- Critical literacy – the ability to engage in critical thinking, and judge the intention

content and possible effects of written material or information.

- Mobile literacy – the ability to use mobile technology, such as the mobile phone and its non-voice functions.
- Media literacy and research literacy – the ability to be a discerning reader and the ability to find various type of information.
- Cultural literacy – the ability to understand cultural, social and ideological values in a given context.
- Legal literacy – the knowledge of basic legal rights and how to protect those rights.
- Visual literacy – the interpretation of images, signs, pictures and non-verbal (body) language.

The ICT Council wants to ensure that the citizens of Afghanistan are on a path towards increased literacy, which will lead to more skilled jobs and a sustainable economy. The Minister of MCIT envisions addressing each of the three plateaux of literacy:

- Basic literacy
- English literacy
- ICT literacy.

On a worldwide basis, 771 million people aged 15 and above do not have basic literacy skills. Worldwide, only 88 adult women are considered literate for every 100 men. Literacy rates are lowest among linguistic, ethnic, religious and other minority groups. Illiteracy tends to prevail in low-income, often heavily indebted countries with widespread household poverty.

Literacy, by facilitating access to written information about socio-political events and processes, can enable people to participate more fully in such things as community meetings, commercial activities and national political life. Literacy also enables people to become aware of, and exercise, their rights. For example, after developing literacy skills, a woman in Mexico

learned how to search for information on the internet and accessed materials relating to human rights. From this, she learned that her father, who was in prison, was being held unjustly. With her new knowledge and with legal advice, she achieved her father's release.

In addition, literacy skills open up opportunities for active participation in the emerging "knowledge societies." In knowledge societies, with new technology and the growth of the internet as a public network, the work of modern businesses, governments, health systems and institutions is made possible because of the capacity to generate written information and communicate it quickly to others, no matter where they are in the world. Without literacy skills, the scope for participation in such societies and public knowledge would be extremely limited.

**Basic literacy** means the ability to read and write and therefore learn and ultimately be employed. There are over 6 million school-age children in Afghanistan, and the Ministry of Education has the primary responsibility for educating them. ICT can immediately help provide access to a uniform teaching curricula and content, aiding both teachers and students. DCN is already operating in each of the 220 largest urban areas of Afghanistan, and MCIT has made these facilities available to the Ministry of Education for use. For example, the Ministry of Education has a distance learning department that utilizes weekly televised courses – these programs can be loaded to a server and downloaded at any DCN upon demand. The MCIT will work with the Ministry of Education to ensure that the next generation of youth will be ICT ready.

**English literacy** is on the critical path towards ICT literacy. In large part, this is because most software applications are still generated in English. But even the process of "localizing" these packages requires a solid understanding of English first. The UNDP had been providing English training to the MCIT (and other government institutions) since 2003, but the funding ended in 2006. MCIT, working through the ICT Council, is in the process of attracting new donor sources to continue this training. The CDP appears to be a good possibility for this.

**ICT skills** can generally only be acquired once

basic literacy has been achieved. It can be broadly defined in three categories:

- ICT practitioner skills – the capabilities required for researching, developing, designing, strategic planning, managing, producing, consulting, marketing, selling, integrating, installing, administering supporting and servicing ICT systems.
- ICT user skills – the capabilities required for the effective application of ICT systems and devices by the individual. ICT users apply systems as tools of their own work. User skills cover the use of common software tools and of specialized tools supporting business functions within an industry (such as banking). At the general level, they cover "digital literacy."

E-business skills – the capabilities needed to exploit opportunities provided by ICT, notably the internet; to ensure more efficient and effective performance of different types of organizations; to explore possibilities for new ways of conducting business, administrative and organizational processes; and to establish new businesses (for projects detail see attached annex II).

Some examples of ICT workers include:

- Database design, development and administration
- Digital media (animators, artists, web developers)
- Enterprise systems analysis and integration (process analysts, application integrators)
- Network design and administration
- Programming and software engineer
- Technical support
- Technical writing and training
- IT sales and marketing
- Contact center operations (call centers)
- Data encoding and transcribing (content conversion).

In Afghanistan, the linkage between literacy and employment is presently very warped, because the international donor community and their contractors pay the highest wages, even for relatively "unskilled" work such as drivers, cooks and security guards. In order to prepare Afghanistan for the future (once this international distortion is removed) it is important to recognize the literacy deficiency in three dimensions:

- Shortage – insufficient numbers of skilled people in the labor market or in an occupational segment.
- Gap – a competence shortfall between the current and needed competence levels of individual staff within organizations.
- Mismatch – a misalignment between the competence of the trainee or graduating student/learner and the expected competence needs of the employers. Mismatch is assumed to arise from the failure of the educational system to deliver the courses, curricula and skills that are actually sought by employers.

In order to address these considerable deficiencies, the ICT will provide leadership within the ICT sector by:

- **Raising awareness** – exchanging information and good practice for the promotion of science, math, ICT, teacher training and gender issues; encouraging awareness campaigns to provide parents, teachers and pupils with an accurate understanding of opportunities arising from ICT education and careers and reinforcing the links between ICT and innovation.
- **Developing supporting actions and tools** – supporting the development of an e-Competence framework, of an e-Skills career portal; promoting multi-stakeholder partnerships, quality criteria for industry-

based training, new curriculum guidelines including services sciences and appropriate incentives, especially for SMEs.

- **Fostering employability and social inclusion** – launching an initiative on e-Inclusion in 2008 with a view toward substantially reducing the digital divide by 2010; encouraging corporate social responsibility initiatives; and promoting how public and private funding instruments can support such initiatives.
- **Promoting better and greater use of e-Learning** – promoting the development of courses and mechanisms facilitating the exchange of e-Skills training resources; supporting the networking of e-Learning and training centres with neighbouring countries and promoting successful e-Learning strategies.
- **Promoting long-term cooperation and monitoring progress** – maintaining a regular dialog with donors and neighbouring countries; releasing an annual report presenting a synthesis of supply and demand and assessing the impact of global sourcing on ICT jobs and occupations.
- By end of 2008, MCIT will establish ICT training centres in each of the 34 provincial capitals.
- By end of 2008, MCIT in cooperation with Ministry of Education will draft the curriculum and regulatory framework for the ICT training centre in the private sector.

By the End of 2011, MCIT will be graduating for the first time 50 students with bachelor's degrees in different fields of communication and information technology.

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# CHAPTER 2

## ICT SUB-SECTOR STRATEGIES

The ICT sector strategy envisions an ecosystem of many stakeholders. The government is the main actor in the development of the sector, and works through the ICT Council to reach all stakeholders. There are four primary ICT sub-sectors:

- Government & Health (Provincial, District & Community level)
- Consumers (Constituents, Citizens & Civil Society)
- Business
- Education (Academia, Research & Technology Transfer).

### GOVERNMENT:

The government is the focal point for, and facilitator of, all of the ICT sub-sector strategies. As already noted above, the ICT Council is the forum for the stakeholders. Looking to the future, the hardest task facing the ICT Council will be reaching out to government institutions outside of Kabul. ICT will also help to achieve this goal, so as the infrastructure and application programs are activated, this strategy will be self-sustaining. One example of a program that is already well underway is the videoconferencing platform that connects several offices in Kabul with at least one government office in each of the provincial capitals. The President regularly uses this technology to reach out to government officials, media and civil society representatives (like elections coordination) in one or all 34 end points. A second program is underway to extend basic connectivity to all government institutions in each of the provincial capitals. The Provincial

Governors Communications Network (PGCN), funded by the US military, uses the latest wireless technology (WiMAX) that connect all locations within 10 kilometer radius (depending on topology) with broadband access that can be used for voice, fax, internet and videoconferencing. The ICT Council will need to consider additional programs and projects to drive the impact of ICT down to the most grassroots level, meaning greater participation at the provincial, district and community levels. Consideration must also be given to integrating the Parliament into these initiatives, because each elected official will be more effective with more robust connectivity with their local constituency.

### CONSUMERS:

Because of the high level of illiteracy in Afghanistan, most consumers depend on word-of-mouth, and to a much more limited extent, radio and television. Consequently, there is not a very strong consumer voice detectable, which also fosters corruption, fraud and poor quality goods and services.

The first nationwide consumer help line was established by ATRA in February 2007. It caters primarily to protect and assist consumers of mobile telephone services. Each week, an average of 300 legitimate complaints are registered and resolved. This ATRA office is a safety net to all consumers to ensure that the five major telecom licensees provide the services as promised. The ATRA consumer help line is a supplement to the consumer care lines established by each of the service providers (which is a firm license requirement). The utility of the ATRA consumer line was proven in May 2007, when the number

of calls spiked to 1000 per week in reaction to malicious and erroneous rumors emanating from Pakistan and Iran about bizarre mobile handset malfunctions.

Similar consumer help lines are now being considered to report customs corruption at the frontier border posts, assist arriving passengers at Kabul airport and generally report government fraud, waste and abuse.

#### **BUSINESS:**

The only way for a stable economy to emerge in Afghanistan is for legitimate private sector development to flourish. As noted by the World Bank's "Doing Business Indicators" the chief barrier to entry is the very high level of corruption. Afghanistan should look to the most business-friendly places like Hong Kong and Singapore as a suitable template for attracting new investment (and de-emphasize the neighboring countries). For example, two commercial laws that were promulgated in January 2007 require a central business registry to be established. This would replace the present system that requires registration of companies with the Commercial Court of Kabul. This goal for this registry should be to make it as easy to register a company as in Hong Kong, Qatar or Delaware (in the United States). Using ICT, the registration process can be accomplished in under 15 minutes, online, from any place in the world. Using electronic

commerce, the entire process can be 100% transparent and also give prospective investors a very favorable first impression of the business climate in Afghanistan.

#### **EDUCATION:**

Illiteracy is the enemy of economic progress. In many developing countries, the political leadership has recognized that the most effective method of rapidly raising the literacy rate is to focus primarily on the youth. In Egypt, a government initiative launched in 1998 is now widely considered a good model to make the large number of youth employable, by giving them access to ICT from the very earliest age. While the program has evolved over the past decade, the key ingredients are: free access to ICT at all schools, integration of ICT into the normal school curricula (for example, web research of relevant topics) and multi-media courseware (including short courses upon demand).

In the near term, the ICT Council can foster the development of linkages between existing ICT infrastructure and applications to accelerate progress in literacy. For example, the Ministry of Education already prepares hourly educational programs that are broadcast on national television. Discussions have proposed to make this library of educational programming available upon demand via the internet.



## CHAPTER 3

# CROSS CUTTING AND OTHER SECTOR RELATED ISSUES

In September 2007, the ANDS leadership agreed to designate ICT as a cross cutting element.

ICT is already fundamentally mainstreamed each of the cross cutting elements.

In addition, ICT also contributes to the advancement of the previously-designated cross cutting elements.

### GENDER EQUALITY:

There is not now, nor has there ever been any specific barrier to women in the acquisition or use of ICT. Mobile phones can be purchased at thousands of retail outlets across Afghanistan. More importantly, ICT contributes greatly to gender equality because of the wireless nature of the majority of ICTs available. Mobile phones allow women to communicate with family and friends – and indeed conduct business – in the privacy of their homes, in those communities where cultural edicts prevent free and open travel. In addition, Afghan Telecom also offers equipment that even connects computers to the internet by inexpensive wireless access up to five kilometres from the towers.

### COUNTER NARCOTICS (AND COUNTER INSURGENCY):

From the very start of the mobile service availability in Afghanistan, communities have welcomed the erection of mobile towers, not only because of the direct benefit of connectivity to the

outside world, but also the indirect benefits of local jobs.

The licensees have all reported that once a mobile tower is erected in a community, the community rallies around the infrastructure to protect it. Once the mobile service is available, the community is immediately able to report illicit activities. ATRA has recently commenced the process to assign a national short code to allow citizens to report illicit activities (counter narcotics and counter insurgency) to a central help line.

### REGIONAL COOPERATION:

MCIT has begun the construction of a fibber optic ring that will connect the six major urban centers, with further spurs to each of the neighbouring countries. In fact, the fibber optic connection to Iran is already operational.

Once complete, this system will allow traffic to transit through Afghanistan – and this will generate revenues, just as transiting products and over flight fees generate revenues for the treasury.

### ANTI-CORRUPTION:

The use of ICT increases transparency in all commercial and governmental transactions. The fact that the bureaucracy frequently require multiple signatures and official stamps is seen by many as a rent seeking barrier to efficient business. In addition, as more government laws, regulations and procedures are published on the official websites of the government institutions, the citizens will be able to verify and comply.

## **ENVIRONMENT:**

The use of ICTs makes the world flat, meaning that a wide array of activities can be conducted remotely, instantaneously and 24 hours a day.

This substantially reduces the need for travel. For example, President Karzai today routinely conducts meetings with the 34 provincial governors via video or teleconference facilities provided by Afghan Telecom.

## **CAPACITY BUILDING AND INSTITUTIONAL REFORM:**

The institutional reform phase began in 2003 and has almost been completed: Afghan Telecom was incorporated in 2005, the Afghanistan Telecom Regulatory Authority (ATRA) was established in 2006, and the Afghan Postal Commission (APC) was established in 2007. What remains is to incorporate Afghan Post and to attract private investors into Afghan Telecom in 2008. Capacity building also began in 2003 and continues. The PRR process was completed in 2007 and MCIT's internal training exceeds all other government institutions, especially with respect to learning English and IT skills. MCIT has 16 training centres now offering job-enhancing capacity building and will have these facilities operating in all 34 provinces by 2010. MCIT (and Afghan Telecom & ATRA) regularly send appropriate personnel abroad to receive advanced technical and professional training from the ITU and other institutions.

Risk Assessment ( major constraints to implementation: security, capacity, etc.)

- Regime change will paralyze policies
  - The project might be delayed due to the security reasons
  - The project might be delayed because of missing coordination among the government entities.
  - Lack of information and local content
  - Lack of coordination among the ICT implementing and adopting agencies.
  - Lack of trained HR and local e-govt expertise.
  - Geographic condition of rural Afghanistan
  - Government official interference
  - Lack of financial Resources,
  - Bureaucrat resistance to change
  - Lack of funding to implement government ICT system
  - Unavailability of Land
  - Resistance to change in the business process.
  - The buy in from the local data network owners could delay the project implementation
  - Lack of human resource could delay the implementation of the project.
  - Bureaucrat resistance to change
-



## CHAPTER 4

# IMPLEMENTATION FRAMEWORK

### MONITORING AND EVALUATION

Monitoring and evaluation will be performed by the ICT Council.

The aim of the ICT Council is to develop a common understanding among all stakeholders on the nature and implementation of ICTs in Afghanistan in order to enhance the coordination among all stakeholders of ICT in Afghanistan. The ICT Council is “multilateral,” “transparent” and “democratic” as well as with the notion of the full involvement of government agencies and stakeholders of ICT sectors in Afghanistan.

For details refer to Annex II (Monitoring Matrix) There is an urgent and fundamental need to ensure that the Afghan public, private sectors are able to work in tandem with the work undertaken by the international standard bodies. The council shall broadly address the issues affecting the growth and development of the internet, including the setting common sets of standards / policies. The establishment of National ICT council is to build the required national technical and professional skills for the government, and to ensure wider access to information for all stakeholders of ICT in Afghanistan.

Source	Number of Seats	Membership Status
Ministry of Communications & IT	2	Permanent
Ministry of Education	1	Permanent
Ministry of Higher Education	1	Permanent
Ministry of Finance	1	Permanent
Ministry of Economics	1	Permanent
Ministry of Commerce & Industries	1	Permanent
Ministry of Interior	1	Permanent
Ministry of Foreign Affairs	1	Permanent
Ministry of Culture & Information	1	Permanent
3 Rotational Exclusively for Ministries that are not permanent members	3	Rotational
AISA	1	Permanent
ISP Association	1	Permanent
GSM/Telephone Operator Association	1	Permanent
Association of Private Media Organizations	1	Permanent
Association of ICT Vendors	1	Permanent
Honorary members		
ICT Expert Honorary Member	1	Rotational
Consumer Advocate	1	Rotational
<b>Total number of members</b>	<b>22</b>	

Below is the proposed organizational structure of ICT council:

- Chairman (1st vice president)
- Secretariat (provided by MCIT)
- Members

- Permanent Members
- Rotational Members
- Honorary Members



#### Secretariat Terms of Reference

The following are some of the activities that will be carried out by the secretariat and they are subject to changes as deemed appropriate.

- To keep good track of day to day activities;
- To keep continuous track of the major ICT initiatives
- Promote inter-Ministerial coordination of major ICT initiatives;
- Responsible for drafting meetings minutes of the meetings and making it available to all members;
- Organizing and arrangement of the meetings;
- Presenting status report of the activities carried out by Council;
- Coordinating matters among the members and the board of ICT Council;
- Responsible for archiving all documentations in regard to Council (bylaws of the Council, standards, petitions etc)

- Primary liaison to the National Project Support Office (NaPSO) in the office of the Senior Economic Advisor to the President (SEAP).

#### APPENDIX I:

#### SECTOR INVESTMENT PROGRAM

Between early 2003 and the end of 2007, around US\$800 million has been invested into the ICT infrastructure of Afghanistan. Most of this amount is private investment related to the construction of the mobile networks, which now includes over 2000 base stations (transmission towers) all over the country. Based on the goal of providing access to 80% of the population by 2010, it is estimated that an additional US\$650 million will be spent to further extend these networks (note also that this projection is based on the fact that the fourth nationwide mobile licensee, Etisalat, has only just begun to deploy its network).

In addition, Afghan Telecom which is fully owned by MCIT, has also begun several significant infrastructure projects. The national fiber optic ring commenced construction in early 2007 and is expected to be complete by the end of 2008.

The project will cost over US\$65 million, paid entirely from the treasury of Afghanistan. Afghan Telecom has also launched a copper-wire based expansion to deploy 300,000 new subscriber lines in the six major urban areas. This project will cost around US\$40 million, also funded entirely by the Afghan treasury.

Consequently, the total projected investment program for the ICT sector is approximately US\$755 million until 2010.

## APPENDIX II: ACHIEVEMENTS (2002-2007)

Reform and development activity at the MCIT has been brisk. Among the accomplishments MCIT has made since 2002 are the following:

- Creating an enabling environment in which telephony penetration has risen from 0.06% to app 12 % in over last 3 years, which represents faster growth in comparison to the neighboring countries.
- Adopting and Publishing the Telecom Law (December 2005)
- Finalizing and Publishing the Telecom and ICT Policy
- Establishing of Afghan Telecom as a state owned enterprise (2005).
- Issuing the first national unified services license to Afghan Telecom (2006).
- Creating Afghanistan Telecommunication Regulatory Authority (ATRA).
- Issuing 4 GSM licenses
- Issuing 15 national and local Internet Service Provider( ISP) licenses
- Rehabilitating the Telecommunication Training Centre and upgrading it to the Information Communication Technology

### Instituted ( ICTI)

- Renaming the Ministry of Communications ( MoC) to Ministry of Communication and Information Technology ( MCIT)
- Establishing ICT Directorate in MCIT
- Regaining the Recognition of the +93 country code by major international and regional carriers
- Establishing 12 ICT centers n Kabul and provinces
- Recovering the Afghanistan's .af domain name

Establishing MCIT web site ([www.mcit.gov.af](http://www.mcit.gov.af))  
Expanding District Communications Network (DCN) in more than 170 Districts.

Expanding of Government Communications Network( GCN) in all provincial capitals as well as 42 ministries and other major governmental organization

Implementing 150,000 landline copper cable network

Expanding District Communications Network (DCN) in more than 220 Districts.

Expanding of Government Communications Network( GCN) in all provincial capitals as well as 42 ministries and other major governmental organization

Implementing 150,000 landline copper cable network

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ICT Policy Paper – World Bank (May 2003)

ICT Strategy – MCIT (July 2003)

Telecom Technical Annex – World Bank (January 2004)

MCIT 5-Year Plan – MCIT (February 2006)

ICT Assessment Report – GIPI (December 2007)

# ANNEX I: ICT SECTOR STRATEGY ACTION PLAN

PILLAR : INFRASTRUCTURE				
SECTOR : INFORMATION & COMMUNICATION TECHNOLOGY				
Expected Outcomes	Policy Actions or Activities	Category	Time frame	Responsible Agencies
E-Afghanistan created	Internet Exchange point	Development	1387-1389 (2008-2010)	MoCIT
	ICT Village	Development	1387-1389 (2008-2010)	MoCIT
	E-Government	Development	1387-1392 (2008-2013)	MoCIT
	National Internet Registry of Afghanistan (NIRA)	Development	1387-1390 (2008-2011)	MoCIT
	Afghanistan Cyber Emergency Response Team (AfCERT)	Development	1387-1390 (2008-2011)	MoCIT
	National Identity Management Initiative (NIMI)	Development	1387-1392 (2008-2013)	MoCIT
Enabling Environment	Development of policies, laws, regulations procedures and other normative acts to accelerate the role of telecom services to citizens	Legislation	1387-1389 (2008-2010)	MoCIT
	Establish Telecom Development Fund (TDF)	Legislation	1387-1392 (2008-2013)	MoCIT
	Drafting the ICT Law	Legislation	1387-1388 (2008-2009)	MoCIT
	Develop CIO (Chief Information Officer) culture in government organizations	Institution Building	1387-1388 (2008-2009)	MoCIT
	Movement of the government institution to a modern level of services to the citizens	Institution Building	1387-1392 (2008-2013)	MoCIT
	Developing Curriculum and Regulatory Framework for ICT Training Centers in the Private Sector	Institution Building	1387-1390 (2008-2011)	MoCIT
Institutional Reforms	Develop rules and regulations to require all government institutions to publish documents on their official websites (as a supplement to the Official Gazette)	Institution Building	1387-1389 (2008-2010)	MoCIT
	Adopt a full set of Rules and Procedures that will govern the competitive procurement and utilization of ICT by all government institutions	Institution Building	1387-1389 (2008-2010)	MoCIT
	Reduce corruption by reviewing all government services and making recommendations for the adoption of ICT to streamline and automate (for example, customs processing, procurement and licensing	Institution Building	1388-1390 (2009-2011)	MoCIT

PILLAR : INFRASTRUCTURE				
SECTOR : INFORMATION & COMMUNICATION TECHNOLOGY				
Expected Outcomes	Policy Actions or Activities	Category	Time frame	Responsible Agencies
	Pilot home based ICT related work for women	Development/ Gender Cross Cutting Issues	1387-1388 (2008-2009)	MoCIT
ICT Literacy improved	Establishment of ICT centers in 34 Provincial capitals	Development	1387-1390 (2008-2011)	MoCIT
Improved ICT coverage and Infrastructure	Optical fiber backbone	Development	1387-1388 (2008-2009)	MoCIT
	Government online (web presence)	Development	1387-1392 (2008-2013)	MoCIT
	E-government Resource Centre	Development	1387-1392 (2008-2013)	MoCIT
	Copper Cable Network	Development	1387-1392 (2008-2013)	MoCIT
	Expansion of District Communication Network (DCN)	Development	1387-1392 (2008-2013)	MoCIT
	Expansion of Microwave System	Development	1387-1392 (2008-2013)	MoCIT
	Village Communications Network (VCN)	Development	1387-1392 (2008-2013)	MoCIT
	Modernization of Postal Services	Development	1387-1392 (2008-2013)	MoCIT
	National Data Centre (The electronic data of the government will be securely hosted and will be available to all entities upon request and level of access)	Development	1387-1392 (2008-2013)	MoCIT
	The National Data Centre will have information on crosscutting issues like anti-corruption, counter narcotics, and environment.	Development/ Cross Cutting Issues	1387-1392 (2008-2013)	MoCIT

## ANNEX II: ICT SECTOR STRATEGY MONITORING MATRIX

PILLAR: INFRASTRUCTURE			
SECTOR: INFORMATION AND COMMUNICATION TECHNOLOGY			
Expected Outcomes	Indicators	Baseline	Targets
E-Afghanistan created	Index on the progress of creation of E-Afghanistan	E-Government policies, strategies and pilot projects are already launched.	E-Afghanistan created by 2013
	# of government offices having official web presence	15	All Government Offices (2013)
	# of provincial government offices having official web presence	3	All Prov. Government Offices (2013)
	# of government offices having Chief Information Officer (CIO)	0	All Government Offices (2013)

PILLAR: INFRASTRUCTURE			
SECTOR: INFORMATION AND COMMUNICATION TECHNOLOGY			
Expected Outcomes	Indicators	Baseline	Targets
Enabling Environment	# of government offices connected through the fiber optic	20	All Government Offices (2013)
	Index on the progress of putting legal enabling environment for the ICT Sector in place.	At present telecom law, An independent regulator ATRA and open telecom market is the guarantor of the enabling environment.	Enabling Environment by 2013
ICT Literacy improved	Index on the progress of building institutions for the ICT Sector.	Ministry of Communications and IT and National ICT Council are the existing.	ICT Sector institutions will be built (2013)
	Index on the progress of establishment of ICT centers in 34 Provincial capitals	15	Improved ICT Literacy, 34 provinces 2013
Improved ICT coverage and Infrastructure	Index on the progress of putting in place improved infrastructure for the ICT Sector.	GCN, DCN, VCN, CCN, OFC and NDC projects are brought, implemented at present.	By end-2010, a national telecommunications network to be put in place so that more than 80% of Afghans will have access to affordable telecommunications.
	% of Afghans having access to affordable telecommunications	70%	80% (2010)
	% increase in annual revenue generated from the ICT Sector	USD 75 million	More than US\$ 100 million dollars per year are generated in public revenues by end 2010
	% of population access to mobile phones	20%	Increased Access to mobile phones
	number of internet users	500,000	Increased Access to internet
	# of Post Offices connected to a well-functioning communication network and equipped	44	Increased number of post offices connected

### ANNEX III: LIST OF PROGRAMS AND PROJECTS

S/N	AFG Budget Ref	Programs / Project title	Project Duration Start   End	Breakdown of Requirements (US\$ Millions)				Total Requirement (US\$ Million)	Total Funding (US\$ Million)	Gap (US\$ Million)	Major Donors	Core External	Responsible Agency
				1387	1388	1389	1390	1391	1392+				
1	AFG/0309701	National Fixed Line Network (digital lines) in Kabul,Jalal Abad,Kandahar,Mazar ,Takhar,Farah,Khost,Ghazni,Baghlan including Puli Khumri & Kunduz provinces	1383	15.000	30.00	29.00							
2	AFG/0310301	Phase I National Fiber Optic Network (519 Km, Kabul Kandahar)	1383	29.500						29.500	0.000	AFG	Core
3	AFG/0806101	Microwave Network	1387	2.000						2.000	0.000	2.000	Core
4	AFG/0806201	Expansion of Internet Network	1387	2.000						2.000	0.000	2.000	Core
5	AFG/0311001	District Communication Network	1387	1.00	0.00	0.00				1.000	1.000	0.000	USAID
6	AFG/0780601	Satellite remote sensing data	1386	0.07	0.00	0.00				0.070	0.070	0.000	IND
		Total:		49.57	30.00	29.00				108.570	45.570	63.000	

## ANNEX IV: LIST OF PROVINCIAL PRIORITY PROJECTS

No.	Project Name	Project Location	Responsible agency	Project Duration (year)	
				Start	End
1	Construction of Communication Directorate in Shibar & Waras district.	Bamyan	MoCIT	1388	
2	Construction of radio station with building in Nilli. One station (25 rooms).	Daikundi	MoCIT	1388	
3	Activate the internet system in Kunar Province Beneficiaries. All Province.	Kunar	MoCIT	1388	
4	Construction of a centre for Information & Technology in Gardez City. (5,000 beneficiaries).	Paktia	MoCIT	1388	



# **Urban Development Sector Strategy**

**1387 - 1391 (2007/08 - 2012/13)**

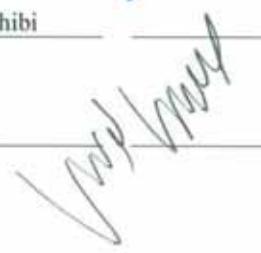
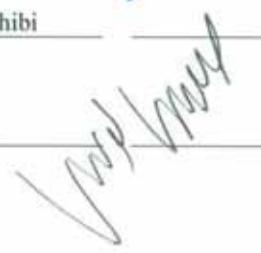


**Pillar III - Economic &  
Social Development**



# Urban Development Sector Strategy

Approved by:  
Sector Responsible Authorities

Ministry/Agency	Director/Name of Minister	Signature
Ministry of Urban Development	HE Eng. Mohammad Yousaf Pashtun	 05/01/87
Kabul Municipality	HE Eng. Mir Abdul Ahad Sahibi	
Independent Directorate of Local Governance	HE Jelani Popal	

# Glossaries

<b>Slums</b>	UN-HABITAT defines slum as “a contiguous settlement where the inhabitants are characterized as having inadequate housing and basic services. The UN Secretary General defines slums as “...miserable living conditions. Slums lack basic municipal services, such as water, sanitation, waste collection and storm drainage. Slum dwellers live and work in conditions of pervasive insecurity – exposed to disease, crime and environmental hazards”; UN Secretary-General report “We, the Peoples” (A/54/2000 Para 135), 2000.
<b>Informal Settlement</b>	UN-HABITAT definition of informal settlements are; i) residential areas where a group of housing units has been constructed on land to which the occupants have no legal claim, or which they occupy illegally; ii) unplanned settlements and areas where housing is not in compliance with current planning and building regulations (unauthorized housing)
<b>Shura</b>	A traditional or local council



# EXECUTIVE SUMMARY

The urban sector is of prime importance for overall development of Afghanistan. Effective management of the rapid urbanization process and the resulting urban areas can facilitate economic growth and lead to gains in social welfare, including poverty reduction.

Important issues facing the urban sector are: rapid urbanization; accommodating large numbers of returnees and internally displaced families; urban poverty and rapid growth of urban slums; insufficient employment opportunities; lack of urban infrastructure and community services; deteriorating urban environments; a proliferation of land disputes and illegal seizures of public property since 2001; and the special needs of vulnerable groups, particularly youth, women, disabled, single-parent households, and the homeless.

The main constraints in addressing these issues are: a low priority given urban sector by donors and government; persistent insecurity and instability; lack of a coherent urban policy; weak and/or outdated systems of urban planning, management, municipal finance; negligible private-sector investments in services or infrastructure; the slow pace of institutional reform and patchy coordination of ongoing externally-funded urban initiatives; inadequate urban sector information on which to base decision-making; and limited capacity and coordination among and within urban institutions.

The goal of the urban sector is "To ensure increased access to improved services and

affordable shelter while promoting sustainable economic development as part of efforts to reduce urban poverty".

Key strategies to achieve this goal are to: raise the sector profile in the National Development Agenda; ensure increased and equitable investments in all urban centers, from domestic and external resources, according to need; attract private investment and increase employment opportunities; improve urban governance, planning and management at all levels, through legal and institutional reforms; adopt a sector-wide multi-year program approach and develop an urban monitoring and evaluation system as a basis for improvement in program design.

The principle desired outcome is stated in the Afghanistan Compact as the Urban Development Benchmark: "By end of 2010..., Municipal Governments will have strengthened capacity to manage urban development and to ensure that municipal services are delivered effectively, efficiently and transparently ...[and] ...ensure that 50% of households (h/h) in Kabul and 30% of households (h/h) in other major urban areas will have access to piped water". However, this urban sector strategy includes other desired outcomes by 2013 (the time line for the 5-year ANDS plan) as follows: (i) a "National Urban Policy" guide the sector; (ii) all municipalities have sufficient budgets to meet their immediate urban development needs; (iii) 25 major cities have city development plans; (iv) in Kabul, 30% of households benefit from improved sanitation, drainage, and municipal solid waste collection; (v)

in all urban areas except Kabul, 30% of households benefit from improved sanitation drainage, and municipal solid waste collection; (vi) in informal settlements, at least 30% of households benefit from improved tenure security, regularization, and upgraded basic urban services; (vii) at least 50% of urban households enjoy secure land tenure; (viii) there is a 50% increase in affordable urban land and shelter and a 30% increase in supply of serviced land; (ix) the percentage of urban residents living on less than USD 2 per day is reduced by 50%; (x) existing aquifers and water sheds are identified and protected in all urban areas; (xi) the cultural and historic significance of some urban neighbourhoods is taken into account in development plans, and adequate safeguards enforced; (xii) transport management and infrastructure is significantly improved; and (xiii) there is public participation in the planning process & close coordination of public and municipalities. For details regarding outcomes refer to Annex I (Action Plan).

Crosscutting outcomes include: (i) women comprise at least 25% of professionals engaged in surveying and data analysis, designing and implementing urban development plans, and providing urban services; (ii) at least 50% of urban planners are sensitized to gender issues.

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The Urban Sector Key Programs are organized under three broad themes: (i) Urban governance, finance and management; (ii) Land development and housing; and (iii) Urban infrastructure and services. Programs under Theme 1, Urban Governance, Finance and Management, include: policy and legislation development; urban and regional planning; urban development control; institutional development and capacity building; revenue enhancement and improved financial management; urban indicators development, urban data collection & analysis.

Programs under Theme 2, Land Development and Housing, include: new area development; comprehensive area development; secondary roads, drains, and green areas, improved public open spaces, pavements, city centre upgrading; housing development; housing finance; and housing subsidy. Programs under Theme 3, Urban Infrastructure and Services, include: urban infrastructure and services; transport and urban mobility improvement; water supply and environmental sanitation improvement; city electrification; informal settlement upgrading; development of green areas, open spaces and recreation facilities; rehabilitation and safeguarding historic cultural and heritage sites.



# INTRODUCTION

## THE URBAN SECTOR WITHIN THE ANDS

The ANDS framework includes the urban sector as a sub sector under 'Infrastructure and Natural Resources', one of 6 sectors under the third pillar, Economic and Social Development. Nevertheless, the urban sector is directly linked with the other sub-sectors, particularly power and water, national roads, transport, and mining and natural resources. Moreover, it interfaces or has obvious links with the all sectors under Pillar 3, particularly Economic Governance & Private Sector Development, Social Protection, Health, Education, and Agriculture & Rural Development, as well as the other two pillars of Governance and Security.

The preparation of this strategy followed a dual national-level and city-level approach. At the national-level, a working group – led by the Ministry of Urban Development and comprised of central government officials, and consultants and representatives from various international donor and implementing agencies – held numerous meetings to discuss and agree on the content of the strategy. At the city level, in each of seven large cities, a broad representation of stakeholders participated in a three-month strategic action planning process, facilitated by UN-HABITAT and MUD, to prepare City Action Plans that specified initiatives to address their priority needs.

The Provincial Development Programs (PDPs) were also reviewed to address the urban priorities expressed during provincial consultations. In addition, Kabul Municipality analyzed their own needs and priorities and proposed actions to meet

them. The results of all these efforts have been synthesized and integrated in this urban sector strategy document.

### IMPORTANCE OF THE URBAN SECTOR

The urban sector is of prime importance for *overall development of Afghanistan*. Effective management of the rapid urbanization process and the resulting urban areas can drive *economic growth* and gains *in social welfare*, including *poverty reduction*, will make a significant contribution to social development.

Urban centres are engines of economic growth in most countries. They contribute to economic growth through their high productivity as a result of The Urban Sector within the ANDS economies of scale and agglomeration, and by providing opportunities for the accumulation of capital, investment, trade and production. Urban investments create employment opportunities and urban jobs that account for a disproportionate share of GDP. Urban growth can stimulate rural development through increase demand for food, markets for rural products, off-season employment for farmers, and remittances. Finally, urban areas help connect the population to the region and the rest of the world, facilitating the movement of goods, services, people, and information.

In terms of gains in social welfare, cities have a high potential for reducing poverty. They provide diverse job opportunities, good education and health care opportunities, opportunities

for social and political participation, and for cultural interaction and enrichment. In addition, urbanization has a positive impact on the well-being of women. Strong backward linkages with rural areas and increased demand for agricultural products also contribute to rural income generation and poverty reduction. On the other hand, the rapid and uncontrolled growth of cities has the potential to cause long-term environmental damage. Cities have a large ecological footprint, creating environmental problems that can extend well beyond their borders. The growth of cities is often linked to increased violence, crime and insecurity.

#### Achievements:

- While investments in the urban sector continue to lag far behind actual needs across the country, there have been some gains, as follows: Water supply and sanitation: 2 million urban residents (31% of the urban population) have benefited from investments in water supply between 2002 and 2007 in major cities (while 12% have benefited from improvements in sanitation).
- Public works: up to 1.4 million (20%) of urban population have benefited from rehabilitation projects, and 250,000 (4%) has benefited from upgrading programs
- Land tenure security: In addition to legislative reforms, a pilot land tenure security project is underway in Kabul
- New city development: Dehsabz City Development Authority has been established to facilitate the development of a new city that will house up to 3 million people north of Kabul and up to 1 million people in new small settlements (satellite townships) among other initiatives.
- Regional and city planning: strategic development plans are being prepared for 7

regional cities, while a city development plan for three major cities (Mazar, Jalalabad, Kabul) and existing-Kabul plan is due for completion by mid 2008.

- Urban policy: A comprehensive National Urban Program (NUP) will be established; a National Land Policy was submitted in 2007 for approval to the Ministry of Justice; and national building codes have been developed.
- Urban management: Institutional reforms
- within MoUD, KM & IDLG (established in 2007) continue, along with investments in strengthening institutional capacity.
- Housing: up to 5% of vulnerable families have been provided improved shelter in major cities. The private sector so far has made little contribution to the development of housing sector.
- Conservation: 3 conservation initiatives are under way in historic quarters of Kabul, Heart and Tashqurghan.
- Corporatization of services: Afghan Urban Water Supply and Sanitation corporate has been established

#### Challenges and Constraints:

- Low coverage of basic services and inadequate public resources to meet growing needs
- A rapid pace of urbanization partly due to returning refugees and rural-urban migrants, leading to high population density
- Widespread urban poverty and limited access to productive employment
- A high proportion of informal settlements and associated problems

- Lack of capacity and coordination among urban sector institutions
- Limited scale of private sector investment in urban enterprises, facilities or services
- Lack of accurate data on which to base critical policy decisions
- Land security and titling: Absence of proper land registration system, Land grabbing, inadequate legal instruments and institutions

**The strategy will contribute to reduction in poverty through:**

- measures to meet specific needs of vulnerable groups, including refugees & IDPs,
- Labor-intensive upgrading initiatives aimed at both improving living conditions and generating employment among the urban poor.
- better urban planning to improve access to education and health facilities.

**The strategy will contribute to economic growth through:**

- Development of coherent policies leading to legislation and actions that will encourage private investment in urban housing and services.
- Facilitation of investments in key infrastructure that will encourage productive enterprises and trade that will generate employment for the urban population.
- Regularization of informal settlement will increase tax revenue

**Provincial and City Development Plans**

- The Urban Sector Strategy incorporates feedback, proposed projects and comments from the Sub National Consultations (SNCs) and is a response to the people's needs and development goals.
  - Key urban infrastructure needs emerged from CDPs and PDPs-related consultations have been integrated into the strategy, reflecting the range of sub-national development needs (for details refer to annex IV).
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# CHAPTER 1

This part is divided into six sections: (i) issues; (ii) constraints; (iii) institutional, regulatory and management set-up of the urban sector / capacity assessment; (iv) current legislative framework; (v) private, public, and donor investments in urban sector - past three years; and (vi) role of private sector and foreign investors in urban development.

## KEY ISSUES

The following are key issues to be addressed by the urban sector strategy:

**Rapid urbanization of Afghanistan's population.** In 2005, the total population and urban population was estimated at 29.86 million and 7.25 million<sup>1</sup> respectively; suggesting that nearly a quarter of Afghanistan's population now live in urban areas. By 2015, with the overall population growth rate now estimated at about 3.90, and the urban rate at 4.97 but falling to 4.89, it is projected that the total population will be 41.4 million and the urban population will be 12.62 million, or 30.5%. Of the 11.5 million projected increase in population between now and the year 2015, about 5.4 million, or almost half is expected to be in urban areas.

**Accommodating displaced populations.** Related to the above, urban areas – particularly Kabul – have been and will continue to be a destination for a high proportion of returning refugees, IDPs, and deportees<sup>2</sup>. UNCHR reports that the government

<sup>1</sup> There is no agreed figure for urban population. Estimates vary between 4.6 million and 7.25 million, depending on the method used. See for example Mapping global urban and rural population distributions: estimates of future global population distribution to 2015; FAO (2005).

<sup>2</sup> Afghan Refugees: Maintain Assistance As Returns Con-

has received 344,000 applications (representing over two million people) for

'free' land under the Land Distribution Scheme (Presidential Decree 104)<sup>3</sup>. Demand for affordable land and shelter has increased with the deportation of some 85,000 Afghans from Iran, and future deportations are possible. These groups are likely to settle in urban areas because many lived in urban conditions in exile and most perceive urban areas as offering a higher level of security, better services and more income generating opportunities. Moreover, urban areas may increase due to environmentally displaced persons affected by natural disasters such as droughts and floods in rural areas.

The MOA has identified some 300,000 plots in about 55 sites in 29 provinces as suitable for distribution. However, of the 100,000 applicant families selected, only 23,000 plots have in fact been distributed to date. Temporary land titles have been issued to about 17,000 families, but only about 5,500 have in fact settled because of the location or lack of services, according to MORR. Of those who have settled, a large number are reportedly not satisfied with on-site conditions and some have abandoned their plots.

By decree, the sites of new townships can only be on uncultivated government land at high altitude. The already identified and potential sites for townships are therefore located at some distance from existing urban centres. The quality of land in and around the proposed townships is

tinue into 2005; <http://www.interaction.org/newswire/detail.php?id=3064>

<sup>3</sup> *Land Distribution to Landless Refugee and IDP Returnees – FAQ, UNCHR, April 2007*

unlikely to support household food production, let alone market-oriented agriculture. The main hope of finding employment for residents of these townships rests on industrial estates, mining, and long and expensive commutes to existing urban centers.

**Urbanisation of Poverty.** Around 25% of the national population lives in urban areas and, with urban population expected to grow at twice the national average, the urban population share is estimated to double by 2015<sup>4</sup>. Urban poverty is growing with economic vulnerability exacerbated by the low pay and highly erratic nature of some urban employment. It will be important to fully understand the differences between urban and rural poverty in order to design an effective poverty reduction program for urban areas. For example, in contrast to rural areas, there is an almost total dependence on cash incomes for basic needs and services in urban areas. For those with insecure incomes, this often leads to indebtedness, inadequate nutrition and children having to work or beg. For many poor households a typical meal consists of only bread and tea. The daily expenditure for food for 62 % families is between \$1-\$2 per day and for 36% families is less than \$1/day. Clearly, living in urban areas is expensive. For example: 60 % of urban households must spend over 25% of household income on rent<sup>5</sup> and many urban residents are unable to obtain steady incomes or access credit. Employment opportunities derived from informal sector tend to be unstable.

In urban areas, it should be possible to take advantage of greater economies of scale for public service provision. However, the reality is that access to public services such as education and health is limited by insufficient public service provision, social exclusion or limited affordability. Years of neglect, disinvestment and conflict led to a deterioration in urban infrastructures and services. In addition, urban public services have failed to

<sup>4</sup> Afghanistan Poverty, Vulnerability and Social Protection: An Initial Assessment, World Bank March, 2005.

<sup>5</sup> ACF Afghanistan Kabul Vulnerability Mapping

adequately respond to the rapidly expanding populations. Urban centres will continue to be a magnet for returnees and expand with rural – urban migration. The majority of these people are landless and settle in informal settlements, live with relatives or in rented accommodation in poorly serviced informal areas.

The population in-flows to urban areas will require improved delivery systems for water, transport, health, education, sanitation and waste removal. The high population density of urban areas with inadequate safe sanitation and over crowding (with as many of 6 people sharing a room in informal areas) leads to unhygienic living conditions and poor health. The diarrhoea and disease caused by unsanitary urban environments, air borne pathogens and indoor air pollution (from use of traditional heating appliances and one-room living that affects over 80 % of vulnerable households) contributes to Afghanistan's high under-five infant mortality rates. Many also are negatively impacted by other factors that are more pronounced in urban areas, such as drug addiction and depression, personal insecurity, the lack of social support and social networking and social-economic exclusion. All these factors contribute to deepening poverty, particularly for vulnerable groups such as female headed households, youths, disabled and displaced people and returnees. Poor health, food and income insecurity, exclusion from adequate basic infrastructure and urban public services, and poor attendance or poor schools will contribute to prolonged household poverty. Persistent or growing slums and urban poverty will act as dis-incentives for investment inflows and economic growth in urban areas.

Without accurate baseline data, it is difficult to accurately assess the actual extent of urban poverty. It is widely acknowledged, however, that a significant proportion of urban households are excluded from the most basic services and are forced to live from day-to-day on meagre and unreliable income flows, often in health-threatening environments (AREU 2006). Informal

employment is the main livelihood source for the great majority of Afghanistan's urban population. While it provides poor households with an immediate source of income, families end up being more vulnerable with irregular, low-paying jobs that force them to deploy women and children – at times to undertake exploitative and hazardous work – for additional income. Household structure and composition are key determinants of income levels, with households able to mobilize male labor more likely to be better off. There is a critical link between urban vulnerability and health, particularly that of male breadwinners. Insecurity of employment leads to income irregularity, making it hard for the poor to accumulate savings, and reliant on borrowing. A great majority of poor households surveyed by AREU in 2006 in four cities were in constant debt. The same study indicates a median monthly per capita income of families in Kabul with no access to male labor of 111 Afghanis, or only \$2.

The MDG indicator database indicates that 20% of the urban population was living below the poverty line in 2002. The NRVA (2005) found that 28% of urban households perceive themselves to be food insecure, 31% fell below minimum level of dietary energy consumption, 45% borrowed money to purchase food, and 48% sometimes had problems satisfying their food needs. Available data suggests significant differences between urban areas in Afghanistan, with the percentage of urban populations with low dietary diversity or very poor food consumption ranged from 7% in Kunduz to over 30% in Takhar. Almost 68% and 90% of Kabul's population, respectively, is reported to be living on less than one and two dollars a day<sup>6</sup>. Recent studies have found that, in general, urban poverty has frequently been under-estimated<sup>7</sup> because; higher income groups in urban areas increase average incomes; proximity to services is assumed to equate to access; concentrating people without adequate

6 National Risk and Vulnerability Assessment (NRVA), World Bank, 2003

7 Interim Report of the Task Force 8 on Improving the Lives of Slum Dwellers; Millennium Project; February 2004

services undermines health and increases the risks of accidents. Unless urban life can be improved, poverty will persist as the poor move in and the wealthier migrate abroad.<sup>8</sup> The fact that planned and unplanned areas (or informal settlements) appear to have similar rates of poverty<sup>9</sup> is an issue that needs to be taken into account in program responses.

**Needs of special groups.** The needs of youth, women, the disabled, and single-parent households need special attention. **Youth** (15 to 24 year olds) comprise more than 68% of the total population – a proportion that is significantly higher than in rural areas<sup>10</sup> - and face particular hazards, especially girls, such as sexual and labour exploitation, criminal and anti-social behaviour, and drug addiction. They also have particular needs for education and job opportunities that, if unmet, could lead to alienation and violence. **Urban women**, including female-headed households, also have special needs given their relative lack of access<sup>11</sup> to employment and education<sup>12</sup>. On the positive side, women are often more active participants in participatory processes<sup>13</sup>, contribute to the economy through home-based work, and tend to give priority to family and housing needs and long-term goals over self and immediate gratification. **Disabled** (households and persons) deserve particular attention because there are about 2 million disabled in Afghanistan<sup>14</sup>; with many disabled-

8 2005; <http://www.interaction.org/newswire/detail.php?id=3064>. Negar Ghobadi, Johannes Koettl & Renos Vakis (University of California, Berkeley & World Bank)

9 National Risk and Vulnerability Assessment (NRVA), World Bank, 2003

10 Youth in crisis: Coming of age in the 21st century; IRIN; 25 August 2007; <http://www.irinnews.org/InDepthMain.aspx?InDepthId=28&ReportId=69983>

11 Unpublished UN-HABITAT census of households in project areas in Kabul District 6 and 7 found on average 104 adult females for every 100 males, and in some CDCs up to 117 adult females.

12 National Reconstruction and Poverty Reduction - the Role of Women in Afghanistan's Future; World Bank, March 2005.

13 Interim Report of the Task Force 8 on Improving the Lives of Slum Dwellers; Millennium Project; February 2004

14 The new Afghanistan after years of war; [http://the-rumi.blogspot.com/2006/11/two-millions-disabled-found-in\\_29.html](http://the-rumi.blogspot.com/2006/11/two-millions-disabled-found-in_29.html)

headed households in urban areas<sup>15</sup>. Single-parent households, in Kabul, are common; 12% of children lack a father and 9% lack a mother.

**Size, percentage, and growth of the slums<sup>16</sup> or informal settlements.** The MDG indicators database estimates that 4.95 million people inhabited informal settlements in 2006, up from 2.58 million people in 1991. In Kabul, about 68% of houses are in informal settlements, with 49% on flat land and 19% on slopes<sup>17</sup>. With an estimated urban population of 7.5 million people, or 1.25 million families and with some 80 percent of families estimated to inhabit informal settlements, up to about 1 million properties may require regularization. At present, there is currently no legal provision for undertaking this process on any significant scale. One of the main objectives of the proposed Land Policy will be to provide the legal basis for addressing this issue.

**Urban infrastructure and community service deficits.** Most urban areas in Afghanistan suffer from infrastructure and service deficits, due largely to under-investment and damage caused by conflict. These deficits are evident in the state and extent of physical infrastructure (water, sanitation, roads, drains, electricity) and facilities such as schools, clinics, community facilities and open spaces for recreation. While there are significant differences between cities, and between districts within cities, the overall picture is of significant numbers living in abject conditions. The following provides a general overview of the situation for various types of infrastructure/services:

15 UN-HABITAT (2006) survey of Kabul district 6 and 7 found that disabled-headed households comprised 1.2% of all households,

16 UN-HABITAT defines slum as “a contiguous settlement where the inhabitants are characterized as having inadequate housing and basic services. The UN Secretary General defines slums as “...miserable living conditions. Slums lack basic municipal services, such as water, sanitation, waste collection and storm drainage. Slum dwellers live and work in conditions of pervasive insecurity – exposed to disease, crime and environmental hazards”; UN Secretary-General report “We, the Peoples” (A/54/2000 Para 135), 2000.

17 Research on housing situation in Kabul city, August 2007, MUD

- **Housing.** About 51% of all urban houses are in good condition . In Kabul, 32% are in formal settlements while 69% of houses are in informal settlements. The percentage of houses (i) in poor physical condition and (ii) with leaking or unfinished roofs is, in formal settlements, 24% and 33%, and in informal settlements, 7% and 15%. NRVA 2005 found that most (63%) urban households occupy single private housing, 22% share a house with others, and the remainder occupy private (4%) or shared (1%) apartments, temporary shelters (7%), or others (2%). Houses in Kabul are over-crowded; the ratio of families to houses is 1.68, and about 42% of houses are shared by more than one family, while 18% are shared by more than three . More households live in a single private house in informal settlements (57%) than in informal settlements (49%) , suggesting an opportunity for increasing the density of informal settlements. About 7% of urban households live in temporary structures. In Kabul, however, this figure reaches about 11.5%, with about 0.18% in relief tents, 1.68% in ‘bad’ temporary housing, and 9.7 % live in ‘good temporary’ housing . About 71% of urban households consider that they “own” their home, either through inheritance (36%, purchase (32%), or purchase with mortgage (3%), although about 11% report that they have incurred housing-related debt for land, house purchase or improvements. A large percentage (21%) are tenants, paying about AFG 2,922 per month, while a few admit to squatting (3%). A majority (61%) of households claiming ownership have deeds registered in court. While 14% of households do not have a deed, 21% say they can prove ownership through local records or by other means. There is no formal housing finance mechanism in place, either from the government or from the private sector. The Mortgage Law that is under consideration is expected to encourage government and private institutions to offer housing finance. But this will cater to the

needs of mostly formal housing. Micro-finance schemes for providing housing loans to the informal settlements or low-income populations have yet to be developed.

- **Urban food production.** It is estimated that about 29% of urban households have garden plots, the average size of which is about one hectare, on which they grow food crops for home consumption or sale if there is a surplus. About 10% of urban households own livestock or poultry, and in some urban areas like Kunduz this figure is 44%.
- **Water** – The urban water supply situation in Afghanistan is among the worst in the world. Scarce water resources are often overused or contaminated, often resulting in water-born diseases. But data on the sector is scarce and sometimes conflicting. For example, according to NRVA 2005, about 64% of urban households have access to safe drinking water , although the percentage varies significantly between urban areas, with Kandahar (99%) and Kabul households (71%) having good access and Kunduz (15%) having poor access. However, it is not certain how the access to 'safe' drinking water is defined in the NRVA, which may have resulted in unrealistically high coverage. At the same time, another source points out that Kunduz and Herat have primary and secondary networks that can easily supply the majority of the people – if only they would connect to the system . The percentage of urban residents that access water through: (i) shallow open wells, typically on individual plots, (ii) hand pumps, mostly community supplied, or (iii) piped municipal water systems is, respectively, about 34%, 39% and 10%. The 13 largest towns (above 50,000 persons) are slightly better served, with about 60,000 or 20% of households having a piped water supply; but poor O&M often results in lower service levels. Only 16% of urban households pay for drinking water. The amount paid averages

162 Afs per month, but varies from 563 Afs in Faryab to 33 Afs in Balkh. More than 30 cities do not have piped water supply systems. Recent studies have shown that urban poor often pay more for water. Households in Kabul's formal settlements are more likely to have municipal water than those in informal settlements. Important urban water supply issues also include: the general scarcity of water resources, the sustainability of ground sources, increasing contamination of water aquifers, unregulated drilling of wells, and the contamination of water caused by septic tanks. MUD, with the support of sector donors, has adopted a proactive Urban Water Policy that includes a phased reform program. Under this program, the Central Authority for Water Supply and Sewerage (CAWSS) has been corporatized. The new corporation will serve the larger cities, while MUD will address the water needs of smaller towns. This is seen as a key element in the strategy to improve the management of urban water supplies and service delivery. Municipalities that have corporatized water suppliers will be responsible for ensuring water supply, but the corporation will be the sole executive agency. Water feasibility studies have been completed for 27 (out of 140) cities/towns that account for 7.1 million, or 75 percent, of the projected 9.4 million urban population in 2014. These studies are not very detailed. Nevertheless, according to these studies, the costs of providing adequate water service to 100 percent of this population ranges from 15 to 267 USD per capita and averages USD 49 per capita. This suggests that a required investment cost in the water sector of USD 607 million. Three donors (ARTF, KFW, and USAID) have committed about USD 62 million to the sector – mainly for distribution systems rather than comprehensive water-resource management plans, production and distribution systems – leaving a balance of 545 million. An additional USD 182 million is required for solid waste, drainage and

sanitation , USD 54m for design, and USD 91 million for implementation, for a grand total of USD 973 million.

- **Sanitation** – Adequate sanitation and the safe disposal of human excreta is a basic urban environmental necessity. The percentage of urban households using: (i) traditional covered latrines and (ii) improved latrines, and (iii) flush toilets is about 67% and 20%, and 9%, respectively<sup>18</sup>. Only 4% defecate openly. In Kabul city, 14% use a flush latrine, 2% are covered by a sewerage system. Kabul's households in formal areas (23%) are more likely to have a flush latrine than those in informal areas (10%)<sup>19</sup>. In most cities, latrine emptying services have broken down or are inadequate, although some the sludge is collected by private sector operators. All cities lack waste water treatment facilities and adequate waste disposal sites. Open drains are not well connected and often leave pools of liquid waste. Partly as a result of this poor sanitation, diarrhea has become a major cause of infant and child mortality in urban areas<sup>20</sup>. Several international agencies have been piloting various low cost toilet technologies. So far, the response has been mixed and the results not well documented.
- **Solid waste** – Poor solid waste management is a well known environmental health hazard. Only about 50% (25% in Kabul) of solid waste is collected in urban areas. Only 20% of the Kabul's population is served by a state-provided solid waste collection service. Uncollected waste is visible in streets and ditches. Many areas lack dustbins. In general, there are insufficient collection vehicles, and inappropriate collection equipment for the

18 NRVA 2005

19 Ibid

20 Afghanistan: Contaminated water supplies likely cause of increased diarrhea, IRIN news, 15 August 2007; UNICEF and Afghan Ministry of Health combat disease by recruiting women to teach, UNICEF website [http://www.unicef.org/infobycountry/afghanistan\\_9068.html](http://www.unicef.org/infobycountry/afghanistan_9068.html)

narrow roads in informal settlements. There are no sanitary landfill sites, only dumpsites, and at least one dumpsite now threatens to pollute an aquifer. There are no sites for disposal of construction rubble and debris. Hospital wastes are not treated properly. Recycling, except by ISAF's, is not practiced. Wastes not collected or treated properly are both an eyesore and a significant health risk, acting as a breeding ground for diseases. Finally, uncollected wastes often block storm drains and result in flooding.

- **Roads** – About 61% of urban dwellers access homes through unpaved roads and about 25% through footpaths, including in Kabul<sup>21</sup>. In Kabul, a further 12% of households have access via a paved road. In Kabul again, the percentage of households in formal and informal settlements served by (i) unpaved road, (ii) footpath and (iii) paved road is, respectively for each, about 59% and 62%, 25% and 27%, and 15% and 11%, indicating that formal settlements have a slightly higher level of service. Additionally, access roads by four wheel vehicle are lacking in many informal settlements. Existing urban trunk road systems in general suffers from constraints on traffic flows that include road width variation, median separation strips, few openings, roundabouts, poor configuration, and missing links. A poor urban road system can increase travel time, discourage economic investment, and lead to traffic injuries and death.
- **Community and social facilities** – for education, health, community meetings, culture and entertainment, recreation, markets, and civil uses as well as open space, parks, and other green areas – are generally lacking in urban areas throughout the country.

21 Report on sub-national governance, World Bank

- **Urban transport sector** – Traffic congestion is increasing. Traffic movement and parking rules are unclear and erratically enforced at best. Public transport systems are deficient in terms of coverage, frequency, regularity, cost recovery and quality. Pedestrian and bicycling environments are inadequate – with poor quality pavements, few street crossing facilities, few traffic speed controls, and undisciplined drivers. The number of parking spaces appears to be inadequate. The underlying cause of these problems lies in inadequate urban transport sector planning and management. There is no urban transport policy despite links with poverty alleviation, environmental quality, energy consumption and land use. There are few if any sector studies. Transportation demand management, or mobility management, is not practiced.
- **Electricity** – About 66% of urban households have access to the public supply grid and a further 8% with access to any type of electrical power sometime during the year. Public grid access varies significantly between cities, with households in Balkh (92%), Kandahar (85%), and Nangarhar (81%) having good and Takhar (2%) having poor access<sup>22</sup>. The public supply grid service is said to be intermittent and unreliable. Domestic fees for public power are low, precluding energy conservation measures. Some 20% of households use portable generators, contributing to noise and air pollution. Hydroelectric plants provide half a Kabul's power, but face winter season cutbacks. Lacking electricity, 82% of vulnerable households suffer from indoor air pollution from traditional heating stoves.

**Land-related issues.** There are several land-related issues that remain unresolved. These issues, which are inter-related, include: (i) how to accommodate new urban growth – either through increasing

<sup>22</sup> NRVA (2005)

existing densities, peri-urban development, new satellite towns, or other strategies<sup>23</sup>; (ii) how to discourage new informal settlement formation; (iii) how to ensure most effective use of existing infrastructure before extending systems to new area, given that unused or under-developed plots are not uncommon in and near most cities; (iv) what minimum and maximum urban densities are acceptable – given that these largely determine the quantity of new land required; (v) identifying suitable land to accommodate urban growth; (vi) lack of a land adjudication system to resolve disputes arising from land grabbing, unrecorded transactions, customary and informal titles, incomplete property registers, (unauthorized) sale of government land below market prices; (vii) outdated and rigid master plans that have not guided actual development.

**Urban environments** are deteriorating in many respects. Urban environmental issues include air pollution (from vehicle exhaust, generators, wood stoves, and open burning of garbage), surface and groundwater pollution, reduced vehicular and pedestrian mobility, land degradation, settlement on hazardous areas, increased overcrowding

<sup>23</sup> The demand for new development land is directly related to the density, nature, and location of that development. Presently the average residential plot size in new areas, such as the returnee townships, is about 300 square meters. And typically, residential development comprises about 60 percent of a settlement area. Based on these two figures, and if all new development is on new land, about 375 km<sup>2</sup> are needed for 75,000 returnees and IDPs, and about 855 km<sup>2</sup> for the estimated additional 1 million persons (or 166,000 families), for a total of 1,200 km<sup>2</sup> by 2010. This amount can be reduced, however, if government adopted a policy to reduce plot sizes and 'density' existing areas, using infill and vertical development. For example, a World Bank study in 2006 estimated that Kabul's existing built up area could accommodate the city's immediate growth needs – for around 300,000 persons – by infilling vacant lots at current densities and/or by densifying specified lower density areas through an additional floor. Kabul's medium-term growth requirements – for about one million people – could and should be accommodated on the large amount of underdeveloped land to the east of the city. For longer term growth, the study admitted that the only solution is to guide development towards the plateau north of the mountains, but only if a suitable water source is identified and adequate infrastructure laid out. Importantly, the study concludes that starting by developing new land without taking the suggested preliminary steps first would not only be extremely costly and riskier, but also hard to justify since around 80% of Kabul's existing residents have inadequate access to basic urban infrastructure.

(families double-up in existing houses and existing families grow in size), unsafe working conditions, loss of cultural and natural heritage assets, as well as the lack of environmental regulations and enforcement capacity to address these issues.. Urban households that use biomass for cooking fuel (30% in summer and 39% in winter) and for winter heating (60%)<sup>24</sup> – may be exposed to indoor air pollution. Households without any heating source (5%) may suffer from exposure. About 14% of households have generators, the use of which may cause air and noise pollution. Presently about 10% of urban households own a car or truck and 9% own motorbikes, yet 55% own bicycles.

**Insufficient employment opportunities.** Formal sector employment opportunities in urban areas have not kept pace with urban population growth. For example, 700 factories were active in Kabul before the war but now only 17 are working<sup>25</sup>.

#### Urban settlement size distribution.

The urban population is concentrated in a few cities. About 53 percent of the urban population lives in Kabul. The next five cities (Herat, Kandahar, Mazar, and Jalalabad, and Kunduz) with populations above 100,000, account for an additional 26 percent of the population, with none having more than 7 percent. The remaining 28 cities account for only 14 percent<sup>26</sup>. This skewing of the urban population has large implications on overall national and regional economic and social development including (i) problems of rapid urbanization in large cities, and (ii) neglect of, and lost opportunities for, developing medium and small-sized cities, including their potential to absorb some rural to urban migration movements. There is a need therefore to assess development policies in light of detrimental effect of this pattern of urban settlement.

24 NRVA 2005

25 Urban Poverty Reduction in Afghanistan, Workshop Report, Afghanistan Research and Evaluation Unit, August 2006.

26 List of urban areas by population, MUD

**Construction sector dominated by foreign firms.** The total GDP in 2007/8 is about USD 8.7 billion with construction accounting for about 11% of GDP or about USD .9 billion. Much of the construction is carried out by foreign firms<sup>27</sup> and there is considerable scope for the Afghanistan private sector to increase its share of the construction expenditure.

#### CONSTRAINTS

Key constraints on the development of the urban sector include the following.

**Urban sector has not been a priority with donors and government.**

International aid in Afghanistan was 10 USD per capita in 1997, increasing to 37 and 47 USD per capita in 2005 and 2006 respectively<sup>28</sup>. But aid to the urban sector appears not to have been a donor priority – with the exception of the World Bank, KFW, EC, and USAID – as can be seen in the breakdown of the World-Bank Afghanistan Reconstruction Trust Fund (ARTF)<sup>29</sup>. The urban sector received only USD 68 million<sup>30</sup>, or 17 percent, of the USD 404 million for ARTF investment projects<sup>31</sup>, with the balance going to rural development (74%) and technical assistance and capacity building (9%). The government budget, too, allocates to urban management only 122 USD million, about 2.5% of the total USD 4.7 billion<sup>32</sup> for the four years 1383 through 1386. Moreover, the urban allocation declines over the period. At least one writer documents a general anti-urban bias in the assistance to developing countries in

27 Note from USAID Capacity Building Program

28 for Kabul Power Supply, and Urban Water Supply and Sanitation, and Emergency Power Rehabilitation Program.

29 ARTF Report to Donors, Fourth Quarter of the Afghan Fiscal Year 1385, March 2007

30 Ordinary and Development Budgets for the Islamic Republic of Afghanistan, President of the Islamic Republic of Afghanistan's Decree, 1398/1/21

31 Le bias anti-urbain dans les pays en développement, Rémy Prud'homme2, April 2007

32 Report on sub-national governance; World Bank

the last 50 years<sup>33</sup>, based among other things on opposition of planners and policymakers to the demographic growth of cities. Finally, in post-conflict countries, donors tend to focus more on 'emergency' rather than 'development' responses which, while addressing some of the symptoms, fail to deal with the underlying causes of urban issues.

**The post-conflict environment.** Features of the post-conflict environment of Afghanistan constrained the development of the urban sector. These features include lack of government capacity and effective policies, institutional rivalries, patchy coordination, exploitation of public resources, insufficient internal revenue, and limited private investment. To attract investors, Afghanistan needs political and economic stability and security, clear regulations, reasonable tax rates and collection, access to finance and infrastructure, and a skilled work force. While some donors are keen to provide significant funds for reconstruction and development, the government often lacks the absorptive capacity. The result is often: donor-driven projects without arrangements for long-term service operations and maintenance; reliance on existing institutions and laws that may no longer be appropriate or applicable; and postponement of regulatory and structural reform of infrastructure sectors in the face of so many urgent demands.

#### Lack of agreement on urban area definitions and functions.

A standard definition of the term does not exist in Afghanistan, despite this having important implications on the urban sector in terms of the number of areas considered as urban. Various ministries and government agencies disagree on the definition, number, and boundary of urban areas. The Central Statistics Office identifies 34 provincial urban centres, and divides some of these into urban districts. MOI, Afghanistan

<sup>33</sup> Such as Spinboldak; verbal communication from UN-Habitat staff

Geodesy, and Cartography Head Office agree that there are 217 provincial and rural municipalities having populations of more than 5000 people<sup>34</sup>, whereas MUD lists 56 cities of over 5000. MUD also lists an additional 82 cities. The basis for delineating city boundaries is unclear, some cities do not have official boundaries<sup>35</sup>. There is also a lack of agreement on the functions of and resources required by urban areas of different sizes.

#### Lack of will to regularize informal settlements.

Although the majority of urban households live in informal settlements<sup>36</sup>, the prevailing policies fail to acknowledge the need for regularization of these areas and intensive investments in services and infrastructure as a central part of the process of urban development. While the legal dimensions of this issue may be addressed through the adoption of a new Land Policy, effective and just implementation of any program will be critical to their success, along with measures to deter further sprawl of informal settlements. Until their tenure is regularized in some coherent manner, households without tenure security will not make significant investments in their dwellings, and governments will be reluctant to undertake public infrastructure improvements.

**Water resource constraints.** Most urban areas lack sufficient sources of inexpensive water for present and future populations. For example, for Kabul, the sustainable yield of its main aquifers, at less than 53 Mm<sup>3</sup>/year, is sufficient to serve only two million persons (assuming 75 liters per capita per day (lpcd)<sup>37</sup>, which is low compared to

<sup>34</sup> It is estimated that, in the six main cities, about 2.3 million people reside in informal settlements, and about 1.9 million people lack security of tenure. In Kabul informal settlements cover 69% of the land

<sup>35</sup> World Bank: Information on Kabul.

<sup>36</sup> For example, Kandahar and Herat both had a deficit of about 3 million USD, or about 4 and 10 percent of expenditure, respectively.

<sup>37</sup> Reforming Municipal Finance in Afghanistan's Municipalities: World Bank presentation to MoI Workshop on Developing the Capacity of Municipal and Provincial Administration Heads, 4-6 August, 2007

international “standards” of 135 lpcd). Kabul’s shallow aquifers are being rapidly depleted, contaminated, and threatened by further urbanization. Considering this constraint, viable options include: (i) sourcing water from distant, and more expensive, sources; (ii) reducing the level of service, but requiring improved water management; (iii) limiting urban growth in accordance with the water supply constraint. At the same time, it will be increasingly important to develop a strategic plan for the water sector that addresses demand management, including use restrictions, supply options and constraints, and protection of existing sources. In addition, sustainable operations will require adequate revenues through adequate tariffs, which could be adjusted to different purchasing powers of the users, and generally lowered through higher collection efficiency and through an efficient operation of the systems.

#### **Weak Urban Management:**

Sector responsibilities remain unclear, resulting in rival institutional claims of institutions over urban planning, management, legislation, and implementation of development initiatives. The recently established Independent Directorate of Local Governance is responsible for municipal administration. MOI controls urban traffic management, the Central Authority for Water Supply and Sanitation (CAWSS) manages urban water supply, the Ministry of Transport (MOT) runs urban public passenger transportation. There is as yet no agreed urban policy, and functional responsibilities and roles remain unclear, confused or inappropriate. While municipalities – a relatively independent level of government – can collect revenues, formulate budgets and hire staff, they face many administrative and institutional challenges. For example, revenue generation capacity is poor, planning and budgeting is not linked to needs, expenditure controls are weak, the organizational structures do not relate to strategy, and staff capacity needs strengthening and skills updating.

**Insufficient management and technical capacity:** Lack of capacity on all levels vertical and horizontal is the main obstacle within the Government agencies including the urban sector. The Ministry of Urban Development and municipalities suffer lack of technical as well as managerial capacity through out the institutions. The municipalities have to get its development budget from its own revenue. Due to low revenue, the municipalities are not in the position to deliver urban services, utilize its own resources and build its capacity. Since the municipalities are the implementing partner of urban plans and policies formulated and delivered by MoUD, no wonder how best the plans would be but without sufficient capacity within municipalities the plans and policies will remain on the piece of paper. Thus MoUD can not achieve its goals and urban strategy without having a functionalize municipalities in the process of service delivery and implementation of plans and policies.

#### **Weak Municipal Finance:**

The capacity of municipalities to deliver essential public services is constrained by the lack of a well-defined urban fiscal policy framework. While a Public Finance and Expenditure Management Law exist, its implementing regulations have not been enacted. While the Law provides for transfers from the government budget if a justifiable need exists, municipalities cannot expect transfers from MoF even under dire circumstances. Deficiencies in the municipal finance sub-sector relate to weaknesses of upward accountability from municipality to the national level, municipal accountability and transparency, and downward accountability to communities and citizens. Upward accountability issues include: (i) insufficient municipal revenues to fund required expenditures<sup>38</sup>; (ii) lack of central government approval and legal backing for the numerous taxes, fees, and charges that have been introduced by many municipalities; (iii) no municipal power to spend their own funds without MoF approval; (iv) poorly designed and

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<sup>38</sup> Ibid

defined central-municipal funds transfer system – with no specified transfer pool, erratic transfers, unclear procedures and regulations, and lack of emergency responsiveness; (v) undue influence of provincial governors over municipalities to detriment of MoI and MoF; (v) weak budget system – with confused roles and practices of the central agencies (MoI and MoF), numerous arithmetic and misclassification errors, and lack of required reporting to mustafiat<sup>39</sup>.

Weak municipal accountability and transparency is characterized by: (i) weak accounting and financial management including inadequate chart of accounts, poor or no audit reports, and lack of financial inputs into decision-making; (ii) flawed budget and revenue systems including artificial separation of development and operational budgets, use of incremental rather than reality-based budgeting, poor income recording, no budget formulation procedures, development budgets not linked to planning and priority setting, no budget control and monitoring system, poor contract management, and no financial rules<sup>40</sup>.

Weak downward accountability and transparency is characterized by: (i) inadequate use of existing structures for accountability (gozar and wakhil-i-gozar); (ii) lack of system to ensure community input into planning and budgeting and proper feedback; and (iii) vagueness about roles of Wakhil and CDC system<sup>41</sup>.

**Inadequate urban sector information:** Accurate data about the existing condition of urban centers is scarce, and investment in systematically monitoring urban trends is limited. The information that is available is rarely used, and

<sup>39</sup> Ibid

<sup>40</sup> Kabul urban land crisis: A summary of issues and recommendations, Kabul Urban Policy Notes Series n.1, World Bank

<sup>41</sup> These cover: (i) Kabul's land crises; why and how Kabul should upgrade its informal settlements; (ii) Kabul's choice of growing by building a new town or by densifying its existing areas; (iii) the scope for formal documents of title and the courts resolve all land disputes; and (iv) conflicts over property rights and resolution of disputes in Kabul.

a range of 'urban myths' therefore prevail, and serve to distort the assessment and design of urban programs. If urban interventions are to be more effective, it is vital that accurate information about population, household characteristics, availability of services and facilities, scale of private/public investments, extent and nature of urban poverty etc is readily available to all stakeholders. A systematic urban development indicator system, against which progress in the sector can be measured, has not yet been formulated and agreed.

## INSTITUTIONAL, REGULATORY AND MANAGEMENT SET-UP OF THE URBAN SECTOR

Urban sector stakeholders can be grouped as follows: (i) Afghanistan Government at all levels; (ii) donors, including World Bank, KfW, ADB, USAID, JICA, CIDA, DFID, SIDA, GTZ, ISAF CIMIC, and foreign aid offices of Italy, Norway, Iran, Korea, India, Turkey, UAE, Saudi Arabia, Germany, Australia, France, EC and USA; (iii) Non-Government Organizations including UNDP, UN-HABITAT, UNHCR, ILO, IOM, UNIFEM, AKDN, AKTC, CARE, Afghanistan Research and Evaluation Unit, Mercy Corp, Medair, Oxfam GB, ACBAR, IRC, BRAC, Afghanaid, Action Contre la Faim and Ockenden International; (iv) private for-profit sector; (v) civil society; and (vi) the academic or higher education sector.

Afghanistan Government agencies with urban-sector roles include MUD, the newly established Independent Directorate of Local Governance, MOI, MOF, MoRR, MoE, MoRR, Ministry of Youth and Culture, MoL, National Environment Protection Agency, Kabul Municipality, AUWSSC (the new corporation) and other municipalities. The division of labor between agencies is unclear, particularly the respective roles of the different levels of government. Ministry of the Interior has responsibility for local government and municipal

administration. Ministry of Finance is responsible for revenue disbursement and budgetary control.

Ministry of Justice is responsible for municipal, land and planning law, as well as the wider issues of rule of law that impinge on urban development and management. While MOA is responsible for identifying and selecting land for returnee resettlement townships, selection is not based on a proper feasibility study. Line ministries of Health, Education, Water, Industry, Youth, and Women's Affairs are responsible for their sectoral services in urban areas. The Civil Service Reform Commission and Priority Reform and Restructuring (PRR) process impacts on public sector institutional and human resource development and distribution.

**Provincial governments** function as the 'first-line supervisors' of municipalities (other than Kabul) before the oversight done by IDLG and MOF.

#### **Independent Directorate of Local Governance (IDLG),**

newly created directly under the President, will oversee municipal governments. Moreover, IOLA will absorb the entire civil affairs arm of the Ministry of Interior (MOI) and the part of the Office Administrative Affairs (OAA) dealing with provincial governors and provincial councils. IOLA will also control traffic management and deal with registration of births and deaths, regulatory issues and statistical matters.

**Ministry of Urban Development** has its head office in Kabul and seven provincial zonal offices in Kandahar, Jalalabad, Herat, Chest, Bamyan, Mazar and Kunduz. About 400 staff is in the head office and 150 in the zonal offices. MUD has eight directorates: Planning & Co-ordination; Housing Policy; Building and Construction; National Codes & Standards; Urban Development; Urban Heritage; Water Supply; and Administration &

Finance. Each Directorate is subdivided into Departments. Most of MUD's technical staff is in the Directorate of Building & Construction (which has Departments of Architecture and Engineering) and the Directorate of Urban Development. The latter's Planning Department has about 50 professionals, only two of whom have formal planning qualifications - the rest are engineers.

MUD is responsible for urban policy formulation and guidance, support to municipalities for development, and the preparation of urban master plans – having recently shed responsibilities for construction, maintenance and management of housing. MUD is in principle committed to the devolution of the urban management to municipalities and districts and CDCs, the latter for the upgrading of informal settlements. But this devolution will take time and require the development of new values, skills and capacities, not to mention political will.

**Municipalities** are responsible for: (i) implementation of master plans; (ii) sanitation and sewage treatment, street lighting, planting greenery; (iii) distribution of plots for residential and commercial purposes and expropriation of land; (iv) collection of revenues from municipal properties and taxes from shops, markets and residential buildings; (v) construction of physical facilities such as public latrines & bathhouses; (vi) construction and maintenance of public roads, markets, commercial, cultural and civic centers. While they report to MOI, they are somewhat autonomous, and MoI provides them little managerial support, advice or capacity development. Other ministries – responsible for the delivery of services, specifically health and education – also do not provide support to municipalities. Significant support is needed, mostly from MUD. But MUD cannot develop municipal capacity alone. It will need to engage other partners such as universities, private sector training organizations and consultants.

**Board of Planning for the Deh Sabz New City** under the direct supervision of Prof. Nadri, Senior Economic Advisor to the President of Afghanistan.

**Afghan Professionals** lack of relevant experience and capacity for effective urban management. Only a few professionals have the required skills. There is therefore an urgent need for both technical and management training across the board, which should be matched by sustained efforts to transform control-driven urban institutions to ones that enable and facilitate.

## CURRENT LEGISLATIVE FRAMEWORK

Current legislative framework is inadequate but improving. New policies and laws – including land policy, housing policy, mortgage law, water distribution law, municipal law, and land acquisition law – are being considered or are being drafted. Ongoing initiatives to improve the existing legal framework include the amendment of the Local Administration and Municipal Laws and the drafting of a Property Tax Law. Other relevant pieces of legislation are the Local Administration Law, the Law on Municipalities, and the City Services Act.

Afghanistan lacks a coherent Municipal or Local Government Law, given that the present legal framework is inconsistent and ambiguous. Municipalities are presently regulated under the Constitution 2004, the Municipal Law (2000) and twelve other laws or regulations.

The Community Development Councils (CDC) Bylaw (November 2006) has been ratified by the President and is a significant step towards achieving the constitutional aim of elected councils at the local levels. These CDCs, particularly in their role in managing informal settlement upgrading programs, are becoming institutionalized in MUD and relevant municipalities. However, there are several issues of concern on the operations of CDCs in urban areas that include CDC sustainability

and representation and their co-existence with the wakil system. And the CDC By-Law has thus far seen limited applicability in the core urban areas.

Gaps in the legislative framework include legislation to address physical planning, tenancy, and a national (urban) spatial policy and strategy; Centralized ‘master’ plans of urban areas, prepared 30 years ago, have not been updated. There is now significant gap between the plans and reality. This is now recognized and City Development Plans for Kabul and four other major cities are currently under preparation. The old master planning methodology could never have been effective in guiding urban growth, as plans were too ambitious, too expensive, too specific and too rigid. A new approach, called “structure plans” – that set out broad directions for urban growth as well as guidance for local plans and are continuously updated – is considered to be an improvement to master plans.

Urban environmental legislation is gradually materializing. For example, a new Environment Law (January 2007) has a number of provisions relevant to urban management. These include: environmental management principles (Art. 5), which are binding on Ministries, municipalities, and all other institutions having a potential environmental impact; Committee for Environmental Coordination (Art. 10); environmental impact assessment (Chapter 3); integrated pollution control (Chapter 4); water resource conservation and management (Chapter 5). In another example, draft EIA Regulations, under the National Environmental Impact Assessment (EIA) Policy, which will shortly be presented to the Council of Ministers for their approval.

## PRIVATE, PUBLIC, AND DONOR INVESTMENTS - PAST THREE YEARS

Public investment from central government is low. Private investment in housing is significant, with informal settlements in Kabul alone

representing more than USD 2.5 billion in fixed capital investment, not including land value<sup>42</sup>. Donor investment is also significant and includes the following:

The **World Bank** has invested large sums in the urban sector between 2002 and 2007, largely for the sub-sectors of water supply and sanitation, electricity, income generation, local governance, land tenure, roads and drains, and policy advocacy. This includes: (i) the Emergency Infrastructure Reconstruction Project (US\$33 million Grant) to rehabilitate water supply and sanitation in secondary cities, sanitation in Kabul, and basic electricity for several provincial cities; (ii) the Emergency Community Empowerment and Public Works Project (US\$42 million Grant) to support local income generation and infrastructure rehabilitation through labor-intensive public works, strengthened local governance, and small reconstruction and development projects; (iii) Kabul Urban Reconstruction Project (US\$25 million Grant) to reconstruction and rehabilitation in 19 of Kabul's most vulnerable and poorest neighbourhoods to improve access to basic services, obtain secure land tenure, and build capacity in both the Ministry of Urban Development and Housing and Kabul Municipality; (iv) Repair of Major Kabul City Roads and Water Drainage Systems Project (US\$3 million); (v) Urban Water Sector Project (US\$40 million grant) in Kabul and provincial towns, which has financed feasibility studies for Kabul (financed by KfW) and 11 provincial capitals currently served by CAWSS and 11 cities not yet served by CAWSS; and (vi) Kabul urban roads improvement project (US\$18 million). The Bank has also promoted the Urban Land Dialogue initiative aimed at identifying and building consensus on how to approach and address critical rban issues, and has disseminated a series of six Urban Policy Notes<sup>43</sup>

42 Kabul urban land crisis: A summary of issues and recommendations, Kabul Urban Policy Notes Series n.1, World Bank

43 These cover: (i) Kabul's land crises; why and how Kabul should upgrade its informal settlements; (ii) Kabul's choice of growing by building a new town or by densifying its existing areas; (iii) the scope for formal documents of title and the courts resolve all land disputes; and (iv) conflicts over prop-

**KfW German Financial Cooperation** was one of the first Urban Sector donors in Afghanistan. Since 2002, KfW, on behalf of the German Government, has committed about EUR 56 million (US\$ 68 m) directly and another EUR 9 m through the EU for emergency works. This includes: EUR 41.6 m for water supply infrastructure in Kabul, Herat and Kunduz; EUR 8.5 m for road repairs in Kunduz and Kabul; and EUR 15 m for emergency repairs of the Kabul power network. Further assistance is given by the German Technical Cooperation (GTZ) and the German Development Service (DED) to CAWSS and the water utilities in Kabul, Herat and Kunduz.

**USAID** is active in the land and water and sanitation sub sectors. Its LTERA project is providing land tenure security, basic services (water, power, and sanitation) in districts 7 and 13 in Kabul City and towards formalization of informal settlements into the municipality's urban planning process. The project includes mapping, community mobilization, property and socio-economic data collection and management, and property adjudication and dispute resolution. In the water sub sector, USAID provided about USD 37 million to assist Afghan ministries and the private sector. The program included design and construction of improve water distribution systems in Gardez, and Ghazni, preliminary water project feasibility and design studies in 7 cities, water and sanitation technical assistance.

**UNDP** has a number of urban sector initiatives. For example, it has established a Urban Development Group (UDG) which implemented has implemented some urban infrastructure upgrading works under the "Recovery and Employment Afghanistan Program" (2002 to2006). It has also supported the USD 12.7-million Regional initiative for Sustainable Economy Program (RISE) (2006-7) is Balkh, Nangarhar and Kandahar provinces, jointly implemented by UNDP, FAO and the UNMACA, together with MUD and MoA. The project has promoted integrated regional development through, among

erty rights and resolution of disputes in Kabul.

other components, capacity development of local authorities and communities in M&E, and short-term employment generation and urban infrastructure support.

**Japan International Cooperation Agency (JICA)** and the Government of Japan have actively participated in the reconstruction and development of Afghanistan and conducted urgent rehabilitation support programme (URSP) since April 2002. URSP started in Kabul immediately after the collapse of the Taliban regime. It quickly responded to the changing needs in the post-conflict situation in Kabul city including urgent rehabilitation for roads, schools buildings and media facilities and so on. Following the URSP in Kabul, the urgent rehabilitation support program was formulated to cover Kandahar and Mazar-i-Sharif mainly for road and school rehabilitation.

**EC / UN-HABITAT's** Reintegration of Returnees and IDPs through policy, planning and targeted assistance, involved urban upgrading in a section of districts 6 and 7 in Kabul and districts 1, 2 3, and 4 in Jalalabad. A follow-up project is being planned in Kabul and Jalalabad. The EC has also funded some urban road projects including a 20 km section of the Kabul-Jalalabad road in Kabul, and in Jalalabad the entrance and a 8km bypass road (14 m euro).

**Swiss Development Corporation (SDC)** has Integrated water and sanitation project in Dasht-e-Barchi, Kabul Winterization programme support to vulnerable in Kabul Floods Prevention measures Kabul River Embankment, Sports for women, Gymnasium in Women's park- Kabul, Community Center for Disabled (CCD) in Dashti Barchi **Aga Khan Trust for Culture** is undertaking a large programme of cultural heritage protection and restoration in Kabul that include a coherent plan for the area, including a busy commercial quarter.

**Kabul Municipality** earmarks about 55% of its revenues for capital investment projects. It is planning new development areas to accommodate about 262,000 people<sup>44</sup>. It is preparing a City Development Plan, and has increased the number of districts from 17 to 22.

**Kandahar Municipality** has implemented to following projects as of 2006: 70km of roads; housing project for 35,000 families; six parks; water, sanitation, and drainage projects; new area development site for 1,000 households; industrial park; and improved solid waste collection.

**Jalalabad Municipality** has undertaken three main shelter projects in Qasim Abad, Malang Jan Meena (targeting martyred and disabled people) and Shahid Abdul Haq.

CARE's Kabul Environmental Sanitation & Health Project (KESH) is providing support 10,000 households in sanitation, water, urban governance, capacity building and health education as well as providing job opportunities for the most vulnerable people in different targeted districts of Kabul. Its Kabul Area Shelter Project (KASP), in 7 districts of Kabul, is targeting 3,000 vulnerable households (i.e. returnees, disabled individuals and women-headed households) living in sub-standard dwellings by providing shelter construction support, water supply, sanitation and health education.

## ROLE OF PRIVATE SECTOR AND FOREIGN INVESTORS IN URBAN SECTOR

While some multinational corporations have invested in Afghanistan, the economy remains largely informal. There are significant challenges to, but also opportunities for, increasing private investment. The general climate of the country is pro-business, and Afghanistan has the potential to become a hub between Asia, Europe, and the

<sup>44</sup> These developments include: (i) A satellite town for 37,000 people on 137ha of land in District 7, (ii) a development for 150,000 people on 20,000 plots in District 20, and (iii) a development for 75,000 people on 10,000 plots in District 22.

Middle East. Even the weaknesses can be perceived to provide investment opportunities, particularly in the engineering and construction fields, to help rebuild infrastructure, and in the linkages to upstream and downstream construction-related businesses.<sup>45</sup>

Private sector investors include those in the formal sector and informal sector. Formal sector investment of about US\$ 2.5 billion goes into private villas, apartment blocks, and commercial buildings.

Informal settlement investment represents a significant investment in dwellings, basic roads, footpaths and drains, and other improvements. In Kabul this is estimated at about another US\$ 2.5 billion.

Private sector can play a major role in urban development through investments, construction and provision of infrastructure and services. The private sector can also promote urban productivity, employment and income generation. Nevertheless, security and political instability are major constraints on private sector-led development activities, particularly in southern and south-eastern provinces. Other constraints on private sector investment, in the view of private firms, are electricity supply, access to land, corruption, and access to finance.

Bilateral donors with military roles have considerable funds for development activities in these areas, but security concerns have led some implementing partners to, in the short term, to stop work, and in the longer term, to revise their implementation strategies. Work stoppages, additional security requirements, and constraints on oversight have an impact on the delivery capacity, timing, cost, and quality of development programs. The adoption of an approach that relies more on local management and implementation is considered essential. Experience has shown that

involving local formal and informal structures can contribute to security enhancement, activity planning, implementing and monitoring of development activities.

## MOST IMPORTANT EXISTING PROGRAMS/ PROJECTS

The most important existing programmes include: Strategic Regional Development Planning.

### A. Overall Goal and Strategy for Urban Sector *Strategic Vision*

*The urban areas in the country will become hubs for economic growth with all basic infrastructure and services established so as to facilitate this growth, reduce poverty and encourage social development..*

#### Goal

The overall goal of the urban sector is:

To ensure increased access to improved services, and affordable shelter while promoting sustainable economic development as part of efforts to reduce urban poverty through encouragement of private investment.

#### Overall Policy Framework:

The National Urban Sector Strategy aims to provide the much needed strategic direction for policy development as well as for increasing investment into the urban sector. The strategy addresses a number of institutional, legal, and policy related issues, which will facilitate implementation of the priority urban sector programs and projects. It incorporate a results-based framework for monitoring the outputs and outcomes of the investments made in the urban sector.

45 Investment Horizons: Afghanistan, World Bank Group,

## Priority Policies:

- Promote urban governance through decentralization, participatory processes, market-based approaches, and improved regulations.
- Capacity building at all levels of urban governance.
- Developing a coherent national urban policy.
- Finalization of the National Land Policy, including urban informal settlement policy
- Improving revenue generation of cities through direct cost recovery for and economic pricing of urban services, property-based taxes, and use of computer systems.
- Scaling-up urban upgrading pilots, including phased regularization of informal settlement, and programs to meet the immediate housing, tenure security and service needs of the poor and vulnerable people.
- Increasing the supply of serviced land by developing new urban areas, especially within the cities, to meet the present and future housing needs of the people.
- Improving city-wide basic infrastructure and services, in particular water supply, sanitation, roads and green areas.

## Informal Settlement Regularization

One of the most important new policies adopted by this Urban Sector Strategy is a commitment of the Government of Afghanistan to regularize all existing informal settlements in all urban areas, while ensuring that there is land, basic infrastructure and basic services available for future settlement needs to accommodate poorer groups.

This policy is justified by the following arguments:

- **Initial occupation of informal settlements was justified.** People settled here because the State was not able to provide them appropriate legal options, not because they are criminals or wanted to cheat the State;
- **Eviction and demolition is not a viable option.** The informal settlement populations are just too large. There are currently no other adequate, appropriately located, and affordable settlement options, and the government does not have the resources to provide these options. There is no “higher or better” land use that would justify informal settlement removal. Furthermore, demolition would waste the billions of dollars of private fixed investment that these settlements embody, create poverty, probably lead to new informal settlements elsewhere, thereby pre-empting alternative uses of scarce urban land.
- **Informal settlements are working.** They provide shelter services and informal sector enterprise opportunities to millions of households. Pilot upgrading efforts in several Afghan cities have shown that households are willing and able to organize and form local governance structures; plan, implement and maintain infrastructure, services, and livelihood projects; and resolve ownership, boundary, inheritance and other disputes,
- **Informal settlements need improving.** Most informal settlements lack access to improved water, access to improved sanitation, sufficient living space, dwellings of sufficient durability and structural quality.
- **Regularization would make informal settlements work better.** International experience proves that regularization of informal settlements leads to; increased private investment in housing and micro-

enterprises; higher incomes; improved cost recovery for basic services and improved urban environments; higher property values; and the potential to tax these values for wider municipal investments.

- **Regularization is doable.** International experience shows that wholesale regularization is possible if national and city authorities recognize and work with the communities.

The policy will need to be elaborated by stakeholders at all levels of government and by communities themselves. Nevertheless, the following draft basic principles will be incorporated:

- Do not forcibly evict households from informal settlements;
- Relocate informal settlement households only when their lives or health are at risk and only through solutions acceptable to and negotiated with these households;
- Provide secure tenure and upgrading of existing settlements rather than relocation in all other cases, according to criteria and principles negotiated with households and their organizations;
- Incorporate security of tenure as a fundamental concept, taking into account the need for gradualness and the wide variety of options in addition to freehold titles;
- Take into account the different types of informal settlements including those: on public lands; on private land; on grabbed land or land bought from land grabbers; and where the situation is unclear

Provisionally, the policy will not require the provision of freehold individual title, although this is not excluded. Instead it will combine protective administrative or legal measures

against forced evictions - including the provision of titles that can be upgraded, if required - with the provision of basic services. In this way the policy will preserve the cohesion of beneficiary communities and protect them against market pressures during, and more importantly, after the tenure upgrading process.

It is recognized that the existing legal framework may need to be modified, and there are a number of legal constraints that will need to be addressed, as follows. The Afghanistan Constitution includes provisions that support the regularization of tenure in informal settlements. Article 14 Chapter 1 requires the state to take necessary measures to provide housing and land to eligible citizens in accordance with the law. This may be interpreted as enabling adoption of a policy that takes into account the rights of informal settlers who have peacefully and legitimately occupied land for a period of time. Nevertheless, the 2004 Presidential Decree on Land, Article 7 constrains efforts directed at formalizing tenure in its statement that private property may only be proven by legal deeds, ignoring the evidence of customary title deeds and other means to establish legitimate ownership. The 1978 master plan of Kabul also constrains the formalization of informal settlements, but is being superseded by a new development plan that is expected to be sympathetic to the new policy. Modifications of legislative framework will need to include laws on anti-eviction and formalization of informal property rights, as well as a framework that authorizes elected community structures to adjudicate property rights.

## STRATEGIES

The National Urban Sector Strategy aims to provide the much needed strategic direction for policy development as well as for increasing investment into the urban sector. The strategy addresses a number of institutional, legal, and policy related issues, which will facilitate

implementation of the priority urban sector programs and projects. It incorporate a results-based framework for monitoring the outputs and outcomes of the investments made in the urban sector. The key strategies to meet the overall urban sector goals are to:

- Raise the profile of the urban sector in the National Development Agenda.
- Decentralize essential urban facilities and services, such as housing, water supply, and sanitation, and enable municipal governments to assume the role of provider jointly with community and private-sector beneficiaries.
- Ensure increased, equitable, and balanced investment in urban centres of all sizes across the country.
- Make cities and towns attractive to national and international investors.
- Enhance donor support to the urban sector since the Government capital investment funds are insufficient.
- Promote participation of the private sector in urban development through enabling appropriate partnerships.
- Apply improved technical standards for urban planning and development to ensure quality development consistent with the availability of resources.
- Adopt pro-poor and environmentally sustainable approaches for urban planning and development.
- Reduce urban poverty by facilitating urban economic development.
- Ensure effective monitoring of project outputs and outcomes.
- Adopt a sector-wide programmatic approach with multi-year funding to tackle the broad range of problems affecting urban areas.
- Encourage central government agencies to jointly provide technical and financial support (through a revolving fund) to municipal government urban development initiatives as long as these comply with established standards.
- Promote symbiotic urban-rural linkages, which are needed if urban areas are to serve as engines of socio-economic growth.
- Promote inter-local government cooperation, among municipalities or between municipalities and surrounding districts to achieve economies of scale and synergies in the exploitation of limited resources or in delivery of capital-intensive public services, such as piped water supply, solid waste final disposal, and sewage treatment.

## A. Overall Strategic Objectives

### 1. Short-term (2008-2009)

- Improve access to safe water, through continued 'emergency' investments in urban water supplies in Kabul and priority urban centres
- Pursue a program of capacity building and legislative and institutional reform in support of national urban recovery and development
- Implementation of emergency shelter programs for vulnerable groups

- Formulation of participatory recovery plans for key provincial municipalities
- Identify areas/modalities for new urban development
- Improve monitoring through introduction of relevant urban indicators
- Key Urban roads

## **2. Medium Term (2010-2012)**

- Consolidate investments in basic infrastructure (water, sanitation, drainage and roads) based on priority municipal development plans
- Implement legislative and institutional reforms across the country including accelerated property registration
- Formulate participatory development plans for key provincial municipalities
- Identify critical areas/services for potential private sector investment
- Increase availability of affordable urban land and housing in priority centers
- Ensure that results of monitoring is reflected in urban program development

## **3. Long Term (2013-2020)**

- Monitor the impact of legislation and institutional performance
- Implement urban development plans - covering land, housing, services, public facilities and manufacturing enterprises – across the country
- Facilitate private investments in service-delivery, housing, production etc

- Ensure availability of affordable finance across all urban centers
- Review/reform urban strategies on a periodic basis

## **PRIORITIES**

The following top priorities support implementation of the strategic sector goals and desired outcomes:

- Promote urban governance through decentralization, participatory processes, market-based approaches, and improved regulations.
- Capacity building at all levels of urban governance.
- Developing a coherent national urban policy.
- Finalization of the National Land Policy, including urban informal settlement policy
- Improving revenue generation of cities through direct cost recovery for and economic pricing of urban services, property-based taxes, and use of computer systems.
- Scaling-up urban upgrading pilots to programs to meet the immediate housing, tenure security and service needs of the poor and vulnerable people.
- Increasing the supply of serviced land by developing new urban areas, especially within the cities, to meet the present and future housing needs of the people.
- Improving city-wide basic infrastructure and services, in particular water supply, sanitation, roads and green areas.

An understanding of the sectoral priorities of citizens at the local level can be gleaned from several sources including the City Action Plans (CAP), the NRVA, and a UN-HABITAT community planning exercise in Kabul.

**Table 1: Priorities as expressed at local level**

	City Action Plans		Kabul District 6 & 7 Community Action Plans	NRVA
	by budget priority	by No. of projects		
Roads and drains	1	1	1	3
Water	2	1	2	1
Urban management	3	3		
Kindergarten/clinics			3	
Sanitation / Solid waste	4	4	4	
Housing			5	
Electricity				2
Schools				4

**City Action Plans.** The CAPs<sup>1</sup> are the result of stakeholder workshops conducted by MUD in seven cities – Herat, Kandahar, Mazar, Jalalabad, Khost, Farah, and Lashkargah – in which the participants identified, agreed on, and costed projects that addressed their priority needs in six sectors<sup>2</sup>. All CAPs identify three priority projects in each sectors. Priority one and two projects account for 48% and 28% of the total budget, respectively. If the sector budget as a percentage of the total budget is taken as an indicator of sector priority, then the priority is for roads (45%), sewers (24%), potable water (18%), urban management (8%), sanitation and waste collection (5%), and land management (<1%). Cities were found to have very differed priorities – for instance, in Khost gives priority to water (67%), Farah to roads (97%), and Mazar to sewers (81%). In addition, value of the per capita value of the CAPS also varied; while the average CAP investment request per capita is US\$ 92, Jalalabad's is US\$ 6 and Khost's is US\$ 308. A deeper analysis of proposed projects across all CAPs also reveals project priorities. In the road sector, “road-paving” is the most frequently proposed project,

<sup>1</sup> Most CAPs benefited from an earlier exercise in participatory planning called “City Profiling / Municipal Strategic Action Planning” which was supported by UN-HABITAT.

<sup>2</sup> A seventh sector, electricity, was also included in the CAP but is excluded from discussion in the Urban Sector Strategy because it is addressed by another Ministry.

mentioned by five cities. A “pedestrian-vehicle separation fence” is mentioned by three, while “car-parking”, “traffic signals”, and “transport and passenger terminals” are mentioned by two cities. Projects that were mentioned by only one city include “public transport”, “footpaths”, and “capacity development of the traffic police”. In the water sector, “distribution network expansion” is mentioned by six cities, with one city giving priority to formal over informal settlements. “Network rehabilitation” is mentioned by three cities. “Source development” is mentioned by five cities, with projects that include reservoirs and deep wells. Only two cities proposed projects to “maintain existing networks”, while only one each mentioned “water meters”, “water treatment”, and “ground water protection”. There were fewer projects in the sanitation and drainage sector, and only in the case of “storm drainage” did cities mention the same project type. Other projects in this sector included “new sewers”, “sewer system rehabilitation”, “public toilets”, “solid waste management”, and “landfill”. In the urban management sector, “city or local area development planning” was mentioned four cities, while two of these also called for “surveys of planned areas so as to address the issue of illegal settlement”. One city proposed “new townships”, specifying separate townships

for immigrants and returnees. Another city proposed a “greening” project comprising tree planting and neighbourhood parks.

**National Risk and Vulnerability Assessment.** NRVA(2005) provides a list of priority urban interventions that were expressed by shuras. In order, the first four priorities of both female and male shuras are: (i) improved drinking water quantity; (ii) electricity provision; (iii) repairing local roads; (iv) new or improved educational facilities for boys and girls. The fifth priority for female shuras was improved veterinary services, while that for males were new or improved local health facilities for women and men.

**Priorities in Kabul District 6 and 7.** In facilitating the preparation of participatory community action plans in 20 selected neighbourhoods in Kabul District 6 and 7,

UN-HABITAT found that the priorities were for roads and drains, potable water, clinics and kindergartens, solid waste management, shelter, and latrines. Other items of lesser priority included schools, electricity, and community centres.

## DESIRED OUTCOMES (BY 2013)

### A. Overall Urban Sector Strategic Outcomes

- Strengthened municipal capacity to manage urban development and deliver services.
- Improved institutional coordination and monitoring of key urban indicators
- Increased access to basic services for urban households
  - Kabul: 50% of h/h with piped water, sanitation, drainage and waste collection; 30% coverage for programs of hygiene promotion

- 33 provincial towns/cities: 30% of h/h with piped water, sanitation, drainage and waste collection; 10% coverage of hygiene promotion programs.

- Phased regularization of tenure for 50 % of h/h in informal settlements, in parallel with upgrading of public services and facilities, as well as new urban area development.
- Increased availability of affordable shelter, with 50% increase in numbers of housing units and 30% increase in area of serviced land on the market, coupled with access to affordable finance. For details refer to Annex I (Action Plan).
- The Afghanistan Compact includes several benchmarks that the urban sector strategy must consider. These include:

The **Urban development benchmark** (as stated in the Afghanistan Compact) states that: “By end -2010; Municipal Governments will have strengthened capacity to manage urban development and to ensure that municipal services are delivered effectively, efficiently and transparently; in line with MDG investment in water supply and sanitation will ensure that 50% of households (h/h) in Kabul and 30% of households (h/h) in other major urban areas will have access to piped water”;

The **Land registration benchmark** states that: “A process for registration of land in all administrative units and the registration of titles will be started for all major urban areas by end-2007 and all other areas by end-2009. A fair system for settlement of land disputes will be in place by end-2009”;

*The Water resource management benchmark states that: “Sustainable water resource management strategies and plans covering irrigation and drinking water supply will be developed by end-2006, and irrigation investments will result in at*

*least 30% of water coming from large waterworks by end-2010.*

The **Energy benchmark** states that: "By end-2010: electricity will reach at least 65% of households and 90% of non-residential establishments in major urban areas; at least 75% of the costs will be recovered from users connected to the national power grid. A strategy for the development and the use of renewable energies will be developed by end-2007";

The **Environment benchmark** states that: "In line with Afghanistan's MDGs, environmental regulatory frameworks and management services will be established for the protection of air and water quality, waste management and pollution control, and natural resource policies will be developed and implementation started at all levels of government as well as the community level, by end-2007";

The **Afghan cultural heritage benchmark** states that: "A comprehensive inventory of Afghan cultural treasures will be compiled by end-2007. Measures will be taken to revive the Afghan cultural heritage, to stop the illegal removal of cultural material and to restore damaged monuments and artefacts by end-2010".

However, this urban sector strategy adopts a broader and more comprehensive urban sector goal and a five- instead of a three-year period. Therefore the following desired results are visualized so as to help achieve the above stated urban sector benchmarks and goals by 2013.

- Municipal government's capacity strengthened to manage urban development and to ensure efficiency and transparency in delivering municipal services, including:
- Development, endorsement and initial implementation of a "National Urban Policy".

- Adequate municipal budgets for priority reforms, which are in line with the National Urban Policy and meet the immediate needs of urban development.

- Revenue Improvement Programs for 34 provincial or major municipalities developed with supportive capacity building components.
- City Development Plans, including infrastructure investment plans, prepared for 25 major cities.
- Enhanced institutional capacity supported by Institutional Reform Action Plans for effective urban governance in 34 provincial or major municipalities.
- Ensure public participation in urban planning.
- 50% of households in Kabul have access to piped water:
- Completion of Kabul Water Supply Project (ARTF/KFW funded) that aimed at utilizing available ground water resources.
- Develop a program to bring surface water resources for drinking water supply in Kabul.
- 50% of households (h/h) in Kabul have access to improved sanitation:
- 30% of households have improved household toilets supported by hygiene promotion programme;
- 50% of households have improved drainage
- 50% are served by municipal solid waste collection.
- 30% of households in all urban areas (except Kabul) will have access to piped water:
- Complete ongoing ARTF supported water supply for 11 provincial cities and other two cities supported by KFW.

- Implement Water Supply programs in another 21 cities.
- 30% of households in all urban areas (except Kabul) will have access to improved sanitation:
- 30% of households, on average, benefit from sanitation programs in 34 provincial and other major urban cities;
- 10% of households have improved household toilets supported with hygiene promotion;
- 30% of households have improved drainage;
- 30 % of households are served by municipal solid waste collection.
- 50 % of the informal settlements covered by urban upgrading programs:
- The lives of 50% of the population of informal settlements (or 50% of the area of informal settlements) are improved through urban upgrading, including regularization, improved access to basic urban services, durable housing and/or improved livelihoods.
- 50% of urban households, including those in informal settlements will have secure land tenure.
- Further development of new areas for housing within cities:
- 50% increased access to affordable urban land and shelter
- About 30% increase in supply of serviced land for shelter and urban development activities;
- Housing finance is available.
- Other expected results:
- Current percentage of urban residents that live on less than USD 2 per day is reduced by 50%
- Significant increase in institutional investment in residential and commercial development.
- Improved transport infrastructure and management.
- Regional and city plans for major urban areas.
- Existing aquifers and water sheds are identified and protected in all urban areas (as part of physical structure plan).
- Improved and sustainable urban environment.
- Culture heritage assets, including districts, are identified, protected and included in the city development plans in all urban areas.

## FISCAL IMPLICATIONS

Securing Afghanistan's Future (2006) estimated the total investment cost of Afghanistan's urban infrastructure and water supply and sanitation services at US\$ 1.75 billion for the 2004-2010 period. Similarly, the National Urban Programme projected that cost at US \$1.44 billion, or about US\$ 240 million per year. Current estimates of the investment costs include those for Kabul, the City Action Plans, and one for all cities.

Kabul Municipality estimates that US\$ 1.36 billion is required to provide basic municipal services to the residents of Kabul city in the next 5 years, or by 1389/2011).

But as of November 2006, only 14 per cent of the required funds were committed, and since then there has been no major change in available funding.

**Table 2: Infrastructure Investment Gap for Improved Basic Municipal Infrastructure and Services in Kabul (2007-11) (Million US \$).**

No.	Infrastructure and Services	Investment Needs	Committed Funds	Investment Gap
1	Roads	653	64.81	588.19 (90%)
2	Street Lights	28	0.00	28.00 (100%)
3	Green Areas	39	4.24	34.76 (89%)
4	Solid Waste Management	35	6.50	28.50 (81%)
5	Water Supply, Sewerage and Sanitation	428	75.70	352.30 (82%)
6	Drainage	8	0.00	8.00 (100%)
7	Informal Settlement Upgrading	128	31.19	96.81 (76%)
8	River Rehabilitation	41	0.20	40.80 (99%)
9	Others		4.58	
	<b>Total</b>	<b>1,360</b>	<b>187.22</b>	<b>1172.78 (86%)</b>

Source: Preliminary Assessment of Investment Needs and Five-Year Plan for Improved Municipal Infrastructure and Services in Kabul City, 1385 – 1389 (2006-07 – 2010-11), Kabul Municipality, November 2006.

**City Action Plans**, prepared for 7 cities, project total investment costs in all sectors except electricity, at just over USD 408 million or about USD 192 per capita of future 2015 population (see table 3).

**TABLE 3: ESTIMATED BUDGET IN CITY ACTION PLANS FOR 7 CITIES**

City	Population by 2014	Per capita budget	City CAP as % of total	Budget in USD				Land management
				TOTAL	Potable Water	Roads	Urban management	
Herat	550,000	206	28	113,262,220	4,795,890	70,960,000	26,406,430	11,099,900
Kandahar	450,000	185	20	83,470,000	30,670,000	48,500,000	950,000	3,350,000
Mazar	420,000	288	30	121,067,858	364,668	19,912,100	20,000	3,234,750
Jalalabad	350,000	6	0	1,964,668	364,668	1,600,000		97,534,800
Khost	150,000	306	11	45,974,000	30,700,000	14,324,000	950,000	1,540
Farah	62,000	187	3	11,588,844	318,444	11,270,400		
Laskkagar	150,000	208	8	31,220,000	6,100,000	19,100,000	4,800,000	1,220,000
<b>TOTAL</b>	<b>2,132,000</b>	<b>192</b>	<b>100</b>	<b>408,547,590</b>	<b>73,313,670</b>	<b>185,666,500</b>	<b>33,126,430</b>	<b>18,904,650</b>
							<b>97,534,800</b>	<b>1,540</b>

An admittedly rough estimate of the total investment budget requirement for the all 140 designated urban areas except Kabul finds the total costs to be US\$ 720 million for four sectors: water, sanitation and drainage, roads, and urban management. The water investment need estimate (US\$ 68 million) is based feasibility studies for 26 cities, prepared by international consulting firms. For these cities, the feasibility study estimated cost is multiplied by 30 percent to get the cost of targeting 30% of the population. For the remaining urban areas, the total feasibility study estimated cost for all areas is divided by the total projected 2015 population to derived the average per capita costs (which is US\$ 49), then this is multiplied by the projected population and by 30 percent. The sanitation investment need estimate (US\$ 26 million) is based on a rule of thumb that sanitation costs are 30 percent that of water supply costs. The road (US\$ 509 million) and urban management (US\$ 116) costs are derived from the average per capita costs for these sectors in the City Action Plans.

Another rough estimate of the total investment budget needs may be based on the Kabul estimate, since that has been prepared in more detail than any other urban area.

Given that Kabul accounts for about half of the country's urban population, the total funds required for these areas can be assumed to be equal to Kabul's, or USD 1.36 billion.

Thus, depending on the method of, the total investment needs of the urban sector could also be assumed to be between US\$ 2.2 and 2.7 billion for the next five years.

Considering the limited funding available for the urban sector, it can be clearly stated that the investment gap is too large to be met by municipal revenues in the medium term (five years). In Kabul, for example, the total revenue and capital receipts (including proceeds from sale of land)

were 730 million Afs or US\$14.60 million in 1384, and 971 million Afs or US\$ 19.43 million in 1385.<sup>1</sup> While Kabul's total annual revenue increased 33 percent during 1384-85, it is still too little to finance the required urban infrastructure investments. The other cities also face similar municipal revenue constraints. Some municipalities do not have revenue bases of their own and cannot pull themselves up by their 'bootstraps'. These may need to be provided with a fiscal lifeline, at least to the extent needed for their survival.

Therefore urban development will require funding from the core as well as external development budget. In the longer term, municipal resources – including property-based taxes, user charges, development impact fees, private vehicle user charges – will need to be mobilized to finance urban development.

## ***INPUTS***

Inputs into the urban sector include policies, investments, and human resources. These are discussed below.

**Policy actions:** Important policy actions in terms of institutional and capacity development, regulation and legislative activities and policy measures to support implementation of the urban sector's overall goals and priorities and achievement of the desired outcomes are: (i) returnee/IDP resettlement policy; (ii) physical planning law, regulations, codes and standards, capacity development, and enforcement, including participatory planning and implementing methodologies; (iii) national spatial development, including new settlements creation, city-size classification, urban-rural linkages; (iv) institutional reform, including decentralization to municipalities and inter-agency collaboration; (v) municipal finance improvements, including government fund transfers; (vi) service delivery

<sup>1</sup> Kabul Municipality: Annual General Financial Statements, SY 1385.

standards and options, particularly related to informal areas; (vii) urban land management, including regularisation and land titling; local public administration and civil service reform; (viii) housing policy and strategy, with a focus on vulnerable groups; (ix) partnerships with the private sector, civil society, and academia; (x) urban transportation policy and strategy; and (xi) environmental management, including reduction in the air and water pollution.

**Programs:** Key programs to support implementation of the urban strategy and achievement of the desired outcomes are presented in Section V. The overall public investment need for the next five years is ??? The financing gap that will need to be covered externally (donors and private investments) is. A detailed list of programs, sub-programmes and projects is part of the Sector Investment Program (Annex II).

**Indicative costs:** (Note: the cost of the five-year programs and projects will be provided in future drafts).

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**Human Resources:** The Urban sector has limited growth potential due to weak technical and managerial capacity, especially at the municipal level. The Priority Reform and Restructuring (PRR) program has not been implemented in municipalities.

As a result, most of the staff members still get a salary of about \$40 per month. They have little commitment and motivation for improving their performance. The staffing rules do not allow municipalities to hire qualified staff at competitive salaries. Therefore, successful implementation of the urban sector strategy would require following a two pronged human resource strategy. First, a special provision will be made to hire qualified staff, both national and international, through project financing in the short term for meeting the immediate improved capacity needs. Second, a program of capacity building and salary reforms will be introduced for human resource development in the medium and long term.



## CHAPTER 2

# KEY URBAN SECTOR PROGRAMMES

The overall Urban Sector Strategy is divided into three broad themes: (i) Urban Governance; (ii) Finance and Management; and (iii) Land Development and Housing Urban Infrastructure and Services. Under these themes are 14 programs, which reflect the comprehensive development needs of the urban sector in Afghanistan (for details of projects refer to annex III):

### Theme 1: Urban Governance, Finance and Management

- Policy and Legislation Development Programme.
- Urban and Regional Planning and Implementation Programme
- Institutional Development and Capacity Building Programme.
- Revenue Enhancement and Improved Financial Management Programme
- Urban Indicators Development, Urban Data Collection & Analysis Programme.
- Public administration

### Theme 2: Land Development and Housing

- New Area Development Programme – including new townships.

- Comprehensive Area Development Programmes – includes upgrading of existing urban areas through a variety of means that could include: Secondary Roads, Drains, and Green Areas, improved public open spaces, pavements, city centre upgrading.
- Housing Programme, including housing subsidies based on National Housing Policy
- Housing Finance Programme
- Public administration

### Theme 3: Urban Infrastructure and Services

- Urban Traffic and Transportation Improvement Programme. (Municipalities and MoI)
- Water Supply and Environmental Sanitation Improvement Programme.
- City Electrification Programme (Ministry of Power & Energy)
- Informal Settlement Upgrading Programme
- Development of Green Areas, Open Spaces and Recreation Facilities
- Rehabilitation and Safeguarding Historic Cultural and Heritage sites.

## **Theme 4. Urban Governance, Finance and Management**

**Programme 1.1 - Policy and Legislation Development.** This purpose of this programme is to establish national policies and laws that:

- Promote an enabling environment where all stakeholders participate in policy formulation and implementation with their full capacity and potential;
- Create and strengthen democratically elected Community Development Councils (CDC) at the neighborhood level, comprising clusters of households, and Area Development Councils (ADC) at the sub-urban district level.
- Ensure participation of CDCs and ADCs in the preparation and implementation of CDC and ADC plans and those at the district and municipal levels.
- Enact the draft Public Finance and Expenditure Management Law.
- Approve and implement draft Urban land policy
- Reform or enact new land management laws that prevent unlawful occupation of government and private land for economic (and political) gains; facilitate land registration and adjudication; and enable government acquisition of private land for public purposes;

**Programme 1.2 - Urban and Regional Planning.** The purpose of this programme is to:

- Formulate a town planning policy, processes, laws, standards, and guidelines as well as development regulations. This will

include review and assessment of the action planning process and outputs from existing action plans in Afghanistan cities and those undertaken internationally, preparation of a new guideline for action planning with an improved focus on poverty alleviation, engaging potential investment partners from the start, and setting specific timetable and budget frameworks.

- Create effective land management and information systems. This will include: land registration; registration of land titles; development of a system for settlement of land disputes; development of a computerized (GIS) land management system; cadastral surveys; reconciliation of cadastre with actual conditions; linkage of cadastre to a municipal property tax system and with the land registration data; linkage to a planning and development control system.
- Prepare a national settlements development plan that will provide a framework for balanced urbanization, urban-rural links, and greater regional coherence.
- Prepare regional strategic development plans (SDP) for all regions.
- Prepare city action plans and structure plans<sup>1</sup> for Kabul and the 34 major urban areas, and local area plans for selected, fast-growing areas.

**Programme 1.3 - Institutional Development and Capacity Building.** This programme will:

assess, reform and restructure government

<sup>1</sup> The elements of plans will address the following: land use, particularly for low-income households (with 5 and 20 year horizons); transportation management; and community facilities. Other elements may include: safeguarding of historic urban fabric (or heritage protection), protecting natural resources and the environment; creating green areas and networks; economic development; natural hazards; and urban and community design. These plans are seen as an important tool to achieve sector coordination between the programmes of municipalities and ministries

institutions; develop their capacity in line with their objectives and responsibilities; and promote public partnerships with the private sector, civil society, and academia. The capacity building programme in MUD will: establish a capacity building centre or urban sector center; establish new short courses at Kabul University, or at countries in region, for MUD and municipal staff; prepare a comprehensive capacity development programme that addresses priority needs over the urban sector strategy period; provide capacity development opportunities for all types of roles and levels including: political decision-makers, managers, planners, technicians, trainers and operators; develop a database of urban documents (studies, reports, statistics) produced by all agencies; and initiate/improve urban planning, design, engineering and management courses and training programs in major academic institutions in the country. (MS)

**Programme 1.4 - Revenue Enhancement and Improved Financial Management.** The purpose of this programme is to:

- Review existing revenue base and assets;
- Improve municipal revenue generation capacity and expenditure management through widening revenue base, improved collection rates, user charges, co-financing or co-production with users, property or sales taxes, intergovernmental transfers, municipal borrowing, mobilization of local government resources through loan guarantees;
- upgrade accounting and budgeting frameworks, processes, and computer hardware and software
- link capital budgeting to the planning process.

## **Programme 1.5 - Urban Indicators Development, Urban Data Collection & Analysis**

### **Theme 2: Land Development and Housing**

**Programme 2.1 - New Area Development – including townships.** The purpose of this program is to create new serviced and un-serviced land in connection with new urban plans that identify real demand for serviced land at specific locations within individual towns and cities and in all urban areas. Standards of servicing will be based on affordability of target groups. Priority will be given to sites and service schemes, an approach that has proven effective in many countries. The strengths of these schemes are that they can: cater to various household affordability levels and needs through various planning, servicing and technical standards; provide basic infrastructure and services relatively efficiently; permit progressive development thru provision of a sanitary core (known as an “embryo” housing unit). Sectoral agencies will consider other options for providing developable land including: land-sharing, land readjustment, land pooling, and infill development.

**Programme 2.1 (a) – Development of Deh Sabz New City.** The purpose of this programme is to support and regulate the private sector development of a large area on the Dehsabz plain directly adjacent to the north of Kabul as a new city for about 3 million persons. The New City will link to the agricultural area development in Barik-Ab area. It is expected that the New City will create employment opportunities and housing for all income groups as well as an economically attractive investment environment for a much needed skilled afghan middle-class, mostly still living abroad due to a lack of appropriate work and living conditions in Kabul itself. The new city is to be understood as a complementary key development to the region and would reinforce the in parallel ongoing rehabilitation of Kabul. The main constraint to this development is a lack

of water and energy resources. The strengths of this site is that more than 60% of the land is state owned.

**Programme 2.2 - Comprehensive Area Development Programmes.** The purpose of this programme is to upgrade the existing city-level infrastructure urban areas through a variety of means that could include secondary roads, drains, green areas, public open spaces, pavements, city centre upgrading.

**Programme 2.3 - Housing Development.** This programme will improve and produce new housing through: (i) public sector housing production; (ii) support to informal and small scale housing producers – the ‘peoples housing process’; (iii) support to research and development of appropriate building materials and technologies; (iv) upgrading the skills of contractors and labourers; (v) supporting entrepreneurs to upgrade or set up building components manufacturing units; and (vi) support to private sector production, particularly of rental housing. Housing production programmes will consider the particular needs of various groups such as government servants, returnees, Kuchis, IDPs, and other vulnerable groups.

**Programme 2.4 - Housing Finance.** This programme will provide housing finance – for purchase, rehabilitation, and construction of new housing – through: integrating housing finance into government owned banks; stimulating private banks to increase mortgage lending to low-income households, through, for example, mortgage guarantees; initiating community mortgage schemes; lowering mortgage interest rates; reducing collateral and down payment requirements; introducing flexible repayment schemes. This will enhance purchasing power of urban inhabitants and attract private sectors to invest in housing programs. This will lead to a system of affordable land and housing and assured cost recovery for the investors.

**Programme 2.5 - Housing Subsidy.** This programme will provide housing subsidies for very low income households (families with income below of the median income level of the communities where they live), including both owners and renters. The following options will be considered: (i) direct loans to purchase an existing or construct a new house; (ii) government guarantees of loans made by private sector lenders, thus enabling households to purchase houses without a down payment; (iii) mutual self-help housing programs which makes homes affordable to groups of households by valuing to work, or “sweat equity”, by each homeowner; (iv) portable rent subsidies that give eligible households a choice about where to live, including market rate rentals; and (v) subsidies directly to the property owner who then applies the subsidies to the rents that are charged to low-income tenants.

### **Theme 3. Programme to improve infrastructure and services**

**Programme 3.1 - Traffic and Transportation Improvement.** This programme will improve mobility and transport through: better transport sector planning and management, including traffic and parking demand management; infrastructure and service improvements to city roads, pedestrian and bicycle movement systems, on- and off-street parking systems, and public transport; and rules and regulation to minimize gas production which create environmental problems such as air pollution. Infrastructure options that will be assessed include subways, railways, and over-fly bridges.

**Programme 3.2-Water Supply and Environmental Sanitation Improvement.** This programme will: (i) rehabilitate and extend water supply and sanitation services, giving priority to rehabilitating existing areas to an adequate level of service before extending service to new areas (Extensions to new areas will be done in connection with an approved plan for new settlement development);

(ii) rehabilitate and extend roads and drains, but only in connection with an approved plan for new settlement development, and (iii) improve solid waste .

management through waste minimization (reduce, reuse, and recycle) and improved collection, transport and transfer, and disposal alternatives, with consideration given to privatization, community management, affordability and cost recovery.

**Programme 3.3 - Informal Settlement Upgrading.** This programme will include: (i) creation of local governance structures (or CDCs) at the community and area levels; (ii) physical neighbourhood planning; (iii) improved network infrastructure including roads, footpaths, storm drainage, water supply, electricity, street lights, sanitation, solid waste collection; (iv) social infrastructure such as open space, children's' parks, community and health centres, schools, and markets; (v) support to house construction and rehabilitation; and (vi) improved tenure security<sup>2</sup>.

**Programme 3.4 - Rehabilitation and Safeguarding Historic Cultural and Heritage sites.** This programme will identify the most significant heritage monuments and areas for initial focus, undertake a more detailed inventory of heritage assets in these areas, document significance and integrity of heritage assets, prepare detailed conservation plans for each heritage area (rehabilitation and preservation), and implement these plans. Conservation measures will include: public awareness raising, economic incentives to private owners, interpretation and tourism development, legal protection, public investment, and outreach to international bodies.

#### **Programme 3.5 - Development of Green Areas, Open Spaces and Recreation Facilities**

**Programme 3.6 - City Electrification** (refer to the strategy paper drafted by the Ministry of power and energy)

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<sup>2</sup> This will be done through mapping and land surveying of communities, tenure formalization, and land registration. If informal settlements are recognized and provided with tenure security, they are more willing to invest their own financial and other resources in improving the community and their houses. Moreover, they can use the title as collateral. Security of tenure may include formal and informal arrangements, from full land title to customary rights. Although the tenure regularization approach is popular, it is also possible to regularize without any policy intervention to legalize tenure. The regularization strategy focuses on physical interventions, such as infrastructure, amenities provision, and health and education services.



# CHAPTER 3

## CROSS CUTTING & OTHER SECTOR-RELATED ISSUES

This section provides policy recommendations to mainstream cross-cutting issues into the Urban Sector Strategy. Generally, all cross-cutting themes of the ANDS benefit from the key urban

sector programmes (see table below). These issues include gender-equality, environment, regional cooperation, anti-corruption, and counter narcotics, and private sector participation.

Programmes	Cross-cutting Issues					
	Gender	Private sector	Counter-Narcotics	Environment	Regional Cooperation	Anti-Corruption
Theme1: Urban Governance, Finance & Management						
Prog 1.1: Policy and Legislation Dev.	Yes	Yes				Yes
Prog 1.2: Urban & Regional Planning					Yes	Yes
Prog 1.3: Institutional Dev & Capacity Blg	Yes	Yes				Yes
Prog 1.4: Revenue Enhancement & Improved Financial Manag.						Yes
Prog 1.5: Urban Indicators Dev, Data & Analysis						
Theme 2: Land Dev & Housing						
Prog 2.1: New Area Dev		Yes	Yes			
Prog 2.1 (a): Kabul New City	Yes	Yes	Yes	Yes	Yes	Yes
Prog 2.2: Comprehensive Area Dev	Yes	Yes	Yes	Yes		

Programmes	Cross-cutting Issues					
	Gender	Private sector	Counter-Narcotics	Environment	Regional Cooperation	Anti-Corruption
Prog 2.3: Housing Development	Yes	Yes	Yes	Yes	Yes	
Prog 2.4: Housing Finance	Yes	Yes				Yes
Theme 3: Improve Infra & Services						
Prog 3.1: Traffic & Transportation Improvement				Yes		
Prog 3.2: Water Supply & Env Sanitation Improve	Yes			Yes		
Prog 3.3: Informal Settlement Upgrade	Yes			Yes	Yes	
Prog 3.4: Rehab & Safeguarding Historic Cultural & Heritage Sites				Yes		
Prog 3.5: Dev of Green Areas, Open Spaces & Rec Facilities				Yes		
Prog 3.6: City Electrification						

#### A. Gender Quality

- Under Theme 1, Programme 1.1, women will benefit from the promotion of an enabling environment where ALL stakeholders participate in policy formulation and implementation with their full capacity and potential. Similarly, the creation and strengthening democratically elected Community Development Councils (CDC) and Area Development Councils (ADC), and ensuring their participation in the preparation and implementation of CDC, ADC and municipal plans, will provide a good opportunity for women to play their due role in the urban sector.
- Under Theme 2, Programmes 2.1, new area development, in particular the Dehsabz New City, and under Programme 2.2, upgrading the existing area, will provide an opportunity for vulnerable groups, especially widows to benefit from affordable housing with better servicing standards. Under Programmes 2.3,2.4 and 2.5, particular needs of all vulnerable groups, including women, have been taken into consideration.
- In addition to the above:
- Specifically, increase the number and upgrade the roles of women in the central and local government authorities, particularly

professional urban planners and plan implementers;

- ensure that all stakeholders, particularly urban planners, are sensitized to the importance of gender-in-development and gender concerns are mainstreamed in the design and implementation of all urban sector initiatives;
- Monitor the policies and strategies for gender balanced development, through analysis of the outcomes of this strategy.

## B. Environment Protection and Awareness

- Under Theme 3, Programme 3.5 focuses on the development of green areas, open spaces and recreation facilities. Programmes 3.1 dealing with traffic and transportation improvement, will introduce rules and regulations to minimize gas production which create environmental problems such air pollution. Programme 3.2 and 3.3 improve sanitation services, solid waste management, drains and water supply. The implementation of all these programmes will have direct and positive impact on the environment.
- In addition to the above:
- Establish environmental regulatory frameworks and management services to protect water quality. [Coord. with Environment Strategy]
- Develop and implement waste management and pollution control, and natural resource policies. [Coord. with Environment Strategy]
- Integrate environmental screening at all planning levels from construction site planning to regional planning.
- Enforce EIA for all projects in urban areas that may have environmental impacts.

## C. Regional cooperation

- Under Theme 1, Programme 1.2, the development of a national settlement and regional strategic plans will provide a framework for balanced urbanization and greater regional coherence, from which the border cities of Afghanistan and neighbouring countries will benefit.
- Under Theme 2, Programme 2.1(a), the Dehsabz New City will help turning Kabul into a business hub of the Central Asia, South Asia, the Far East and the Middle East. It will provide the necessary services to promote the connectivity of the region and the marketing of Afghanistan as a land-bridging country. Also, under Programme 2.1, the addition of new urban areas with better facilities in the border cities will improve regional activities.

## D. Anti-corruption

- Under Theme1, Programme 1.1, enacting the draft Public Finance and Expenditure management Law will reduce corruption in the urban sector. Similarly, reforming or enacting land management laws and under Programme 1.2, establishing effective land management and information system, will prevent unlawful occupation of land and enable better government acquisition of private land for public purposes. Under Programme 1.3, introducing reform and restructuring in government urban institutions and developing their capacity in line with their objectives and responsibilities, will narrow the corruption occurrences. Also, under programme 1.4, improving municipal revenue generation capacity and expenditure management and upgrading accounting and budgeting frameworks, will curb bribery and distortion.
- In addition to the above:
- develop transparent tendering procedures

- Adopt a zero-tolerance policy for corruption in the public sector.

## E. Counter Narcotics

- Under Theme 2, land development and housing will generate many jobs for skilled and unskilled labour and will enhance the urban lifestyle. This will improve alternative livelihood to members of non-peasant and farmer community who have been forced to leave the urban area and become involved in narcotic production and trafficking.
- In addition to the above:
- Develop a programme to discourage drug-use and abuse in urban areas through improved enforcement and community-based drug treatment, including in urban-upgrading programmes.
- A strong focus on reform and strengthening of key urban institutions, both at the central and regional level, as a precondition of effective urban governance.

## F. Other Issues:

### 1. Private sector participation

- Under Theme1, Programme 1.1, the approval and implementation of draft urban land policy and the reform or enactment of new land management laws will ease the access to land for private sector development. Under Programme 1.3, institutional development and capacity building will promote public partnerships with the private sector. The strategic benefits of partnerships include: (i) improved services at lower costs; (ii) tapping required experience and knowledge of the private firm; (iii) accessing private capital for infrastructure; and (iv) enhanced staff training and career opportunities.

- Under Theme 2, Programme 2.1(a), the development of Dehsabz New City will mostly be a private sector venture. While Government prepares the master plan and possibly some infrastructure, private sector will be the main engine of the New City growth.
- Under Theme 3, Programme 3.2, private sector will be considered for involvement in solid waste management.
- In addition to the above:
  - Prefer forms of partnerships in which government retains ownership of the assets remains with the municipality, while a private firm manages day-to-day operations of municipal services.
  - Enhance the role of the community sector through government contracting directly to Community Development Councils (CDC) and Area Development Councils (ADC) and engaging these in preparation and implementation of higher level plans at the district and municipal levels.
  - Increase inflow of foreign direct investments.

### 2. Coordination and Effectiveness

**Government:** among the official institutions with a role in the urban sector are MUD, Kabul Municipality, the Independent Directorate of Local Government (and the respective municipalities which it oversees), MoF, MoEc and National Environment Protection Agency. A key element of this strategy is the clarification of the division of labor between these institutions, to ensure that urban planning and management can take place more effectively. The various professional bodies will play an important role in ensuring that appropriate standards are maintained in the public and private sector.

### **3. International Community**

While the Urban Working Group will continue, under the chairmanship of the Minister, to deal with certain operational aspects of urban development, it will be necessary to form and task a series of more focused groups (comprising civil servants, implementing partners and, where appropriate, donors) to ensure effective coordination of the various thematic programs viz. Urban Governance, Finance and Management, Land Development and Housing Urban Infrastructure and Services. It will also be essential that effective sub-groups be formed in provincial canters, to ensure that city-specific issues are dealt with effectively.

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Risk Assessment (major constraints to implementation: security, capacity, etc.): The principal risk facing the implementation of this strategy is **lack of capacity** to effectively plan and manage urban development initiatives on the scale required. Second to this - in contrast to widespread private investment in most Afghan towns and cities – is a chronic **lack of public resources** that continues to constrain urban recovery and development. Third, **insecurity** in certain urban centres is likely to continue to constrain implementation of official and externally-funded urban initiatives.



## CHAPTER 4

# MONITORING AND EVALUATION

### Mechanisms for implementation, monitoring and evaluation of the Urban Sector Strategy

- **Implementation.** The Ministry of Urban Development will provide overall urban sector monitoring and coordination, and facilitation. However, the ministry will lead on governance programs which are specific to national urban development in a systematic way.
- Municipalities will implement programs in their respective cities. They will work closely with civil society, NGOs, communities, especially the poor and the vulnerable groups. To the extent possible, communities will participate in the design, implementation and management of projects.
- Ministry of Finance, Ministry of Interior and Ministry of Justice on institutional development programs to ensure that these programs are inclusive and support participation of people particularly, the poor and vulnerable in project cycle management. The Ministry will also work with Supreme Council for Water, Ministry of Water and Energy, Ministry of Industries and Mining etc for development and protection of water resources; the Ministry also work with Ministry of Public Health in ensuring that the water supply in urban areas is potable and that the sanitation programs contribute to reduction of epidemics by being supportive of good and clean environment.
- **Monitoring.** MUD has overall responsibility for urban sector monitoring, particularly for monitoring the implementation of all projects under the core development budget. It will establish a base line of the state of the urban sector and develop appropriate monitoring mechanisms. This will include a results-based matrix for each sub programme with appropriate indicators for monitoring outputs and outcomes. Based on UN-HABITAT's urban sector indicators, these will be compatible with targets and goals consistent with the Millennium Development Goals.
- Municipalities will monitor the progress made against these indicators at the local level and report regularly to MUD. To the extent possible, monitoring will be undertaken through a Community-Based Monitoring Systems (CBMS), based on those used in other countries including India, Pakistan, Nepal, and Sri Lanka. CBMS involves the design, pilot -test and implementation of a methodology for data collection and data processing, validation and application in policy and programme development. It aims to mobilize and develop local community ability to generate and use data for itself, the city, and the whole urban sector.
- Specifically, the third party evaluator is responsible for: review of the Ministry's work on indicators; contracts with NGOs; and evaluation of the established facilities; in collaboration with the Ministry; development

of competency test for health staff; develop a health facility assessment that can determine quality of care; determine if performance based partnership agreements are being met; and the extent to which the basic urban services and infrastructure and especially the indicators which are designed for the achievement of the benchmarks are being delivered; undertake basic urban facility assessments; estimate costs of service provision in selected provinces; and develop, with the Ministry, a systematic and uniform

- **Evaluation.** In order to ensure an independent, systematic and uniform assessment of the progress, results and impact of urban activities, a third party evaluator will be appointed. This evaluator will evaluate all government, NGO, and donor-funded projects. It will collaborate with the monitoring/evaluation unit of the MUD. All donors and service providers will be expected to cooperate with this third party evaluator. For details refer to Annex II (Monitoring Matrix).

SECTOR INVESTMENT PROGRAM

INDICATOR		TOTAL	%
ENVIRONMENTAL CONDITIONS	Drainage System	Concrete drainage Mud drainage No drainage	1,138 1,465 4,986
Yard	Fair Good Very good Fair Good Very good Pit latrine Septic tank	6,218 1,104 267 6,648 673 268 6,350 1,239	79 18 3 85 11 4 80 20
Surroundings			67
Sanitation			
INFRASTRUCTURAL CONDITIONS			
Lightening	Electricity	4,716	67
Road type	Ordinary Electricity Gas or wood Water supply network others Bicycle Bus Car Walk Paved Unpaved/away	2,873 1,717 5,872 1,954 5,635 409 409 1,382 1,796 3,835 3,754	33 19 81 33 67 5 51 19 25 52 48

INDICATOR		TOTAL	%
Building Condition	New	1,819	24
	old	5,571	73
	Ruined	199	3
wall material	Burened bricks	2,091	29
	Un-burened bricks	5,296	69
	Mud	202	2
CONSTRUCTION CONDITIONS	Concrete (Butimen Coat)	717	9
Roof	Concrete (Iron sheets)	495	8
	Wooden Pole and Mud	6,377	82
	One	4,828	62
No. of floors	Two	1,906	29
	Three	319	5
	Four	89	2
	Five or more	106	2

## KABUL HOUSEHOLD SURVEY (2007)

INDICATOR		TOTAL	%
SOCIO-ECONOMIC CONDITIONS			
Houses surveyed	7,530		
Household surveyed	12,339		
Population ('000)	66.62		
Household / house	1.64		
houses with 1 household	4395		
Houses with 2 households	1813		
houses with 3 or more households	1321		
Persons / family	5.4		
Persons / house	8.8		
Female/male ratio	0.90		
Household w/o father	12		
Household w/o mother	9		
Govt workers	3,843		
Non govt workers	1,452		
EMPLOYMENT			
Free lance workers	1,263.00		
Skilled workers	3091.00		
Un-skilled workers	2307		
Jobless persons	2057		
Informal	5,205		
Formal	2,384		
Informal on slope	1,468.00		
Informal on plain	3737.00		
Formal apartments	741		
Formal courtyard	1643		
Rooms total	21,450		
One room per Household	1,303		
Two rooms per Household	2,287.00		
Three or more rooms per household	3707.00		
Rooms / household	2		
Rooms / house	3		
Houses rented*	2,106		
Houses owned	5,482		
TENURE	72		

## REFERENCES

There is no agreed figure for urban population. Estimates vary between 4.6 million and 7.25 million, depending on the method used. See for example Mapping global urban and rural population distributions: estimates of future global population distribution to 2015; FAO (2005).

<sup>2</sup> Afghan Refugees: Maintain Assistance As Returns Continue into 2005;  
<http://www.interaction.org/> newswire/detail.php?id=3064

<sup>3</sup>Land Distribution to Landless Refugee and IDP Returnees – FAQ, UNCHR, April 2007

<sup>4</sup> Afghanistan Poverty, Vulnerability and Social Protection: An Initial Assessment, World Bank March, 2005.

<sup>5</sup> ACF Afghanistan Kabul Vulnerability Mapping

<sup>6</sup> National Risk and Vulnerability Assessment (NRVA), World Bank, 2003

<sup>7</sup> Interim Report  
of the Task Force 8 on Improving the Lives of Slum Dwellers; Millennium Project; February 2004

<sup>8</sup>Moving out of poverty-migration insights from Afghanistan; January 2005. Negar Ghobadi, Johannes Koettl & Renos Vakis (University of California, Berkeley & World Bank)

<sup>9</sup> National Risk and Vulnerability Assessment (NRVA), World Bank, 2003

<sup>10</sup>National Risk and Vulnerability Assessment (NRVA), World Bank, 2003

<sup>11</sup> Interim Report  
Of the Task Force 8 on Improving the Lives of Slum Dwellers; Millennium Project; February 2004

<sup>12</sup>Moving out of poverty-migration insights from Afghanistan; JJanuary 2005. Negar Ghobadi, Johannes Koettl & Renos Vakis (University of California, Berkeley & World Bank)

<sup>13</sup>National Risk and Vulnerability Assessment (NRVA), World Bank, 2003

<sup>14</sup> Youth in crisis: Coming of age in the 21st century; IRIN; 25 August 2007; <http://www.irinnews.org/InDepthMain.aspx?InDepthId=28&ReportId=69983>

<sup>15</sup> Unpublished UN-HABITAT census of households in project areas in Kabul District 6 and 7 found on average 104 adult females for every 100

males, and in some CDCs up to 117 adult females.

<sup>16</sup> National Reconstruction and Poverty Reduction - the Role of Women in Afghanistan's Future; World Bank, March 2005.

<sup>17</sup> Interim Report

of the Task Force 8 on Improving the Lives of Slum Dwellers; Millennium Project; February 2004

<sup>18</sup>The new Afghanistan after years of war; [http://the-rumi.blogspot.com/2006/11/two-millions-disabled-found-in\\_29.html](http://the-rumi.blogspot.com/2006/11/two-millions-disabled-found-in_29.html)

<sup>19</sup> UN-HABITAT (2006) survey of Kabul district 6 and 7 found that disabled-headed households comprised 1.2% of all households,

<sup>20</sup> UN-HABITAT defines slum as "a contiguous settlement where the inhabitants are characterized as having inadequate housing and basic services. The UN Secretary General defines slums as "... miserable living conditions. Slums lack basic municipal services, such as water, sanitation, waste collection and storm drainage. Slum dwellers live and work in conditions of pervasive insecurity – exposed to disease, crime and environmental hazards"; UN Secretary-General report "We, the Peoples" (A/54/2000 Para 135), 2000.

<sup>21</sup>UN-HABITAT definition of informal settlements are:i) residential areas where a group of housing units has been constructed on land to which the occupants have no legal claim, or which they occupy illegally; ii) unplanned settlements and areas where housing is not in compliance with current planning and building regulations (unauthorized housing) -

<sup>22</sup> Research on housing situation in Kabul city, August 2007, MUD

<sup>23</sup> National Risk and Vulnerability Assessment (NRVA) 2005: Ministry of Rehabilitation and Development and CSO, June 2007

<sup>24</sup> Research on housing situation in Kabul city, August 2007, MUD

<sup>25</sup> World Bank: Information on Kabul.

<sup>26</sup> CSO NRVA Data analyzed by World Bank

<sup>27</sup> Verbal communication from KFW, September 2007

<sup>28</sup> Based on a rule-of-thumb budgeting practice of costing these services at 30% of the water investment costs.

<sup>29</sup> NRVA 2005

<sup>30</sup> Ibid

<sup>31</sup> Afghanistan: Contaminated water supplies likely cause of increased diarrhea, IRIN news, 15 August 2007; UNICEF and Afghan Ministry of Health combat disease by recruiting women to teach, UNICEF website [http://www.unicef.org/infobycountry/afghanistan\\_9068.html](http://www.unicef.org/infobycountry/afghanistan_9068.html)

<sup>32</sup> Report on sub-national governance, World Bank

<sup>33</sup> NRVA (2005)

<sup>34</sup> The demand for new development land is directly related to the density, nature, and location of that development. Presently the average residential plot size in new areas, such as the returnee townships, is about 300 square meters. And typically, residential development comprises about 60 percent of a settlement area.

Based on these two figures, and if all new development is on new land, about 375 km<sup>2</sup> are needed for 75,000 returnees and IDPs, and about 855 km<sup>2</sup> for the estimated additional 1 million persons (or 166,000 families), for a total of 1,200 km<sup>2</sup> by 2010. This amount can be reduced, however, if government adopted a policy to reduce plot sizes and 'densify' existing areas, using infill and vertical development. For example, a World Bank study in 2006 estimated that Kabul's existing built up area could accommodate the city's immediate growth needs – for around 300,000 persons – by infilling vacant lots at current densities and/or by densifying specified lower density areas through an additional floor. Kabul's medium-term growth requirements – for about one million people – could and should be accommodated on the large amount of underdeveloped land to the east of the city. For longer term growth, the study admitted that the only solution is to guide development towards the plateau north of the mountains, but only if a suitable water source is identified and adequate infrastructure laid out. Importantly, the study concludes that starting by developing new land without taking the suggested preliminary steps first would not only be extremely costly and riskier, but also hard to justify since around 80% of Kabul's existing residents have inadequate access to basic urban infrastructure.

<sup>35</sup> NRVA 2005

<sup>36</sup> Urban Poverty Reduction in Afghanistan, Workshop Report, Afghanistan Research and Evaluation Unit, August 2006.

<sup>37</sup> List of urban areas by population, MUD

<sup>38</sup> Note from USAID Capacity Building Program

<sup>39</sup> Prioritizing Aid Effectiveness: Taking Forward the Afghanistan Compact and Paris Declaration Commitments (MOF, April 2007)

<sup>40</sup> A fund – established and administered by the World Bank under the supervision of a Management Committee comprising the Asian Development Bank, the Islamic Development Bank, the World Bank, the United Nations Development Program – that includes pledges from 27 donors for both recurrent costs and investment projects.

<sup>41</sup> for Kabul Power Supply, and Urban Water Supply and Sanitation, and Emergency Power Rehabilitation Program.

<sup>42</sup> ARTF Report to Donors, Fourth Quarter of the Afghan Fiscal Year 1385, March 2007

<sup>43</sup> Ordinary and Development Budgets for the Islamic Republic of Afghanistan, President of the Islamic Republic of

Afghanistan's Decree, 1398/1/21

<sup>44</sup> Le bias anti-urbain dans les pays en développement, Rémy Prud'homme2, April 2007

<sup>45</sup> Report on sub-national governance; World Bank

<sup>46</sup> Such as Spinboldak; verbal communication from UN-Habitat staff

<sup>47</sup> It is estimated that, in the six main cities, about 2.3 million people reside in informal settlements, and about 1.9 million people lack security of tenure. In Kabul informal settlements cover 69% of the land

<sup>48</sup> World Bank: Information on Kabul.

<sup>49</sup> For example, Kandahar and Herat both had a deficit of about 3 million USD, or about 4 and 10 percent of expenditure, respectively.

<sup>50</sup> Reforming Municipal Finance in Afghanistan's Municipalities: World Bank presentation to MoI Workshop on Developing the Capacity of Municipal and Provincial Administration Heads, 4-6 August, 2007

<sup>51</sup> Ibid

<sup>52</sup> Ibid

<sup>53</sup> Kabul urban land crisis: A summary of issues and recommendations, Kabul Urban Policy Notes Series n.1, World Bank

<sup>54</sup> These cover: (i) Kabul's land crises; why and how Kabul should upgrade its informal settlements; (ii) Kabul's choice of growing by building a new town or by densifying its existing areas; (iii) the scope for formal documents of title and the courts resolve all land disputes; and (iv) conflicts over property rights and resolution of disputes in Kabul.

<sup>55</sup> These developments include: (i) A satellite town for 37,000 people on 137ha of land in District 7, (ii) a development for 150,000 people on 20,000 plots in District 20, and (iii) a development for 75,000 people on 10,000 plots in District 22.

<sup>56</sup> Investment Horizons: Afghanistan, World Bank Group,

<sup>57</sup> Presentation of H.E. Minister Pashtun, Minister of Urban Development

<sup>58</sup> Most CAPs benefited from an earlier exercise in participatory planning called "City Profiling / Municipal Strategic Action Planning" which was supported by UN-HABITAT.

<sup>59</sup> A seventh sector, electricity, was also included in the CAP but is excluded from discussion in the Urban Sector Strategy because it is addressed by another Ministry.

<sup>60</sup> Kabul Municipality: Annual General Financial Statements, SY 1385

<sup>61</sup> The elements of plans will address the following: land use, particularly for low-income households (with 5 and 20 year horizons); transportation management; and community facilities. Other elements may include: safeguarding of historic urban fabric (or heritage protection), protecting natural resources and the environment; creating green areas and networks; economic development; natural hazards; and urban and community design. These plans are seen as an important tool to achieve sector coordination between the programmes of municipalities and ministries

<sup>62</sup> This will be done through mapping and land surveying of communities, tenure formalization, and land registration. If informal settlements are recognized and provided with tenure security, they are more willing to invest their own financial and other resources in improving the community and their houses. Moreover, they can use the title as collateral. Security of tenure may include formal and informal arrangements, from full land title to customary rights. Although the tenure legalization approach is popular, it is also possible to regularize without any policy intervention to legalize tenure. The regularization strategy focuses on physical interventions, such as infrastructure, amenities provision, and health and education services.

# ANNEX I: NATIONAL ACTION PLAN

PILLAR : INFRASTRUCTURE SECTOR : URBAN DEVELOPMENT		Policy Actions or Activities	Category	Time frame	Responsible Agency
Outcomes					
Access to secure tenure and improved services and public facilities for inhabitants of informal settlements	Review of relevant legislation to facilitate regularization, followed by program of investments in basic infrastructure and public facilities with drawing from best practices in the region	Legislation/ RC Cross Cutting Issues		1388-1390 (2009-2011)	KM/IDLG/MUD
Improved institutional coordination and monitoring of key urban indicators	Institutional reform and enforcement of administrative processes; introduction of effective systems of monitoring and evaluation for the implementation phase for transparent urban development processes	Institution Building		1388-1389 (2009-2010)	KM/IDLG/MUD
Increased and inclusive access for urban households to basic services	Investments in piped water systems and drainage networks (improved sanitation), Urban Property registration and mapping in major municipalities	Development		1387-1390 (2008-2011)	IDLG, MoUD
	Feasibility studies for building new roads	Development		1388-1390 (2009-2010)	IDLG, MoUD, MPW
	Implementation of Traffic Management Strategies	Development		1388-1389 (2009-2010)	MoUD, IDLG, KM, MoI
	Increase reconstruction of asphalt roads in major and secondary cities	Development		1388-1389 (2009-2010)	IDLG, MoUD, KM, MPW
	Rehabilitation of existing damaged roads	Development		1388-1389 (2009-2010)	IDLG, MoUD, KM, MPW
	Design and build (asphalted) new roads	Development		1388-1389 (2009-2010)	IDLG, MoUD, KM, MPW
	Investments by public and private sector in land and housing development, coupled with development of systems of housing finance	Development		1389-1392 (2010-2013)	KM/IDLG/MUD
Increased availability of affordable shelter	Most needy households receive a housing subsidy	Development		1389-1392 (2010-2013)	KM/IDLG/MUD
	City Development Plans for 40 major municipalities	Development		1388-1389 (2009-2010)	MoUD, KM, IDLG
	Regional Development Plans for all 8 zones of the country	Development		1387-1389 (2008-2010)	MoUD, IDLG,
	Detailed development plans for major 10 cities	Development		1388-1389 (2009-2010)	MoUD, IDLG,
	Provide land tenure to the inhabitants in informal settlements	Development		1389-1390 (2010-2011)	MoUD, KM, IDLG
	Upgrade the basic infrastructure and urban services in the informal area	Development		1387-1391 (2008-2012)	MoUD, KM, IDLG
	Establish Dehsabz New City and turn Kabul into a business hub of the surrounding regions	Development		1386-1404 (2007 - 2025)	DCDA

PILLAR : INFRASTRUCTURE					
SECTOR: URBAN DEVELOPMENT		Policy Actions or Activities		Category	Time frame
Outcomes					Responsible Agency
Strengthened institutional capacity to plan and manage urban development in a systematic and transparent manner	Review and update policies, regulations and implementation plans that will consider crosscutting issues gender, environment, anti-corruption and counter narcotics.	Legislation / Cross Cutting Issues	1388-1389 (2009-2010)	KM/IDLG/MUD	
	Comprehensive and gender sensitive reform of institutions, review and update of relevant legislations, policies and administrative processes	Institution Building/ Gender Cross Cutting Issues	1388-1389 (2009-2010)	KM/IDLG/MUD, MoWA	
	Institutional Reform Action Plans in 34 municipalities/ ministerial departments	Institution Building	1388-1389 (2009-2010)	KM/IDLG/MUD	
	Computerize HRM/Finance and program activities to strengthen Human Resource, Financial and Program Management	Institution Building/ AC Cross Cutting Issues	1387-1389 (2008-2010)	MUD, KM	
	Improved financial management in 30 major municipalities	Institution Building	1388-1390 (2009-2011)	KM/IDLG/MUD	
	Property tax implementation	Institution Building	1389-1391 (2010-2012)	IDLG, KM	
	Preparation of economic data base for revenue administration	Institution Building	1389-1391 (2010-2012)	MoUD, IDLG, KM	
	Establish Uni- urban Data collection unit (encourage disaggregated data collection)	Institution Building/ Gender Cross Cutting Issues	1388-1389 (2009-2010)	MoUD, IDLG, KM	
	Training and capacity building of the key staff in the process of monitoring and evaluation and re-planning	Institution Building	1388-1389 (2009-2010)	KM/IDLG/MUD	
	Capacity building of technical and managerial staff of provincial municipalities	Institution Building	1388-1389 (2009-2010)	IDLG,	
	Management Plans and Implementation of management plans initiated for protected areas and national parks, including game reserves, wetlands and bird sanctuaries	Development/ Environment Cross Cutting Issues	1389-1391 (2010-2012)	MUD, KM, NEPA	
	Ensure environment sustainability of all urban development programs	Development/ Environment Cross Cutting Issues	1389-1391 (2010-2012)	MUD, IDLG, KM, NEPA	
Improved environment friendly programs and policies	Develop national settlement and regional strategic plans and through them provide a framework for balanced urbanization and greater regional coherence, from which the border cities of Afghanistan and neighboring countries shall benefit.	Institution Building/ RC Cross Cutting Issues	1388-1390 (2009-2011)	MUD, IDLG, KM	

## ANNEX II: URBAN SECTOR STRATEGY MONITORING MATRIX

PILLAR: INFRASTRUCTURE		SECTOR: URBAN DEVELOPMENT		Targets	
Expected Outcomes		Indicators		Baseline	
Access to secure tenure and improved services and public facilities for inhabitants of informal settlements	Index on the progress of providing access to secured tenure and improved services and public facilities for inhabitants of informal settlements	0%		The registration of titles will be started for all major urban areas and a fair system for settlement of land disputes will be in place.	
	% of informal settlements having access to basic services	10-15 %		50 % by 2013	
	% of informal settlements have access to secure tenure	0%		90% by 2013	
Improved institutional coordination and monitoring of key urban indicators	Index on the progress of improving institutional arrangements for coordination and monitoring of key urban indicators.	In principals all the key institutions have agreed upon on but details and actions have been to prepared		Improved institutional coordination by end 2008	
Increased access for urban households to basic services	Index on the progress of providing improved to basic services by urban households.	Due to capacity limitation within municipalities; the urban services delivering are very low and aren't sufficient and efficient		By March 2011, Municipal Governments will have strengthened capacity to manage urban development and to ensure that municipal services are delivered effectively, efficiently and transparently.	
	% of investment in urban road networks	10-15 % urban roads are improved with some improved services.		70% by 2013	
	% of households having access to safe water supply in Kabul.	18-21 % h/h has access to safe piped water		in line with MDG investment in water supply and sanitation will ensure that 50% of households (h/h) in Kabul will have access to piped water by March 2011	
	% of households having access to piped water supply in other major urban areas except Kabul.	15-18% h/h has access to safe piped water		30% of households (h/h) in other major urban areas will have access to piped water", by March 2011	
	% of households having access to sanitation facilities in Kabul.	5-8% h/h have access to improved sanitation		50 % by March 2011	
	% of households having access to sanitation facilities in other major urban areas except Kabul.	10-12% h/h have access to improved sanitation		30% by March 2011	
	Proportion of open green spaces per developed urban area affordable shelter.	less than 5%		30% By 2013	
	Index on the progress of providing increased availability of affordable shelter.	less than 5%		60% by 2013	
Increased availability of affordable shelter	% of urban residents having access to affordable finance	0%		TBD	
	The process is underway to implement mortgage system			50% by 2013	
	% completion of city development plans for 34 provinces			90% by 2013	
	% completion of city development plans for 34 provinces	20%			

**PILLAR: INFRASTRUCTURE**

Sector: Urban Development	Expected Outcomes	Indicators	Baseline	Targets
Strengthened institutional capacity to plan and manage urban development	Index on the progress of building strengthened institutional capacity to plan and manage urban development.	The process is under way has been recently initiated	by 2013 Sustainable water resource management strategies and plans covering drinking water supply will be developed along with improved sanitation. Municipalities will be operating under updated laws and policies and effectively and transparently delivering urban services, with better customer service system	

### ANNEX III: LIST OF PROGRAMS AND PROJECTS

S/N	AFG Budget Ref	Programs / Project title	Project Duration	Breakdown of Requirements (US\$ Millions)			Total Requirement (US\$ Million)	Total Funding (US\$ Million)	Gap (US\$ Million)	Major Donors	Core External	Responsible Agency
				Start	End	1387	1388	1389	1390	1391	1392+	
1	AFG/0730301	Solid Waste Management	1386	1.500						1.500	1.500	WB
2	AFG/0739301	Sanitation Improvement in Kabul City	1386	2.000						2.000	2.000	ARTF
3	AFG/0805301	Comprehensive Project Area Development Kabul City	1387	5.000						5.000	5.000	Kabul Municipality
4	AFG/0805901	Kabul City Central Canalization	1387	7.000						7.000	7.000	Kabul Municipality
5	AFG/0556402	Land Tenure Regulation (KURP)	1385	1.000						1.000	1.000	MoUD
6	AFG/0556403	Engineering & Management Support (KURP)	1383	1.000						1.000	1.000	MoUD
7	AFG/0556405	Planning & Project preparation (KURP)	1385	0.250						0.250	0.250	WB
8	AFG/0583901	Provincial Towns WSS (Water Supply System) - 14 towns	1383	21.700						21.700	19.800	ARTF
9	AFG/0610401	Establishment of Program Implementation Unit (PIU)	1384	0.479						0.479	0.479	Core
10	AFG/0630301	Twenty Thousand Housing Unit in Dahr Sabz District Kabul.	1385	6.600						16.600	6.600	AFG
11	AFG/0652101	Establishment of Information Technology Department	1385	0.500						0.500	0.500	Core

S/N	AFG Budget Ref	Programs / Project title	Project Duration		Breakdown of Requirements (US\$ Millions)					Requirement (US\$ Million)	Total Funding (US\$ Million)	Gap US\$ Million	Major Donors	Core External	Responsible Agency		
			Start	End	1387	1388	1389	1390	1391								
12	AFG/0736101	Preparation of Master Plan for New Kabul	1385		2,000	2,00				0.150	0.000	0.150			AFG	MoUD	
13	AFG/0805701	Construction of Administration Building of Urban Development, Bamyan Zone	1387		0.150						4,000	2,000	2,000				
14	AFG/0805801	Reconstruction of Hindu Temple building in Kharabat, Kabul	1387		0.070					0.070	0.000	0.070			Core	MoUD	
15	AFG/0806001	Afghan Traditional Architecture School (Prince Charles Foundation)	1387		0.500					0.500	0.000	0.500			Core	MoUD	
16	AFG/0806301	Establishment of Unit for Youth Engineers Capacity Building	1387		0.200					0.200	0.000	0.200			Core	MoUD	
17	AFG/0832401	Survey, general study and planning provision for old city of Ghazni	1387		0.139					0.139	0.000	0.139			Core	MoUD	
18	AFG/0800001	FC - Kabul II Water Supply	1386		9.25	0.00				9.250	9.250	0.000	GER		External	MoUD	
19	AFG/0828101	Safe Drinking Water	1387		13.50	0.00				13.500	13.500	0.000	USAID		External	MoUD	
20	AFG/0830901	Maimana town water project	1387		1.70	0.00				1.700	1.700	0.000	NOR		External	MoUD	
21		Dehsabz New City (New Kabul)	1387	1404	8.00	50.00	100.00	125.00	125.00	408.000	0.000	408.000				MoUD	
22		Canalization, Sanitation, and Water Supply for Kabul and other major urban centers	1388	1391	25.00	75.00	100.00	125.00	125.00	425.000	0.000	425.000				MoUD/IDLG	
23		Urban Roads	1388	1391	50.00	50.00	75.00	75.00	300.00	300.000	0.000	300.000				MoUD/IDLG/MPW	
		Total:			82.54	137.00	225.00	275.00	300.00	1,219.538	59.579	1,159,959					

## ANNEX IV: LIST OF PROVINCIAL PRIORITY PROJECTS

No	Project Name	Project Location	Responsible agency	Project Duration (year)	
				Start	End
1	Formulation of city development plans for 10 major cities (Mazar, Kandahar, Herat, Jallalabad, Kunduz, Charikar, Pulikhomri, Samangan, Faizabad, Shbriarghan.)	Kabul	MoUD/IDLG	1387	
2	Planning for special 7 economic development zones in across the country	Kabul	MoUD/IDLG/KM	1387	
3	City development plans for 34 Secondary and small cities (1-Maimana, 2-Zaranj, 3-Lashkargah, 4-Grishk, 5-Ghazni, 6-Gardiz, 7-Spin boldak, 8-Bamian, 9-Qalat, 10-Farah, 11-Metherlam, 12-Asadabad, 13-Poli Alam, 14-Urgon, 15-Sharana, 16-Maidan Shar, 17-Jabal sarai, 18-baghlan, 19-Taloqan, 20-Qali nao, 21-Chakhcharan, 22-Saripool, 23-Shindad, 24-Terenkot, 25-balkh, 26- Imam Sahib, 27-Kishan, 28-Kapisia, 29-Katwaz, 30-Maqwir, 31-Jaghori, 32-Dai Kundi, 33-Pujshir and 34-Daerawat)	Kabul	MoUD/IDLG	1388	
4	Serviced Land for 30000 Housing Unit; the project will be implemented in Kandahar , Herat & Mazar provincial centers ; 10000 units in each city	Kandahar, Herat and Mazar	MoUD/IDLG	1388	
5	14000 Housing Units; This project will be implemented in 4 provincial cities; 5000 units in Jallalaad, 3000 units in Khost, 3000 units in Lashkargah and the remaining 3000 in Kunduz	Jallalabad, Khost, Lashkargah and Kunduz	MoUD/IDLG	1388	
6	Asphalt of 200 - KM (A class road in major and B class in the secondary cities provincial centers of	Kanadahr, Mazar, Heerat, Lashkargah, Kunoluz, Bamayan, Khost, Shibirghan Farah, Charikar, Dai Kundi Ghazni, Grishk, Gardiz, Puli Khumri and Samangan,	MoUD/IDLG	1388	
8	Constructionn of Bus/ Truck Terminals in 10 Major cities	Faizabad, Taluqan and Saripol Kanadahr, Mazar, Heerat, Lashkargah, Kunduz, Bamayan, Khost, Shibirghan, Ghazni, and Jalallabad	MoUD/IDLG	1389	

No	Project Name	Project Location	Responsible agency	Project Duration (year)	
				Start	End
9	Urban Water Supply for provincial towns	Farah, Charikar, Dai Kundi Ghazni, Grishk, Gardiz, Puli Khumri and Samangan, Faizabad, Taluqan and Saripol Zaranj, maimana, Spin boldak, Torkham, Badghis	MoUD/IDLG	1387	
10	Establishment and construction of a city (Shahrak) for Kochis in Chawk Arghandi.	Kabul	MoUD/IDLG	1389	
11	Improved Sanitation and Solid waste management	Kabul Farah, Charikar, Dai Kundi Ghazni, Grishk, Gardiz, Puli Khumri and Samangan, Faizabad, Taluqan and Saripol Zaranj, maimana, Spin boldak, Torkham, Badghis Kanadahr , Mazar , Heerat, Lashkargah, Kunduz , Bamyan, Khost, Shibirghan	MoUD/KM	1388	
12	Construction of recreation park in centre of province	Kapisa Dai Kundi Ghazni, Grishk, Gardiz, Puli Khumri and Samangan, Faizabad, Taluqan and Saripol Zaranj, maimana, Spin boldak, Torkham, Badghis	MoUD/IDLG/NOC	1387	
13	Construction of municipality office building and provision of office equipment in centre of province (8 rooms)	Kapisa	MoUD/IDLG		

No	Project Name	Project Location	Responsible agency	Project Duration (year)	
				Start	End
14	Construction of Fruit Markets and Slaughter Houses	BadghisKabul Farah, Charikar, Dai Kundi Ghazni, Grishk, Gardiz, Puli Khumri and Samangan, Faizabad, Taloqan and Saripol Zaranj, maimana, Spin boldak, Torkham, Badghis Kanadahn, Mazar, Heerat, Lashkargah, Kunduz, Bamyan, Khost, Shibirghan	MoUD/IDLG	1387	
15	Upgrading Project in 5 major cities	Heerat, Kandahar, Mazar, Jallalabad and Ghazni.	MoUD/IDLG	1388	
16	construction of Sport Grounds in kandahar city	Ghazni	MoUD/IDLG/NOC	1387	
17	Construction of Sports Stadium in centre of the Province	Logar	MoUD/IDLG/NOC	1387	
18	Construction of new city (Shahrak) in Farah province, 500 houses in Dashte Sufi, centres of Farah.	Farah	MoUD/IDLG	1387	
19	Repair and asphalt the roads inside the city and construct drainage and cross-drainage inside the city (30m2, 130,000 beneficiaries).	Nimroz	MoUD/IDLG/MPW	1387	
20	Construction of 80 public toilets in centre of Kunar.	Kunar	MoUD/IDLG	1387	
21	Reconstruction program of the unplanned areas.	Kabul Urban	MoUD	1387	



# Mining Sector Strategy

1387 - 1391 (2007/08 - 2012/13)



**Pillar III - Economic &  
Social Development**



# Mining Sector Strategy

Approved by:  
Sector Responsible Authorities

<i>Ministry/Agency</i>	<i>Name of Minister/Director</i>	<i>Signature</i>
Ministry of Mines	HE Dip. Eng. M. Ibrahim Adel	

Date of Submission

Feb 2008



# CHAPTER 1

## AFGHANISTAN MINING RESOURCES

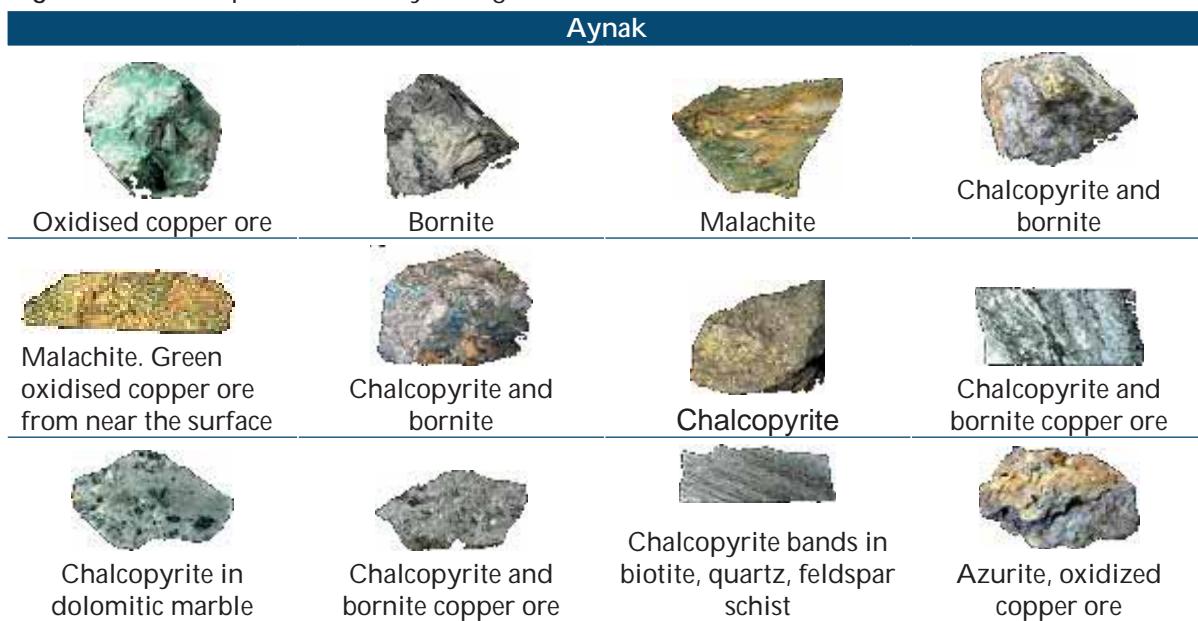
The development of societies signifies that mankind has been able to achieve major and remarkable achievements through using natural resources and processing the minerals, thus securing an immense amount of wealth for their welfare and prosperity.

Currently, natural resources are increasingly becoming more precious due to its high level of usage and the pivotal role it plays in economy growth as well as the improvement of social welfare. Being rich in untouched natural reserves,

Afghanistan stands among rich countries for its natural resources.

Through provision of enabling environment and better alignment of mining sector, concrete efforts can be made to develop socio-economic infrastructure and reduce poverty by effectively exploring and exploiting minerals resulting in the prosperity and development of the country. This is indicative of a bright and prosperous future. Below figure shows mineral specimen available in Afghanistan.

Figure 1: Mineral specimen Gallery of Afghanistan



### Gemstones



Emerald, Pansjher



Beryl, variety  
aquamarine



Topaz, Nuristan



Lapis lazuli, Sary-  
Sang, Badakhshan



Kunzite, Nuristan



Kunzite, Nuristan



Quartz, variety  
amethyst



Topaz, Nuristan



Fluorite, Kandahar



Fluorite, Kandahar



Fluorite, Kandahar



Green tourmaline  
grading into pink  
tourmaline (rubellite)

### Industrial minerals



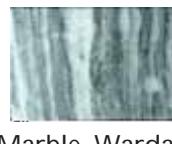
Sulphur, burnt,  
Mazar-e-Sharif



Calcite, Bamyan



Sulphur, yellow,  
Mazar-e-Sharif



Marble, Wardak



Talc, Aichie,  
Nangarhar



Salt crystals on branch,  
Mazar-e-Sharif



Salt crystals on branch,  
Mazar-e-Sharif



Marble, Qalamkar,  
Kabul

### Metallic minerals



Tantalite



Haematite, Hajigak



Chromite, Logar



Galena and sphalerite

Source: Source: MoM, AGS website

After its establishment in 1318, and limited experts and engineers as well as limited financial and technical resources, Ministry of Mines has done major activities with assistance and cooperation provided by expatriates of USA, UK, Germany, France, ex-soviet union and Czechoslovakia.

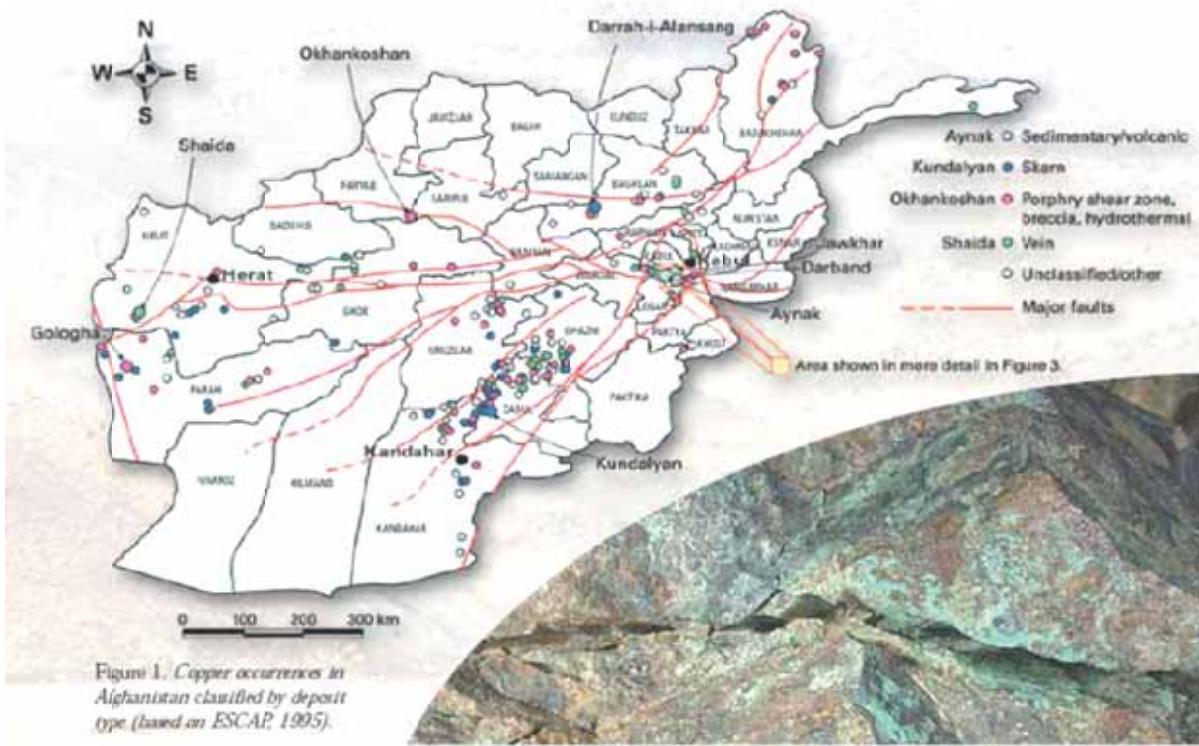
However, basic and systematic studies of solid mining geology in Afghanistan were kicked off in tandem with establishment of Geology Survey Department in 1955. Field groups were established within the framework of Geology Survey Department in order to carry on related services. The number of these groups reached

27 groups in 70s. With concrete efforts made by mining survey office in 1977, geological map of Afghanistan was prepared at measurement of 1:500000 in which over 400 mine reserves have been identified including Ainak Copper, Coal and a number of small and medium mines such as gold, silver, platinum, zinc, nickel, emerald, lapis, ruby ,Canset, Turmalin, Florite, Cromite, salt, radio active elements and tens of mines with 14 types of colors plus a number of construction materials. Gold, Copper, Iron and gemstone minerals locations and types are shown in the below maps.

**Figure 2 on the next page:** Gold Occurrences classified by deposit type (Source: MoM, AGS website)



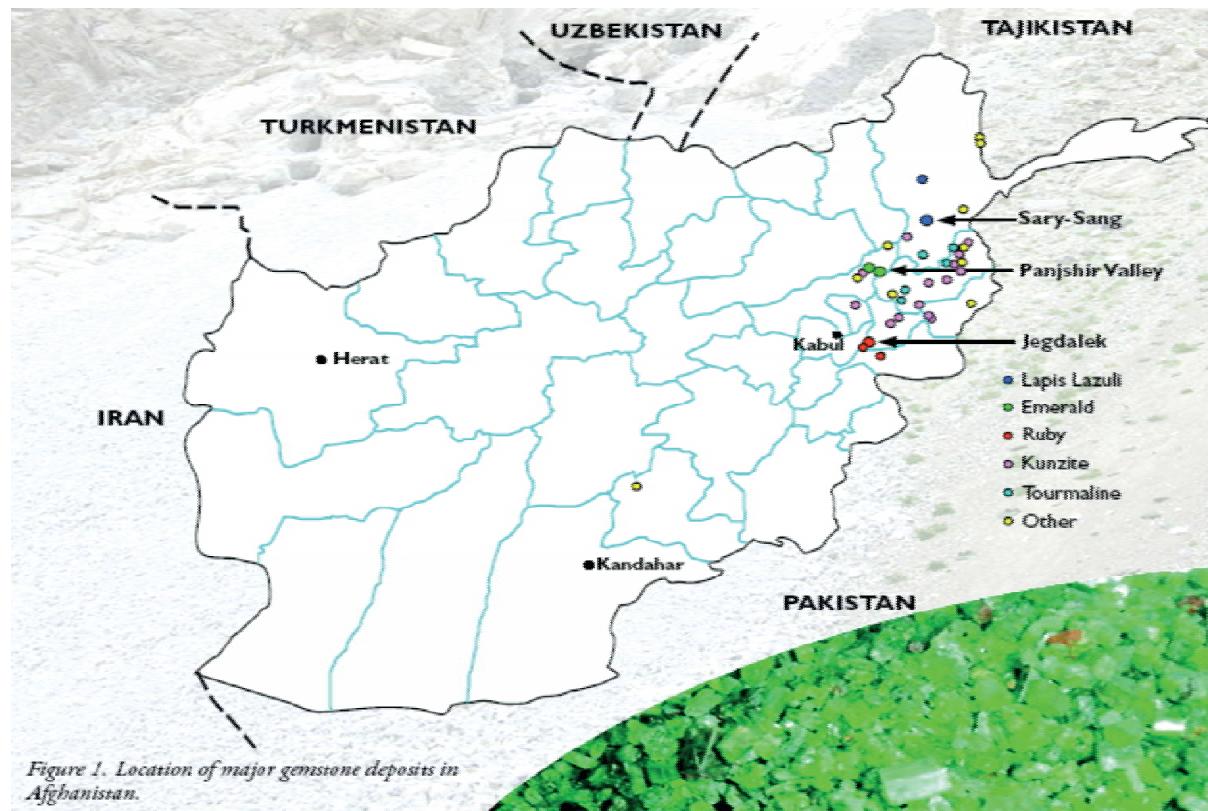
**Figure 3:** Copper Occurrences classified by deposit type (Source: MoM, AGS website)



**Figure 4:** Tectonic map of Afghanistan showing major blocks and faults and location of Iron (Source: MoM, AGS Website: [www.bgs.ac.uk/AfghanMinerals/mininfo.htm](http://www.bgs.ac.uk/AfghanMinerals/mininfo.htm))



**Figure 5:** Locations of major gemstone deposit in Afghanistan (Source: MoM, AGS Website: [www.bgs.ac.uk/AfghanMinerals/mininfo.htm](http://www.bgs.ac.uk/AfghanMinerals/mininfo.htm))



A geological survey lab complex was established which was unique of its type in the region and had the potentiality to analyze and study field models and there was no need to send materials abroad for analysis.

Pre-feasibility studies of oil and gas reserve began with cooperation from American experts in 1950. During 1956-1955, fragmented geological studies were carried out by German expatriates. Essential and scientific studies began in 1334 in Sare pul following the establishment of petroleum exploration department.

In 1958, a contract was placed with then soviet union for exploring northern oil and gas by Ministry of Mines. Romanis, czcelovakia and Sweden were cooperating soviet union in this contract. Following the completion of topgraphic and photo geodesy maps, the first CRELUS of Sweden began which followed the .5 D Russian drilling apparatus having explored the first oil field.

Subsequently, gas fields in yateem Taq, Khwaja Gogardak, Khwaja Bolan, Ziggeli and Bayan of Ghor as well as outskirts of Sherber Ghan exploration work has taken place. In the result of 35 years of work carried out by Afghan and Russian experts a total number of 500 field have been identified out of which 67 were extended with exploratory approaches. 8 Gas field were identified having the geological capacity of 180 billion cubic meters gas and exploitation capacity of 120 billion cubic meter gas.

Sar-e-pul oil reserves has been identified (44.5) million tons with the extractable reserves reaching 14.5 million metric tons. During the past years, about 5 oil and gas fields have been identified in Afghanistan. More work has been carried out at the vicinity of Oxus River, and Afghan-Tajik areas. During 1355-1356, geological activities have been conducted at Katawaz area with cooperation from experts of French Company. However, no remarkable work has been carried out in southwestern parts (Helmand) and the west (Herat).

## **INDUSTRY:**

Significant outcome achieved during last years are the establishment of fertilizer and power plants of Balkh with capacity of 110000 tons urea each year and 48 mega watt power per hour, establishment of Ghori cement factory with capacity of 100000 tons per year, Jabal Seraj Cement with maximum capacity of 3000 tons per year, Herat cement factory and Ghori 2 with capacity reaching separately 700-800 tons each day. 80 percent of the work was completed with its machineries being transferred, however, due to civil war in the country, it was unable to keep on functioning.

MoM has carried out major activities in terms of establishment of textile companies, food industries, industrial parks, Jangalak factories, however, now the ministry is not leading the above factories.

During the years before war, almost 2 billion cubic meters of natural gas, 100000 tons of chemical fertilizer (urea), 48 Mega Watt electricity, more than 200000 tons of coal, 100000 tons of cement, 120000 tons of salt, 100000 cubic meters of construction material and small amounts of azurite excavation, beret, abrak, talak and so on were obtained but due to consequences of three decade war, laboratories of mines survey, northern oil and gas establishments, stone process factories and Jangalak factories have experienced big losses.

## **IN THE HYDROGEOLOGY AND GROUND WATER SECTOR:**

The ground water keeping in mind its various kinds is of mine material and based on geology principles known as mineral reserves they are public properties in our country based on law, management, leadership, research, exploration, maintenance, utilization and using of them as natural reserves. These can be done through the MoM.

Management and usage of ground water keeping in mind its vital importance for drinkable water is of the programs known as the top agenda item of the MoM.

Our country due to its geographic and land locked situation is not very rich from ground water point of view and feeding these natural reserves are relying upon surface water and rainfall and snows which play an important role in increasing and decreasing the ground water table. With the influence of surface water under the ground, filtration and dissolution take place which play an important role in changing the physical and chemical characteristics and these changes can help change underground water to be usable and also unusable.

Water as a good solution through passing various levels of earth has different specifications. Therefore, study, research, exploration, analysis, determining of water is dependent on principles of hydrogeology which can be done through laboratories. In addition, hydrothermal and mineral water which emerge from geological practices also are part of ground water.

## **ELEMENT ANALYSIS:**

All projects related to country's geological studies, research, exploration and excavation of mineral reserves from the beginning up to now are funded through government in a form of development projects or enterprises. Based on the past regimes economic policies, private investment in this aspect has not been done and enormous funds allocated to projects have caused the government's inability of getting more success in this aspect and make use of natural resources. Therefore, it is known as a very important success of the MoM.

There is no doubt that our country with all these natural wealth is known as one of the poor countries in the world due to its weak economy

because the existence of overfilled resources are known as wealth only when they are made use of in a very logical way. From the view point of this ministry, for changing the natural resources to usable wealth, it is necessary to keep in mind the several processes and inter related factors as well as below coordinated activities:

- Existence of rules and regulations for regulating the aspects related to minerals and oil and gas (hydrocarbons)
  - Existence of sufficient funds for carrying out geological, research, exploration, development and utilization aspects.
  - Proper and suitable security condition for carrying out relevant aspects
- 

- Existence of safety and appropriateness for investment
- Having proper and necessary professional capacities and the ability of using the modern technology
- Establishing the transparent management of minerals as well as oil and gas Identifying effective ways to reach the target

With the establishment of new government and changing the economic regime of the country to free market economy and its confirmation in new constitution of the country, the activities of the MoM have been changed from producing policy to policy making and supervising entity.



## CHAPTER 2

# CURRENT PLANS

### THE LEGISLATIVE PROGRAM OF THE MINISTRY:

With the ratification of the new constitution based on which the economic regime of the country on free market policy aimed at improving the mines sector was established given the importance if this sector in alleviating poverty and providing the employment opportunities and the ensuring the national welfare, it was necessary that for obtaining the trust and confidence of the private domestic and foreign companies to protect their investments and to attract them to invest in the sector, it was necessary to prepare legislative documents for this sector.

To have legislative documents the MoM has taken the following measures:

1. Main rules, regulations and procedures which can guide the mineral sector reserves areas as below:

- Minerals law approval dated 25 /4/1384
- Hydrocarbons law (oil and gas) approval dated 3 /11/1384
- The regulation on hydrocarbons has been finalized and presented to the Ministry of Justice for approval
- Minerals regulation is being prepared by World Bank legal experts and advisors

▪ The gas distribution regulation for Afghanistan is being finalized and will later be presented to the MoJ for approval.

2. The MoM pursuant to article 9 of constitution for identifying the ownership and control of government over mines, the ways of maintenance, management, usage, applying and attracting the private investment in mineral affairs as well as managing other relevant activities has prepared the minerals and hydrocarbons laws and has ratified them through the Council of Ministers of the Islamic Republic of Afghanistan. In accordance with named regulations, the MoM is responsible for aspects such as identifying ownership, control, research, exploration, utilization, excavation, enrichment, process, shaping, transporting, marketing, sale and export of minerals under the ground or on the surface and in the territory of the country.

Ratification of these laws will legalize the mining activities and will bring about sound and proper environment which could pave the way for further domestic and foreign investment. With attracting investment in natural resources projects in few years this sector can play an important role in creating employment opportunities, alleviating poverty, improving the public welfare and country's economy.

Based on the laws and the serious needs, the MoM has prepared the new structure which is responsive to achieving the goals in this sector and

after getting approval from concerned authorities in the country has taken appropriate steps in executing the reforms based on new policy and in consultation with the World Bank. (Graph is attached)

With the ratification of mineral and hydrocarbons law, all activities of the MoM especially in terms of delivering the relevant aspects for utilization to private sector will be done in accordance with enforced laws. These laws for the first time have provided an opportunity to enterprises to invest in mining sector.

3. The first and second phases of PRR in the MoM have been completed. Currently, the ministry is recruiting staff through open process. MoM will attract the cooperation of WB in completing the minerals regulations. In this case a very good opportunity for better implementation of law will be provided.

- The MoJ will cooperate in terms of finalizing and ratifying the hydrocarbons law because this regulation will be completed in coming few days and is presently under review by Taqnin Department of MoJ.
- ADB has helped the MoM in completing the draft law of Afghanistan Gas and the process is currently going on with consultations from both parties.

## CAPACITY ANALYSIS

The MoM is one of the ministries which to some extent have fully professional personnel but as far as the modern technology is concerned, they are in rather lower level. The reasons of backwardness can be three decades of war and being away from modern technology. To resolve this, we are in need of cooperation from donor countries to organize courses, workshops, seminars, conferences, scholarships abroad and direct visits in active projects out of the country.

The MoM proposes capacity building for its staff members. In the first step to implement the hydrocarbons and mineral laws, it is planning to carry out aspects such as research, exploration, excavation and utilization through private sector. Bidding processes, competing tender documents, evaluation of documents, contracts, and finally submitting them to companies all require experience keeping in mind the rules and regulations.

The MoM has to some possible extent created agencies responsible for minerals within the ministry which are: Cadastre Mines Agency, Mines Control and Evaluation Agency and Environment Preservation Agency but as these agencies are in the first phase of their activities, they are in serious need of training.

In geological studies of the country, the Afghan Geology Survey Agency does not have any problems in terms of professional personnel but from the view point of lack of technical laboratories to conduct geological studies as well as enough funds for carrying out its activities face serious problems. We would like to attract the attention of government and donor agencies to help in this aspect so that we can be a strong and self sufficient entity like national geo science agency across the country.

Although the USGS, BGS and WB specialists have so far provided useful cooperation but there is a need for the continuation of cooperation. The USGS has done some work with regard to conducting air evaluation of mines through implementing geophysics survey and there are hopes about existence of minerals across the country of which solids and hydrocarbons have been discovered in five parts of the country.

With the completion of these studies, the anticipated geological survey work will be started broadly in the near future to identify real reserves.

- The capacity building programs through WB and Independent Commission for Administrative Reform are currently being developed to solve the capacity development issues.
- The rehabilitation of laboratories in Geo engineering research agency and hydrology services in the ministry are of the main needs which need prompt equipping because carrying out their activities never can be effective and useful in the absence of such equipment.

In the current situation, the technical capacity for rehabilitation and repair of mineral gas wells exists but the research tools of geo physics industry do not exist.

## **SECURITY**

As mineral reserves mostly are situated far from cities, investment require lasting security but as

far as it is observed proper security does not exist and in the current situation due to lack of security in some areas some minerals are misused illegally which not only is a misuse to public wealth

but also the destruction of mines.

The MoM wants that all mines, natural resources are fully secured and are out of the control of robbers and power holders. In addition, lack of security in some parts of the country has affected some research and study programs that the government should strictly consider this issue. This is happening in a situation that currently the MoM cannot put in practice its programs due to lack of security.

The geological survey group which is ready for travelling and to get sampling in target areas can not do so due to lack of security and confidence and even the areas which are being misused can not be supervised by officials due to lack of security.



## CHAPTER 3

# STRATEGY TO ACHIEVE THE EXPECTED RESULTS

The suffered society and people of Afghanistan during years of internal unrest have endured a lot of suffering and annoyances. Natural resources and wealth which is an enormous natural wealth and belongs to the people of Afghanistan has also been affected during years of war and unrest.

1380 opened new doors of hope to Afghans and there is a long way ahead to reach the target.

Our people hope that with making beneficial plans and with implementing the long term strategies and plans in peace, security, improving the economic infrastructure will possess a dignified and peaceful live.

It is clear that for achieving each target a pre arranged logical and suitable strategy is required so that we can achieve goals in the light of the strategy.

Therefore, MoM recognizing the importance of the issue to effectively utilize the natural resources presents the following strategy.

### GEOLOGICAL ASPECTS PART:

- Implementing the PRR in MoM to establish a modern and effective administration
- Planning of exploration aspects, mapping, surveying of minerals as well as oil and gas, collecting geological and geo physical data
- Developing the mineral, hydrocarbons and hydrogeology sectors through private sector
- Managing primary final exploration aspects and identifying the reserves
- Developing and improving the geology affairs through survey and conducting regular and quality research and putting at access the new geo science information to agencies interested and or involved in mining.
- Conducting studies regarding geological activities
- Collecting geo science information through contracting and private sector companies as well as explorative work of the geology survey working groups, creating databases and keeping the information
- Capacity building of the geology survey staff and the effectiveness of their activities
- Establishing a proper working environment as well as providing necessary facilities aimed at improving the skills of personnel
- Standardizing the working aspects of geology survey personnel
- Equipping the geology survey laboratories for recognizing, analyzing the elements of mineral and hydrocarbon material
- Strengthening links with donor countries and attracting their cooperation for improving the work quality of geology survey of Afghanistan

## IN MINERALS ASPECT

MoM for successful implementation of the Afghanistan National Development Strategy which has specified key conditions for a peaceful and developed nation from the economic and social point of view deems it its responsibility to play an important role in utilizing from mineral reserves in a sustainable manner and plans the following measures to achieve the above goals.

- Completing the legislative aspects of the ministry
- Design and implement the mineral policy including encouraging the private investment in mineral activities and its development in the country
- Recognizing and collecting the required information aimed at submitting the mineral reserves for investment
- Creating a proper and confident environment for private sector investment based on minerals law
- Collecting information and preparing the database for discovered reserves
- Encouraging the mining industry in small and medium sizes
- Granting, extending and stopping the licenses for mineral related activities (mining)
- Preparing the bidding documents and contract documents for discussion, study and ratification
- Identifying the prohibited areas
- preparing the procedures and guidelines which are responsive to reducing the losses during extracting the mines
- Ensuring transparency in bidding processes

and choosing a winner and contracting

- Specifying the percentage of royalty in natural status and making sure about its collection
- Control and inspect the performances – contractors based on contract
- Control and evaluation of contractual performances regarding environmental protection and communities in accordance with the law.
- Technical evaluation to rehabilitate and plan to reduce the impacts of mineral activities..
- Technical evaluation of commitments in terms of environmental protection
- Development of mineral processing industries in the country through private sector

## OIL AND GAS (HYDRO CARBONS)

Strategic goals of ministry of mines for the exploration and exploitation of oil and gas from these resources with the economical costs are as follow.

- Prepare Gas law and regulation for ( transformation, distribution and consumption)
- Classification of gas and oil fields to specific and separate blocks. for further exploration of activities in the country.
- Performing some initial activities to complete the information about gas and oil fields which are not fully studied yet.
- Identification of gas and oil fields blocks in order to submit them to private sector considering the enabling environment.
- Submitting of oil and gas fields to private

- sector in accordance with international benchmark and transparent bidding among the countries in order to explore and exploit it according to international standards.
- The beginning of initial survey in the Kafawaz, Helmand and Sistan.
- The draft of planning for gas distribution by private sector to the provinces in the country
- Professional Capacity Building of workers in the areas of gas and oil
- Creation of new organizational structure in the section of oil and gas which could be responsive for all activities and needs of ministry of Mines.
- Leading and controlling of all resources that have been functioning for the effective use of water.
- Special maintenance of underground water and its effective use
- Determine the quality of underground water in accordance with international standards.
- Distribution of license for private sectors which are active in the underground water supply.
- Regulating water affairs related to secure drinking water with cooperation of MOH for the community people especially the most populated areas of the country.
- Preventing the pollution of underground water
- Avoid the illegal use of underground water which causes water pollution.
- Rehabilitation and establishment of hydro geological stations for the collecting information and important figures.
- Prevent activities which cause water pollution.
- Provision of opportunities for the private sector activities in the underground water section
- Ensure work relations and coordination of private sector programs with the MOH, MRRD, MAIL, MWE and other line managements.
- Regulating efficient programs of raising public awareness about usage of underground water.

## UNDERGROUND WATER HYDROLOGY

Water legislation which includes both surfaced and ground water has been passed all over the country. MOM's strategy for the

enforcement of this law and better regulation of ground water resource is as follows.

- Drafting of master plan related to the development of underground water in accordance with law.
- Draft and provide regulation for underground water management.
- Provision and collection of brief information about the current condition of underground water in the country.
- Reconstruction of Hydro geological research unit and geo engineering of MOM resulting in the elimination of the crisis in the country.
- A comprehensive study of underground water especially areas that are vulnerable from lack of drinking water.



## CHAPTER 4

# IMPLEMENTING MINES STRATEGY

### KEY MOM PROGRAMS:

- PRR
- Implementing (PRR)
- Legislative affair completion program related to MOM
- A comprehensive geological study follow-up program in the country.
- Exploration and exploitation of mineral resources by private sector or geology survey of MOM.
- Exploration, extraction and exploitation program of gas and oil fields in the country by the government or private sector.
- Capacity building program.
- Long term geo science research projects
- Reconstruction program, equipping of laboratory and technical section of the ministry.

The stated programs are selected based on the needs and necessities to determine the direction of MOM's activities as well as reconstruction and strengthening of private sector infrastructure in the country. By exploitation of natural resources in the country, the implementation of this program can support Afghanistan in the implementation of ANDS and the development of national economy. For details regarding outcomes and monitoring of the sector refer to Annex I and II (Action Plan and Monitoring Matrix)

Each of the above programs includes specific working projects which are defined briefly as follows.

### IMPLEMENTATION PROGRAM OF ADMINISTRATIVE REFORM OF MOM:

Based on the last polices, MOM has undertaken all activities related to mine directly and practically from beginning of (geological studies) till the end of (exploitation of natural reserves). With the change in economic policy of the government and mineral law and oil and gas (hydro carbon) which is enacted based on economic policy and constitution of the country a general change is seen in the working direction of MOM. On the basis of the above, from now on, MOM will act as a policy maker and controller of related affairs.

Currently organizational and management structure of MOM requires to be restructured on the basis of strategy and policy which was established in accordance with mineral and hydrocarbon law in the ministry

The first and second phases of PRR in the MOM is completed and currently MOM is hiring employees through an open process. MOM has secured the cooperation of World Bank in the completion of Mineral regulation through which a better law enforcement environment will be provided.

The implementation of the second stage of reform in MOM for the follow up and resumption of

geological studies using modern approaches which can help exploitation and development of natural resources and economical growth of the country and let the country be the owner of geo science management. The implementation of this project as is considered, will take 17 months.

#### **LEGISLATIVE AFFAIRS COMPLETION PROGRAM OF THE MINISTRY:**

It is clear that the existence of laws and regulation are considered important in order to have access to all related affairs especially MOM which has planned to give opportunities to all enterprises to invest in the field. Further to the determination of the roles and responsibilities, the existence of laws also includes rights and duties which is indispensable in encouraging foreign and internal investors in MOM sector.

As of now, the MOM with cooperation from WB and ADB has managed to prepare Mineral and Hydrocarbons laws in accordance with national and international standards and got it approved by the cabinet.

The existence of stated regulations has helped to attract and encourage private sector and guaranteed a peaceful and confidential environment to create opportunities of natural resources development and its exploitation in Afghanistan.

- Oil and Gas regulation (hydrocarbons) has been prepared with cooperation from WB experts and lawyers for better implementation of provisions within the hydrocarbon law and provide better opportunities while maintaining the national interests of the country in the areas of investments on oil and gas projects. Following the overall review by experts of MoM and MoJ, the process of the regulation is underway in Taqneen Department and will be sent to related authorities for ratification.

- Work on the draft of mineral regulation has started with cooperation of experts and lawyers of World Bank which will help the MoM to sign agreement and hand it over to private sector based on international standards.

MOM requires the cooperation of line authorities especially World Bank in order to speed up the process and complete it with its ratification until the end of 1386

Developing Afghanistan Draft Gas Law which primarily includes activities related to management, transformation, distribution, reservation, selling, expenditure of gas and revenues is prepared by the Asian Development Bank which is currently under discussion for further enrichment. This law creates opportunities of further investment and obtains confidence of private sector companies for investment, purchasing and distribution of gas in the country. And also these all occur at a time when MOM has planned to submit (3) gas blocks through a open bidding process to private sector.

#### **FOLLOW- UP PROGRAM AND RESUMPTION OF GEOLOGICAL STUDIES IN THE COUNTRY.**

Five decades have passed since the geological studies started but 10% of the country's terrain hasn't been studied yet so it is the duty of MoM to complete the geological studies briefly and comprehensively in order to discover reserves. Discovering numerous reserves increase the hope of experts to have access to those resources. Resumption of studies not only need professional knowledge but also sufficient fund for provision of supplies. The existence and equipping of geological survey of Afghanistan is really important for the MoM in order to better explore natural resources especially in initial studies of information collection which is urgently needed to attract investment in mining sector. MoM

also considers this very important to rebuild the geological laboratory of Afghanistan based on international standards, and equip the geological survey groups of geological directorate with needed vehicles and equipments with fund to start the activities on time.

MoM has got some specific plans with the cooperation of donor countries that have been mentioned in the section of the projects in this ministry.

#### **EXPLORATION AND EXTRACTION OF MINERAL RESOURCES:**

Pursuant to the economic policy of the government, the mineral law as well as MoM strategy while bearing in mind limited resources, MoM will invest on mining, and exploration and exploitation of minerals projects for developing national economy in the near term through conducting geological surveys primarily through private sector.

In order to implement the above goal, while maintaining national interests of the country within the framework of laws which are in force for exploration, exploitation and mineral resources development, Ministry of Mines intends to secure private investments in this regard and has kicked the following projects:

- 1- Contract out Ghori 1 and 2 Cement manufacturing factories to the private sector.
- 2- Complete the process of contracting out Jabal Seraj Cement manufacturing factory to the private sector.
- 3- Complete the process of contracting out new cement manufacturing factory in Herat province.
- 1- Contracting out cement manufacturing factories to private sector takes place in a time

where the country moves towards rehabilitation and severely need construction materials particularly cement than before. During the past 5 years, A significant amount of low quality but expensive cement were imported from abroad which has adversely affected national revenue level. Production capacity of Ghori 1 and Jabal Seraj factories was far low and there production was no longer an economical one. Contracting out these factories to the private sector will enhance the capacity of the factories which will result in generation of significant amount of revenues such as royalty, taxes and on the other hand addresses the shortage of cement in the country.

#### **DELIVERING THE MINES TO PRIVATE SECTOR**

A. Keeping in mind that the country is in urgent need of fuels to build the capacity of coal production, the Ministry of Mines has delivered the mine to private sector under conditions which can better strengthen national revenues and resources.

The excavation and utilization process of the named mines using the contemporary methods will be carried out based on the conditions set forth in the contract. In addition, all mine workers have been recruited by the contracted company. Based on the estimates carried out the incomes obtained from royalty collection, rights of rent and taxes is higher than the government capacity to produce coal because modernization of mines in upgrading the production level plays an important role. This is the responsibility of the company under the conditions set forth in the contract.

B. Under the designed plan by the cabinet of Islamic Republic of Afghanistan, the Ministry of Mines is planning to put into utilization new coal mines in order to provide coal for producing electricity.

C. Hirat Sabzak Coal Mine has been delivered to private sector based on contract. Coal is being extracted from this mine and used for various purposes.

D. Khost Kromit mine has been contracted with private sector and excavation and utilization from this mine will begin which can contribute to providing employment opportunities. On the other hand good incomes of royalties, taxes and the rights of rent can be obtained.

E. The past two year experience which can describe investment in mine sectors mostly shows that small and seldom medium investments take place. This issue directly relates with encouraging small and local mine industry. Individuals constantly refer to the ministry and ask for necessary information in this aspect. This necessitates the study and evaluation of mineral resources such as coal, cement raw material, decorative stones, precious and semi precious stones, water and metal minerals. Therefore, it is necessary to conduct some projects focused on named resources through geological surveys. We are sure that executing these projects can provide

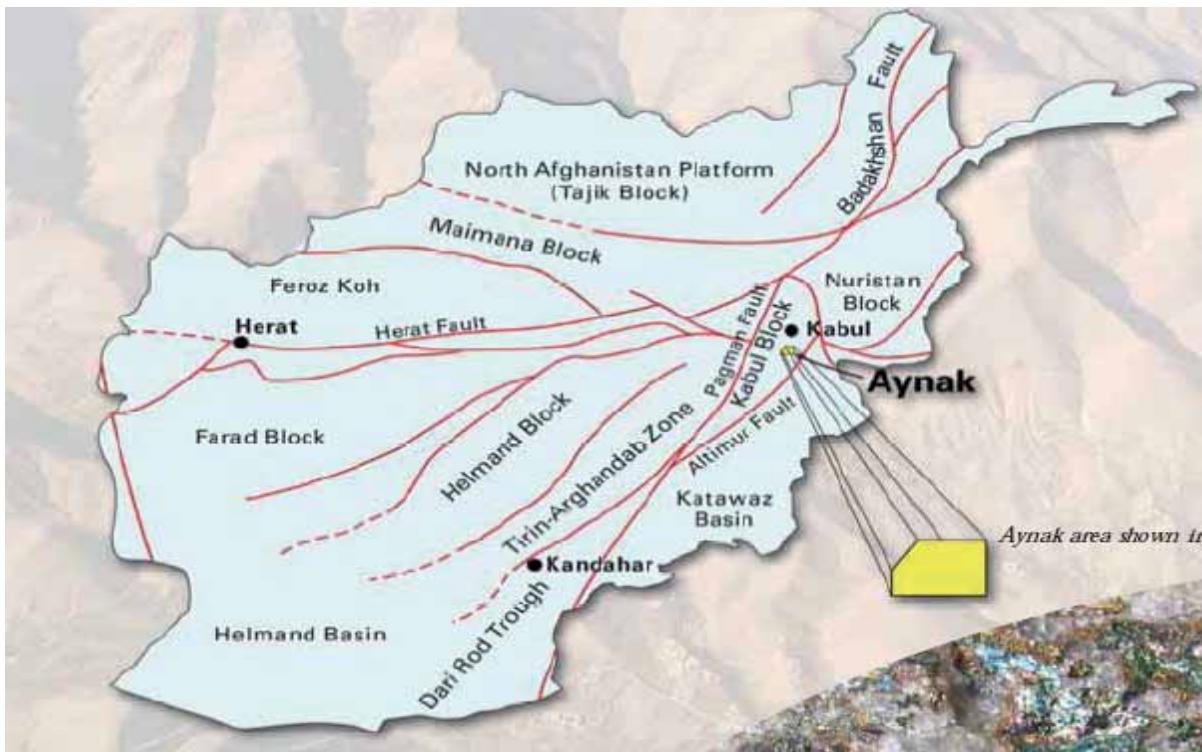
an opportunity for expanding the investment in this sector as well as creating mine industry.

F. Ministry of Mines is planning to deliver to the private sector other coal mines of the country based on mineral laws and through open and transparent bids to be ready for utilization.

G. Study of ground water in Kabul, Mazar-i-Sharif, Hirat and Kandahar aimed at determining mineralization and its amount, identifying the ground water for fulfilling the above target is of the responsibilities of the ministry.

H. In order to implement the Afghanistan National Development Strategy for developing the national economy through utilization of natural resources, it was decided that the Aynak copper mine should be delivered to private sector based on mineral law provisions through international bids. The bid process of the named mine has been completed and a winner and precautionary company has been identified and talks with the company regarding the contract continue. Below map shows Aynak locations in Afghanistan.

**Figure 6: Tectonic map of Afghanistan showing major blocks and faults and location of Aynak.**



Source: MoM, AGS website: [www.bgs.ac.uk/AfghanMinerals/docs/Aynak\\_A4.pdf](http://www.bgs.ac.uk/AfghanMinerals/docs/Aynak_A4.pdf)

Study of ornamental as well as construction stones industry which is currently developing is one of the programs of the ministry.

The country enjoys having enough marbles, granites and other ornamental and construction stones. Kabul as well as other city markets is replete with polished and low quality stones which have been imported from neighboring countries.

Parallel with providing the legal and security situation for improving and processing of the stones, it is important that these valuable economic stones are studied from quality, technical and construction points of view.

Below map shows marble producing provinces.

Figure 7 on the next page: Map of Afghanistan showing provinces that are known to be producing marble (source: MoM, AGS Website)



J. Precious and semi precious stones for being practical in local use and providing employment opportunities in mine industry, study and providing geological and construction maps from mine areas can help in investment and improving the mine sector.

K. More than tens of construction material reserves are currently having excavation and utilization activities based on contracts and protocols are underway in many parts of the country. The relevant aspects are carried out by excavation enterprises department of the MoM and net a large amount of money to government.

L. Based on the government economic policy and the country's need to salt, the MoM based on mine material law has delivered to private sector for excavation and utilization purposes the salt mines including Andkhoy, Taqcha Khana,

Kalafgan, Chal and Namak Sar mines of Hirat province which can produce almost 194000 tons of salt. Through this system the utilization and excavation have nearly been mechanized and salt purification companies by private sector aimed at providing clean and purified salt will soon be activated through which country's need to salt will be met and the chances of exporting salt to neighboring countries will be created.

#### **RESEARCH, EXPLORATION, EXCAVATION, DEVELOPING AND UTILIZATION OF COUNTRY'S OIL AND GAS RESERVES:**

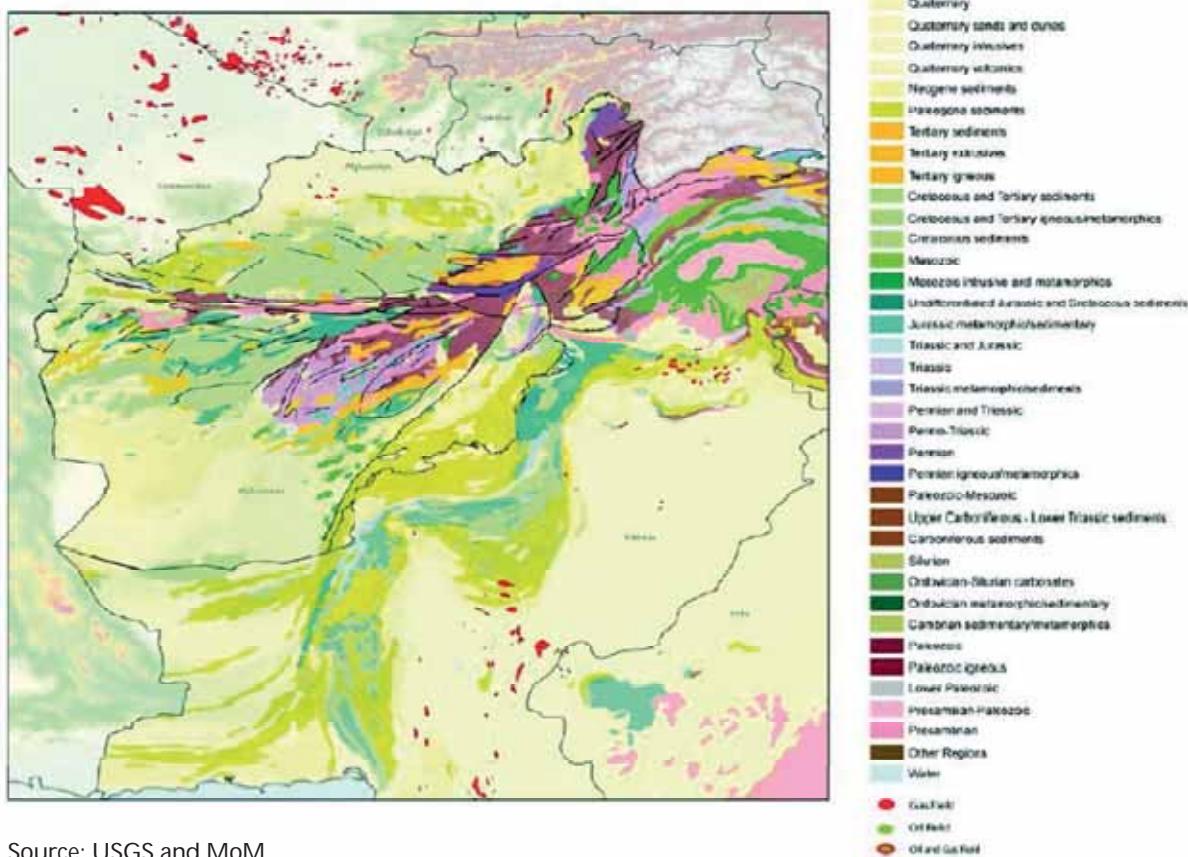
In spite of that the northern region Oil and Gas Research Department with its broad structures exists within the MoM, the department used to be funded through development budget having

enough technical possibilities and funds as an explorative project. But currently due to lack of technical equipment and enough funds, its activities covering research activities as well as exploration of oil and gas reserves have become limited and even stopped and with an inflated inactive structure it has relied on government

operational budget. Although its activities were of high value before the civil war, its activities which mostly were focused in northern provinces have discovered and recorded 8 gas mines and 6 oil mines. Hundreds of other possibilities for discovering oil and gas mines

**Figure 8.**

**Oil and Gas Fields and Generalized Geology in the area of Afghanistan**



Source: USGS and MoM

have been identified which require more research aspects which due to lack of possibilities in the current situation can not be carried out through MoM. Of the discovered mines excavation is carried out only from three gas mines but no excavation has been done from oil mines.

Therefore, the MoM keeping in mind the urgent need to energy and gas and using natural gas for producing electricity has divided oil zones of

Amo river into various blocks so that it can deliver each block to private sector for conducting research, exploration, excavation as well as utilization and further production of natural gas based on hydrocarbons law so that excavation wells of mines under utilization which currently have lower level of production due to technical problems are rehabilitated and repaired. Oil and Gas Fields are shown in the below figure.

The MoM is planning the below projects design aimed at increasing the amount of gas and oil. A. Regarding the research and exploration of gas reserves, specific plans are going to be made by USGS in oil and gas zones of Afghanistan and working groups in this regard have been created so that sampling from target areas can be done.

The air research program which is carried out by the United States will guide us in discovering the right reserves of oil and gas and in our future activities. The interpretation of the results of the air research is being worked on by USGS.

B. In development projects of the MoM, projects of Geophysics have been foreseen. Geophysics studies are beneficial in developing the oil and gas reserves implementation which will bring about useful results. C. In order to increase the level of gas from mines being extracted (Khwaja Gogerdak, Jarqodoq and Yatem Taq), the repair of gas wells was supposed to be done three years ago with the help of loan # 1997 from ADB. Due to some problems this project has not been

implemented yet and recently based on the pledge of USAID regarding the repair of 7 wells aimed at completing the required amount of gas in thermal power project in Sheberghan is underway and ADB is also pledged to help in implementation of the project repairing the gas project keeping in mind the same conditions applied by USAID.

D. Currently, the MoM has the bid documents for two blocks of gas (Jangagal Kalan and Bashi Kot), two oil mines (Angot and Qashqari) the work on which is underway with the help of Norway experts and will be delivered to private sector.

E. With renting of the gas mines to private sector, technical gasification of Afghanistan cities will begin where Mazar and Sheberghan will be in the first step. This will be done by private sector because with the excavation of new gas mines and the excessive production, the capability for spending also needs to be developed.

F. The transfer, distribution and sale law of gas was underway with the help of Gustafson Associates and will be put in practice soon.

## CAPACITY BUILDING PROGRAM

Although the MoM is enjoying having educated, professional and technical personnel but due to three decade civil war in the country these experts could not follow steps of modern technology and are in need of training, so now that the ministry cadres are trained in relevant fields and are able to carry out their responsibilities, especially when the ministry has changed from a producing entity to a policy making and leading organ and implements the minerals and hydrocarbons laws. Although the MoM with the cooperation of donor countries and organizations has had activities enriched by trainings, seminars, conferences and workshops conducted during the past four years and providing short term scholarships through USGS and BGS, Administrative Reform

Commission and other organizations, still there is need that these opportunities continue.

One of the main problems in the current situation can be observed when the MoM for the first time is experiencing the presence of enterprises in the mines sector and in this aspect most of the experts of the MoM need training so that they are able to complete the above processes successfully.

### ESTABLISHING LONG TERM GEO SCIENCE PROJECTS

MoM within the Geology Survey Department in various aspects related to geology can begin research projects. These projects from scientific and practical points of view can be effective in developing the aspects related to geology in Afghanistan.

The research project with installation of new earthquake measurement tools, magneto metric, radio metric and other relevant studies in various parts of Afghanistan will be started.

Research results can have a practical value in determining the breakages and technical specifications of Afghanistan and as such by informing people of the risks in mines and with developing measures, the risks and losses will be foreseen and decreased.

### REHABILITATION AND EQUIPPING THE LABORATORIES AND THEIR TECHNICAL ASPECTS:

It is clear that geological and mineral studies need laboratory analysis and experiences as a necessary component. The geology survey laboratories which used to have a very high capability currently lack all operational possibilities of laboratory.

Equipping these laboratories not only needs modern instruments but training of personnel is also of an equal importance.

Therefore, the laboratory project has been designed in a way that parallel with equipping the required instruments training of experts also should start because experts should have the ability to use the instruments after training is completed.

In addition to constant geological, mineral research and mapping, a complete laboratory is required in which various kinds of stones,

industrial and valuable minerals, water, coal, oil and gas could be studied and analyzed.

Therefore, the MoM requires help from relevant institutions and donor countries.

## PRIORITIZATION OF THE PROJECTS

No.	Project Title	Projected fund in Million dollars
1	Administrative reform implementation program	10
2	Finalize legislative affairs and prepare bidding documents	-
3	Geological studies comprehensive resumption and follow-up at the national level	55
4	Exploration of minerals	70
5	Exploration of gas and petroleum fields ( hydrocarbons)	80
6	Capacity building program	16
7	Establish long term geoscience research projects	15
8	Rehabilitation program and mobilization of labs and their technical units	308
	<b>Total</b>	<b>266,8</b>

# ANNEX I: NATIONAL STRATEGY ACTION PLAN

PILLAR : INFRASTRUCTURE SECTOR : MINES AND NATURAL RESOURCES		Objectives or Outcomes	Policy Actions or Activities	Category	Time frame	Responsible Agency
	Geophysical and geological information available	Planning exploration activities, mapping, survey of minerals, oil and gas, collection of geophysical and geological information	Development	Continued		MoM
	Increased access to water resources	Conducting geological research studies	Development	Continued	1388-1392 (2009-2013)	MoM
		Master plan on underground water development	Development	1387-1388 (2008-2009)	MoM, other line ministries	
		Manual for underground water management	Development	1387-1388 (2008-2009)	MoM	
		Rehabilitation of the Hydrological and Geo-engineering research sections	Development	1387-1389 (2008-2010)	MoM	
		Issuance of permit to Private Sector who work on underground water	Development	1388-1389 (2009-2010)	MoM	
		Rehabilitation and establishment of new Hydrological Stations for collection of the necessary information and figures	Development	Continued		MoM
		Enhancement of working relationships with related line ministries for water	Development	Continued		MoM
	Increased Private Sector Investment in mining sector	Design and implementation of Mineral policy	Legislation	1387-1392 (2008-2013)	MoM	
		Preparation of Gas Law and Manual	Legislation	1387-1388 (2008-2009)	MoM	
		Analysis study of loss and damages in mines extraction	Development	Continued		MoM
		Categorizing oil and gas fields to gas blocks for better management	Development	Continued		MoM
		Leasing of oil and gas blocks to privates sector for research and study	Development	Continued		MoM
		Establishment of new organizational structure for gas and oil management	Institution Building	1387-1388 (2008-2009)	MoM	
		Design of plan for gas pipeline grid to provinces	Development	Continued		MoM
		PRR Implementation	Institution Building	1387-1388 (2008-2009)	MoM	
		Capacity building of Survey and Geological staff	Institution Building	Continued		MoM
		Equipping labs of GSD	Institution Building	First Phase will be done by 2008 and then Continued	MoM	
		Standardizing working a capacity of Geology staff	Institution Building	Continued		MoM
		Coordination with different countries in raising capacity of the public sector	Institution Building	Continued		MoM
		Introduction of measures to ensure environmental concerns taken care of.	Institution Building/ Env. Cross Cutting Issues	Continued		MoM
		Conservation of Biodiversity in implementing mining projects	Development/ Env. Cross Cutting Issues	Continued		MoM

PILLAR: INFRASTRUCTURE SECTOR : MINES AND NATURAL RESOURCES		Policy Actions or Activities				Category		Time frame		Responsible Agency
Objectives or Outcomes										
	Promotion of regional cooperation to facilitate various projects under the mining sector		Development / RC Cross Cutting Issues			Continued				MoM
	To mainstream into all administrative reform programs measures required to address the systems and incentives promoting anti-corruption within the public administration system and Development Activities.		Institution Building / AC Cross Cutting Issues			Continued				MoM
	To maintain the highest level of transparency, accountability and integrity in the relationship between the public and private sector.		Institution Building / AC Cross Cutting Issues			Continued				MoM
	Gender mainstreaming in the policies in the mining sector.		Development/ Gender Cross Cutting Issues			1387-1392 (2008-2013)				MoM
	Priority to areas having substantial narcotics cultivation to promote economic activity to generate alternate livelihoods		Development/ CN Cross Cutting Issues			1387-1389 (2008-2010)				MoM

## ANNEX II: MONITORING MATRIX

PILLAR: INFRASTRUCTURE SECTOR: MINES AND NATURAL RESOURCES		Indicator		Baseline		Targets	
Expected Outcomes		Approval of Mineral Resources	Gas Regulations	Minerals and Hydrocarbons law has been passed		Creating enabling environment including legal one for increased investment in mining sector (2013)	
Increased Private Investment in mining sector	Strong regulatory framework in place	Approval of Hydrocarbons Regulations		In current year (1386) net revenue of ministry of mines is US\$ 32 million		Increase net revenue of ministry of mines to US\$ 1 billion after seven years to US\$ 1 billion	
Geophysical and geological information available	Geophysical and geological information available	Survey of Minerals and Hydrocarbons		Surveys conducted in this regard cover only 10% and 4% of country's total hydrocarbons and minerals respectively		Survey of 5% area of country's natural resources (minerals and hydrocarbons)	
Increased access to Gas resources	Renovation of Shaberghan gas network and extension of Mazar-e-sharif gas pipeline and its network			Currently consumers of Afghan gas is less than 1% of total population		Increasing gas consumers to 5% of total population	
Increased access to water resources	Increased access to safe drinking water			Partial study of water in Kabul river basin has been done, but the water studied do not fulfill the need of Kabul population.		Availability of under ground water with quality and quantity	
				Recently assessment study in Kabul river basin has been started through research and Geo engineering enterprises with support of JICA and USGS			

### ANNEX III: LIST OF PROGRAMS AND PROJECTS

S/N	AFG Budget Ref	Programs / Project title	Project Duration		Breakdown of Requirements (US\$ Millions)				Total Requirement (US\$ Million)	Total Funding (US\$ Million)	Gap (US\$ Million)	Major Donors	Core External	Responsible Agency
			Start	End	1387	1388	1389	1390	1391	1392+				
1	AFG/0726501	Procurement of sulfur segregating machine	1386		2.000					2.000	0.000	2.000	Core	MoM
2	AFG/0745701	Equipping of laboratories of Geological Survey Department for dissecting and analysis of field materials	1385		0.750	0.50				1.250	0.000	1.250	Core	MoM
3	AFG/0804301	Construction of mines and mineral process deportment building in heart	1387		0.200					0.200	0.200	0.000	AFG	Core
4	AFG/0804401	Preparation of Tender document for Hajigak mine and classification of sediment areas of oil and gas in the North	1387		3.000	2.00				5.000	1.000	4.000	ARTF	Core
5	AFG/0804501	Study and assessment of Afghanistan survey and geology deportment projects	1387		2.000					2.000	0.000	2.000	Core	MoM
6	AFG/0804601	Control and supervision on Implementation of Ainak exploitation copper mine	1387		1.000	1.00	1.00			3.000	1.000	2.000	WB	Core
7	AFG/0746901	The Study on Groundwater Resources Potential in Kabul Basin	1386		0.02	0.02	0.00			0.038	0.038	0.000	JPN	External
8	AFG/0818301	OIL FOR DEVELOPMENT	1387		1.00	1.00	1.00			3.000	3.000	0.000	NOR	External
		Total:			9.97	4.52	2.00			16.488	5.238	11.250		

## ANNEX IV: LIST OF PROVINCIAL PRIORITY PROJECTS (MINES SECTOR STRATEGY)

No.	Project Name	Project Location	Responsible agency	Project Duration (year)	
				Start	End
1	Excavation of coal mine in every district of Bamyan.	Bamyan	Private Sector	1387	
2	Extraction of limestone, marble quarry and Coal mines in Shotol district.	Pajshir	Private Sector	1387	
3	Extraction of Precious stone mine in Anaba district (one project)	Pajshir	Private Sector	1387	
4	Establishment of a committee of Geological Scholars to search & survey important mineral mines in Paktia province (50 km <sup>2</sup> of land).	Paktia	MoM	1387	



Afghanistan National Development Strategy (ANDS)  
1387 – 1391 (2028/09 – 2012/13)

This Five year National Development Strategy Focuses on Security, Governance, Economic Growth and Poverty Reduction. The Document is divided into five volumes. Volume I: Main Document – details the vision, Goals, Policies, Macroeconomic, poverty profile, aid Effectiveness, Implementation and Monitoring Frameworks; Volume II: Security and Governance Pillars – details Security, justice, Rule of Law, human Rights, public Administration reform and Religious Affairs; Volume III: Social and Economic Development Pillar – Infrastructure and Natural Resources Sub-Pillar, details Energy, Transport, Water Resource management, Information and Communication Technology, Urban Development and Mining Sectors; Volume IV: Social and Economic Development Pillar – details Health and Nutrition, Education, Culture, Media & Youth, Agriculture and Rural Development, Social protection, Refugees, & Internally Displaced Persons, and Economic Governance & Private Sector Development Sectors; Volume V: Cross-Cutting Issues – details Capacity Building, Gender, Counter Narcotics, Regional Cooperation, Anti-Corruption and Environment.



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