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REPUBLIC OF CHAD

**PRIORITIES FOR ENDING POVERTY AND BOOSTING
SHARED PROSPERITY**

SYSTEMATIC COUNTRY DIAGNOSTIC (SCD)

September 2, 2015



REPUBLIC OF CHAD
GOVERNMENT FISCAL YEAR
January 1st – December 31st

CURRENCY EQUIVALENTS
(Exchange Rate Effective as of August 15, 2015)

Currency Unit	=	Central African CFA Franc (XAF)
US\$1.00	=	XAF 590

WEIGHTS AND MEASURES
Metric System

ABBREVIATIONS AND ACRONYMS

ASA	Advisory Services and Analytics
BEAC	Bank of Central African States (<i>Banque des Etats d’Afrique Centrale</i>)
CAR	Central African Republic
CEMAC	Economic and Monetary Community of Central Africa (<i>Communauté Economique et Monétaire de l’Afrique Centrale</i>)
CES	Constant Elasticity of Substitution
CGE	Computable General Equilibrium
CPIA	Country Policy and Institutional Assessment
DHS	Demographic and Health Survey
DTIS	Diagnostic Trade Integrated Study
ECOSIT	Chadian Consumption and Informal Sector Survey (<i>Enquête sur la Consommation et le Secteur Informel au Tchad</i>)
FAO	Food and Agriculture Organization
GDP	Gross Domestic Product
HIPC	Heavily Indebted Poor Countries
IDA	International Development Association
IMF	International Monetary Fund
INSEED	National Institute of Statistics and Economic and Demographic Studies (<i>Institut de la Statistique, de Etudes Economiques et Démographiques</i>)
LIBOR	London Interbank Offered Rate
MICS	Multiple Indicator Cluster Surveys
OCMP	Public Procurement Central Office (<i>Office Central des Marchés Publics</i>)
SAM	Social Accounting Matrix
SCD	Systematic Country Diagnostic
SIDRAT	Information System for Rural Development and Land Planning (<i>Système d’Information Développement Rural et Aménagement du Territoire</i>)

SSA	Sub-Saharan Africa
TFP	Total Factor Productivity
UNDP	United Nations Development Programme
UNHCR	United Nations High Commission for Refugees
WFP	World Food Programme

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Republic of Chad
Systematic Country Diagnostic (SCD)
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PREAMBLE

1. **This Systematic Country Diagnosis (SCD) for Chad aims to identify how to achieve the twin goals of ending poverty and improving shared prosperity.** It acknowledges both (i) the need for selectivity in pro-poor interventions, and (ii) the inherent difficulty to do so given the many competing “binding” reasons for poverty. In Chad, the twin goals of ending poverty and improving shared prosperity for the bottom 40 percent of the population can be considered intertwined with a poverty rate currently exceeding 40 percent of the population.
2. **Selectivity means the identification of principal opportunities for sustainable poverty reduction in the next 15 years, as well as the identification of binding constraints to reaping such opportunities.** In the search for selectivity, there is certainly a risk not to identify the correct set of poverty reduction opportunities and the binding constraints to reaping them. But the risk of not exercising selectivity is probably even higher as it would imply dispersion of scarce resources and attention of Government and Development Partners between too many competing priorities.
3. **Selectivity also implies making trade-offs between immediate and longer term objectives,** with priority given to the identification of poverty reduction opportunities which would (i) deliver the highest possible results before 2030 and (ii) not undermine prospects for poverty reduction and shared prosperity beyond 2030.
4. **The SCD cannot cover all relevant issues, and it focuses on a limited range of key sectors and policy areas.** The limited available data on poverty in Chad raises the possibility of selection bias, or in other words, the chance that certain subjects will be prioritized because they are relatively well understood, rather than because they are the most effective avenues for reducing poverty. To the extent possible, the SCD identifies important knowledge gaps and avoids or qualifies any conclusions that have clear operational implications but lack a sufficient evidentiary basis.
5. **The analysis presented in the SCD draws on a variety of information sources.** These include domestic statistics and reports, evaluations by the country’s development partners, original research conducted by the World Bank team, and consultations held in N’Djamena with non-governmental organizations and the private sector (see Annex 1).
6. **Comments and observations on the previous version of this document were also received from the authorities.** Authorities share the main conclusions of the diagnostic and underline their ongoing efforts to reduce poverty within the framework of the National Development Plan 2013-15. These efforts are discussed in the recent Joint World Bank and International Monetary Fund Staff Advisory Note of 2015.¹ The SCD focuses on the identification of the remaining binding constraints to be lifted to eliminate poverty by 2030. In this regard, the World Bank hopes that the SCD could inform the design of Chad’s future poverty reduction strategies, such as the Vision 2030 and the five-year development plan 2016-20.

¹ See International Development Association and International Monetary Fund (2015a).

OVERVIEW

7. **Chad is a Sahelian country of 13 million inhabitants.** It can be grossly divided in 3 distinct geographic zones: the Sahara Desert in the north, the arid Sahelian region in the center of the country, and the relatively fertile Sudanese belt in the south. The combination of rainfall and groundwater broadly defines livelihood zones, from pastoral nomadism and transhumant herding to agro-pastoralism and agricultural cultivation. Chad's population is young, and average life expectancy is about 51 years. Mortality is high but declining more rapidly than fertility. Consequently the population is growing extremely rapidly, and would double every 20 years at the current pace. Chad is also swiftly urbanizing, and the city population is projected to reach 27 percent of the total population by 2030. Five percent of Chad's population is constituted of refugees and internally displaced persons who have fled regional and domestic conflicts.

8. **Chad is a fragile country.** Climate change, rapid population growth and weak governance have been reinforcing each other to create a fragile situation, where growing competition for natural and economic resource has been exacerbating tensions. Since independence, Chad has been plagued with conflicts. Repeated conflicts, a poor state legitimacy and a highly fractured society have retarded the emergence of solid accountability systems and economic competition. Since 2010, Chad has experienced its longest period of internal stability in its post-colonial history, and its military apparatus is now seen as a strong contributor to regional stability. But high instability at Chad's borders, high volatility in oil revenues (which constituted 70 percent of Government revenues in 2013), and persistent high risks of external debt distress may continue to render budget management challenging and to divert already limited public resources from pro-poor interventions.

9. **Nearly half of Chad's population lives under poverty, and poor are overwhelmingly concentrated in rural areas.** Monetary poverty is strongly associated with food insecurity and poor human development, particularly health conditions. Most poor derive their incomes from farming and herding activities, relying on traditional extensive techniques, with limited access to markets and services. High fertility rates, and high dependence on rains keep the population (women in particular) economically inactive for a large part of the year. Unpredictable weather conditions and the small scale of most Chadian farms deters private investment which is deemed too risky, perpetuating a low equilibrium situation of stagnating agricultural yields and rural livelihoods. As strongly expressed by stakeholders during the SCD consultations, insecurity may also be a serious deterrent of investment and entrepreneurship in some rural areas. In fact, public spending remains highly concentrated in major cities, particularly the capital city N'Djamena.

10. **In the last decade, poverty rates declined but the number of poor increased; and inequalities worsened at the expense of the poorest rural households.** Between 2003 and 2011, Chad's poverty rate dropped from 55 to 47 percent, though not rapidly enough to offset the rapid population growth. As a result, the number of poor increased by 15 percent. Meanwhile, the poorest 35 percent of rural households saw their per capita consumption levels declining, exacerbating inequalities. This finding underscore the extreme vulnerability of the poorest households to various shocks (climate, health, prices, conflict), against which little mitigation and protection systems exist (social protection, insurance, transfers, justice). Inequity in access to basic service delivery, such as sanitation and health, also likely prevents the rural poor from escaping

poverty. The poverty impact of inequitable access to primary education is also aggravated by its very poor quality. In 2009, the adult literacy rate stood at 22 percent, and the average schooling was 1.5 years per adult, suggesting that raising the quality and coverage of education across the board will not significantly contribute to poverty reduction in the short run.

11. Oil revenues since 2003 have fueled public consumption and investment, but with little impact on productivity and private sector growth. This finding is consistent with observed poor efficiency and effectiveness of public spending, low return on education, and the overall stagnation of agricultural yields since 1961. Despite being massive, public investment projects could not counteract the significant environmental degradation of air, water and land. They could neither attract private investment in similar magnitude, except in the non-tradable sectors of transport and construction. Private investment has also been hampered by the difficulty in doing business, the result of complex regulatory and tax procedures, keeping large sections of the economy informal. Slow productivity growth, combined with a pegged exchange rate and an expansionary fiscal policy, led to a deterioration of Chad's external competitiveness and non-oil trade balance. This has exposed Chad to oil shocks, forcing the country to make sharp fiscal adjustments, as in 2014/2015.

12. Chad's poverty reduction opportunities lie chiefly in rural development. In 2011, 92 percent of the poor were living in rural areas, and structural transformation, the process of labor reallocation out of agriculture, remains a very long term proposition. Indeed, igniting such a process would require the realization of significant productivity gains in agriculture, higher social mobility to adapt to new sectors and technologies, and favorable conditions for trade and investment which are still all largely missing in Chad. Thus, poverty reduction opportunities reside mostly in the progressive and widespread improvement of existing sustainable agricultural practices to increase yields and the greater connectivity between farmers and cities, building on Chad's existing comparative advantages.

13. Higher growth will need to be accompanied with strong redistribution efforts to eradicate poverty. To eradicate poverty by 2030, Chad's per capita annual consumption growth would need to exceed 9 percent for fifteen consecutive years—a target likely out of reach. In this context, redistribution of growth dividends could tremendously help and are affordable from a fiscal perspective, as it would imply modest financial transfers from non-poor to poor households under good targeting schemes. Such redistribution could require simplifying the tax code to improve tax collection and take the form of targeted cash transfers/social protection, agricultural insurance mechanisms and public investment programs to specific economic sectors and regions. Recent evaluations of social protection programs in the Sahel suggest that they can generate large productive effects, as they provide households with greater financial resources and services to take informed economic risks.

14. Reaping poverty reduction opportunities would require addressing a selected number of binding constraints. In Chad's challenging fragile context, interventions to address high investment risks in agriculture, through improved land and water management, access to markets and the supply of post-basic skills, and strengthen resilience, through social protection, access to health in rural areas, local governance, would probably have an higher impact on poverty in the short run than those aimed at addressing cost of and access to finance, universal access to primary education, or poor urban infrastructure. The success of these interventions will be conditioned on

the continued maintenance of security and budget stability. Several other constraints, which would require strong implementation capacity and time to be addressed, also need to be tackled rapidly to sustain poverty reduction gains and shared prosperity in the medium term. These include raising the quality of education, curbing fertility rates, and improving the business environment to set the conditions for future structural transformation out of agriculture.

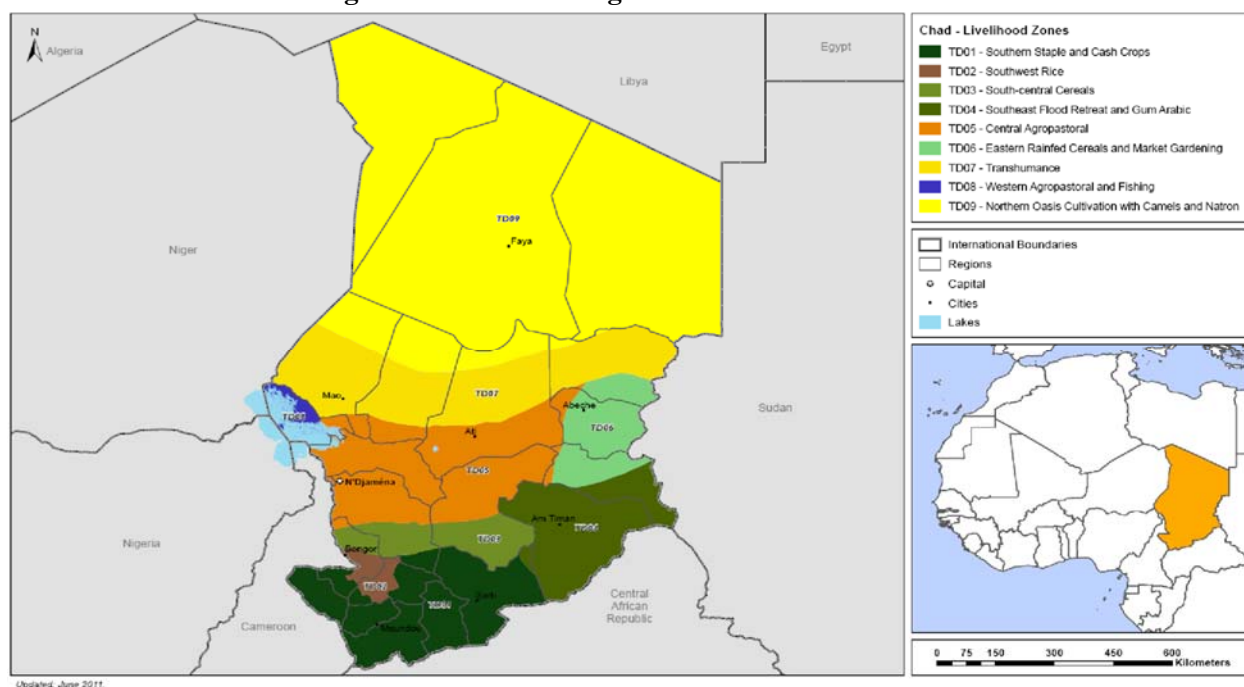
1. COUNTRY CONTEXT

This chapter provides a general overview of Chad's geographical, demographic and political situation, with special emphasis put on drivers of fragility. Main messages include: rapid population growth and climate change will exert increasing pressure on the use of natural resource and exacerbate social tensions in the foreseeable future. Poor governance and the unstable regional environment will also continue to remain important drivers of fragility. Both ultimately leave fewer public resources, capacity and political interest for persistently promoting pro-poor interventions. Declining oil receipts may further restrain fiscal space available for such interventions.

Population and Geography

15. **Chad is a large landlocked country encompassing 3 distinct geographic zones: the Sahara Desert in the north, the arid Sahelian region in the center of the country, and the relatively fertile Sudanese belt in the south.** The Sahara covers almost half of the country but is home to less than 5 percent of the population; the Sahel accounts for 28 percent of the country's land area and 33 percent of its population; and though the Sudanese belt covers only 25 percent of the country's land area, 63 percent of the total population is concentrated there. The combination of rainfall and groundwater broadly defines livelihood zones, see Figure 1, from pastoral nomadism (zone 9) and transhumant herding (zone 7), to agro-pastoralism (zone 5, 8) and agricultural cultivation (zone 1-4, 6). Chad borders Libya in the North, Sudan in the East, Central African Republic (CAR) and Cameroon in the South, and Nigeria and Niger in the West. Lack of direct sea access contributes to ranking Chad's international trading costs among the highest in the world.

Figure 1: Chad's Ecological and Livelihood Zones



Source: Famine Early Warning System Network, 2011.

16. **Chad's population reached almost 13 million in 2013.** Two-thirds of the population is under 25 years old, and average life expectancy at birth is about 51 years. The country is experiencing the familiar pattern of “demographic transition,” as mortality rates decline faster than fertility rates. Indeed, fertility rates have increased slightly in recent years, with a ratio of almost 7 children per woman. As a result, the population is growing at an extremely rapid 3.5 percent per year and is expected to hit 22 million by 2030.² In 2012, 78 percent Chadians lived in rural areas. However, the country is swiftly urbanizing, and city populations are projected to almost triple between 2010 and 2030, reaching 27 percent of the total population (see Annex 2, Population).

17. **Chad is significantly affected by forced displacement,** Chad hosts an estimated 470,000 refugees, including 367,000 from Sudan, 93,000 from CAR (many of Chadian descent) and around 10,000 from Nigeria. This is equivalent to over 4 percent of the population, the third highest share in the world.³ In addition, around 90,000 Chadians have been internally displaced, either by the conflict in 2007 or by subsequent cross-border attacks from Darfur. Large refugee and internally displaced populations create serious humanitarian challenges, strain local resources and in some cases threaten social cohesion.

18. **Climate is rapidly changing.** Since 1975, Chad has become drier and hotter, experiencing an unprecedented increase of 0.8° Celsius in average temperatures, twice the global average.⁴ Precipitation levels in the eastern part of the country have fallen substantially, and rainfall patterns are becoming increasingly erratic nationwide. Extreme weather events are both more frequent and more severe, with droughts in 2009 and 2010 followed by floods in 2012.⁵ Many Chadians are pastoralists, and as the country becomes drier they must push their herds further south earlier in the year in order to find adequate forage. Longer herding routes have serious negative implications for the welfare of pastoralist groups and may cause them to come into conflict with farming communities in the south.

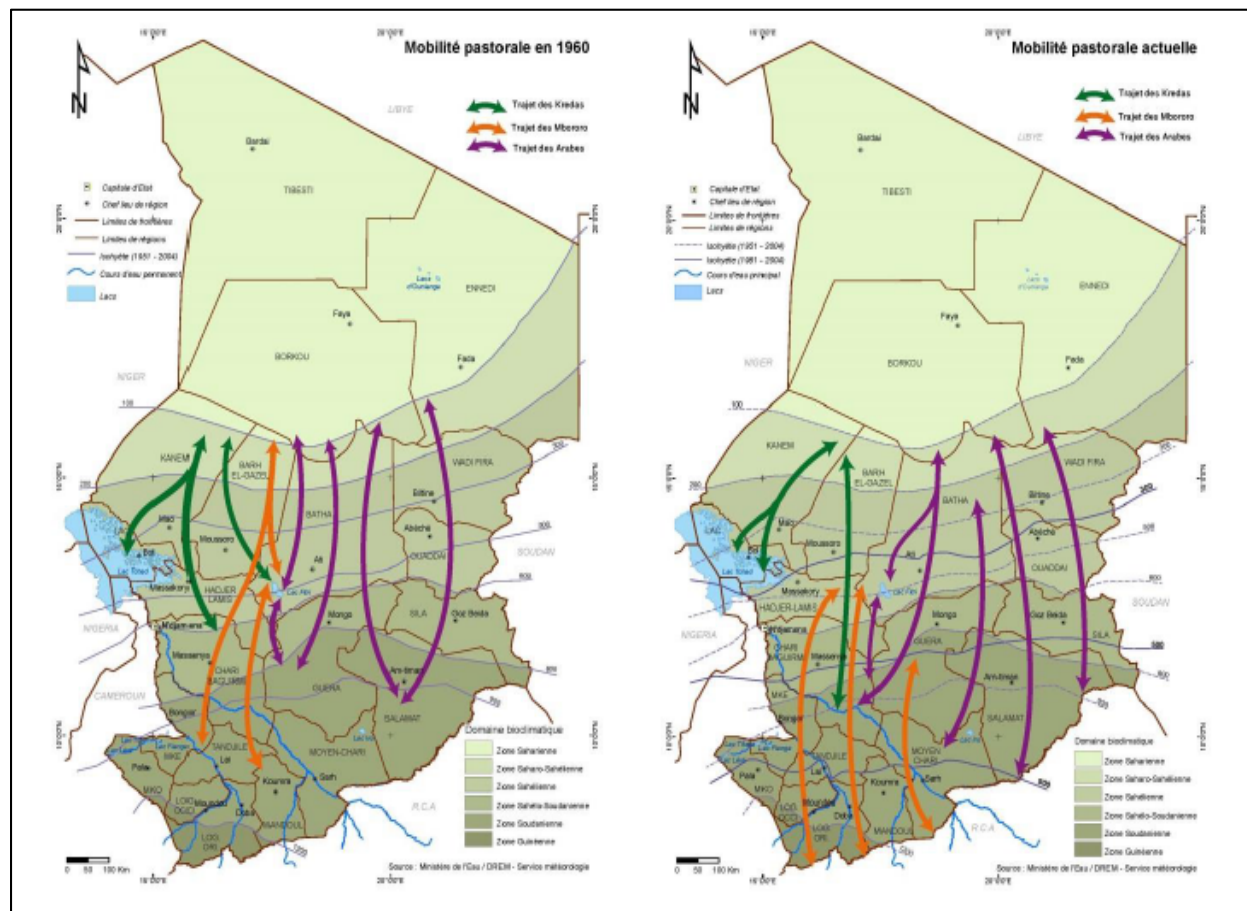
² Source: Agence Française de Développement et Institut de Recherche pour le Développement, 2013. Any reduction in fertility rates would only yield significant results from 2050 on. Depending on the trajectory of fertility rates, the population in 2050 could be anywhere from 37 to 48 million.

³ Source: UNHCR, 2014.

⁴ Source: United States Department of Interior, 2012. Recent research indicates that warming in the northern Atlantic Ocean has led to increased rainfall across much of the Sahel since the early 1990s. However, the recent (post 1980) drying in eastern Chad (as well as South Sudan, northern Uganda, Ethiopia and Kenya) is likely to be associated with warming of the Indian and western Pacific oceans. Chad is different from other Sahelian countries and substantially more likely to see persistent rainfall declines.

⁵ Natural disasters take a severe toll in Chad, but only floods are monitored and recorded. 8 floods occurred in the last 10 years, causing an average of 7.6 deaths per year.

Figure 2: Pastoralist Herding Routes, 1960 and 2013



Source: SIDRAT

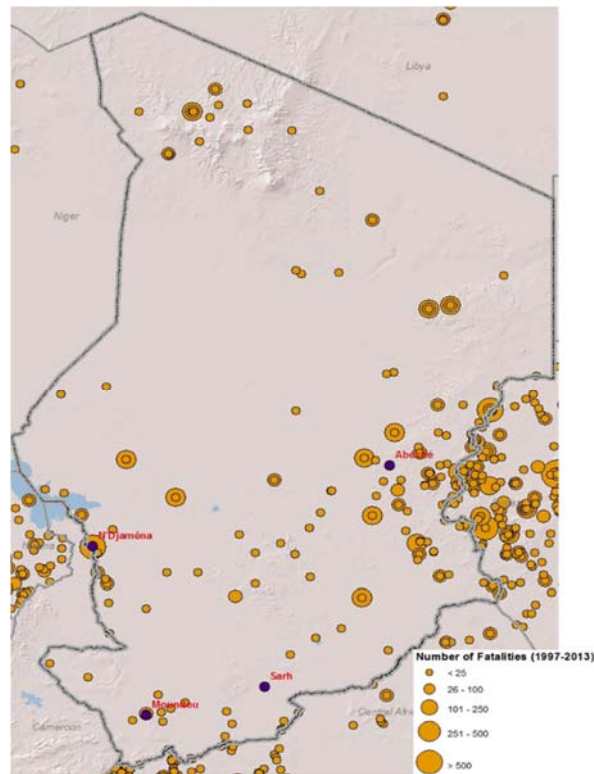
Governance and Fragility

19. **Chad's recent history is plagued with local, national and regional conflicts.** Since independence in 1960, Chad has chronically been experiencing violent conflicts of different natures, between regions and/or ethnic and religious groups, with external ramifications or through contagion effects from neighboring countries. Tensions between farmers and pastoralists, or competition for increasingly scarce fertile land (around Lake Chad in particular) are also occasional sources of deadly localized conflicts.⁶ Authoritarian repressions and capture of resource by the winners of conflicts,⁷ a poor state legitimacy and a highly fractured society have retarded the emergence of solid accountability systems and economic competition.

⁶ See Debos (2011), for a discussion on how violence has become ordinary and inherent part of Chadian political and economic activities.

⁷ Since independence, Chad never experienced non-violent regime change (Source: Debos, 2011).

Figure 3: Number and Location of Conflict-related Fatalities, 1997-2013



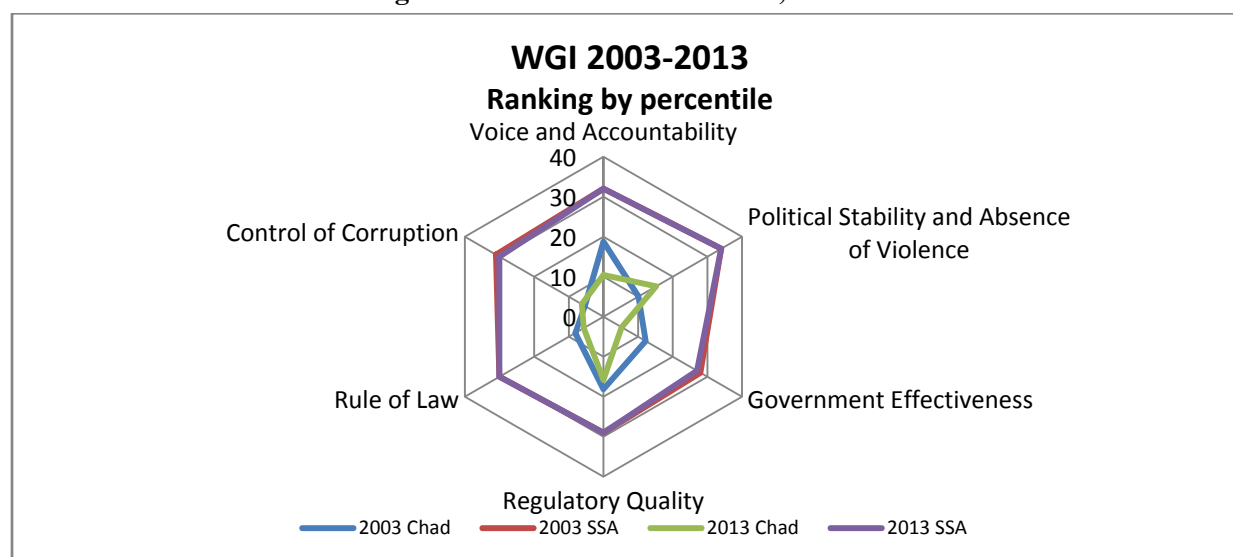
Source: World Bank staff design based on Armed Conflict Location & Event Data Project

20. **Fragility and weak governance have been mutually reinforcing each other.** In Chad's fragile context, political stability has been maintained by forging alliances between the regime and key constituencies, such as the security forces and other powerful interest groups, rather than relying primarily on institutional development and improved public service delivery for all. It is by nature difficult to precisely estimate the extent of the rent-sharing which constitutes the foundation of these alliances. However, a number of factors suggest that rent-sharing is common. These include (i) the highly uneven collection rates for tax and customs revenue, (ii) the frequent use of single-source contracting and opaque public procurement practices, and (iii) the substantial subsidies and tax exemptions granted to select groups. The frequent turnover (which bears a significant cost in terms of policy continuity), in the appointment (and dismissal) of high-level public officials, ministers and high-ranking civil servants in particular, is also understood by observers as a way to forge and maintain fluctuating political alliances. Chad was ranked last in the world (out of 178 countries) in 2014 in terms of public administration capacity,⁸ and its governance indicators (rule of law, voice and accountability, stability, control of corruption, regulatory capacity, government effectiveness) were lower by end-2013 than in 2003, and much lower than the Sub-Saharan average. Country Policy and Institutional Assessments (CPIA) portray

⁸ Source: Fund for Peace, 2014.

the same picture, with not a single public sector management and institutions indicator exceeding 2.5 points (in a range of 1 to 6) in 2013.⁹

Figure 4: Governance Indicators, 2003-13



Source: Worldwide Governance Indicators.

21. **From a development perspective, such weak governance translates into low allocation of public resource for pro-poor spending.** Nonoil revenues are extremely low at just 8 percent of nonoil GDP, and the absence of stabilization mechanisms to hedge against oil-price fluctuations make public expenditures extremely volatile and highly pro-cyclical. The inability to predict revenue inflows over the medium term brings significant planning challenges and makes it very difficult for policymakers to balance current and capital spending. Public spending executed using extraordinary procedures, while decreasing since 2010, still remains significant (12 percent of domestically financed spending, excluding wages and debt service in 2014, down from 20 percent in 2012). Large compositional variance (the difference between (i) the sectoral breakdown of public expenditures retained in the Budget Law and (ii) the actual breakdown in the executed budget), also reflects planning difficulties and mirrors frequent within-year adjustments to address short term issues. The process of budget preparation has witnessed some progress in recent years, but criteria for the selection of public investment remain non transparent and spending decisions remain highly concentrated in a small number of ministries. Evidence suggests that effective spending is highly biased in favor of urban areas (more than 50 percent of public works are for N'Djamena region), and is unequally distributed across regions, at the expense of the poorest (there is an inverse correlation between poverty level and public investment level). High urban bias is also observed in service delivery, notably through the gross misallocation of health and education human and physical resources across geographic and urban/rural areas,¹⁰ and the low levels of

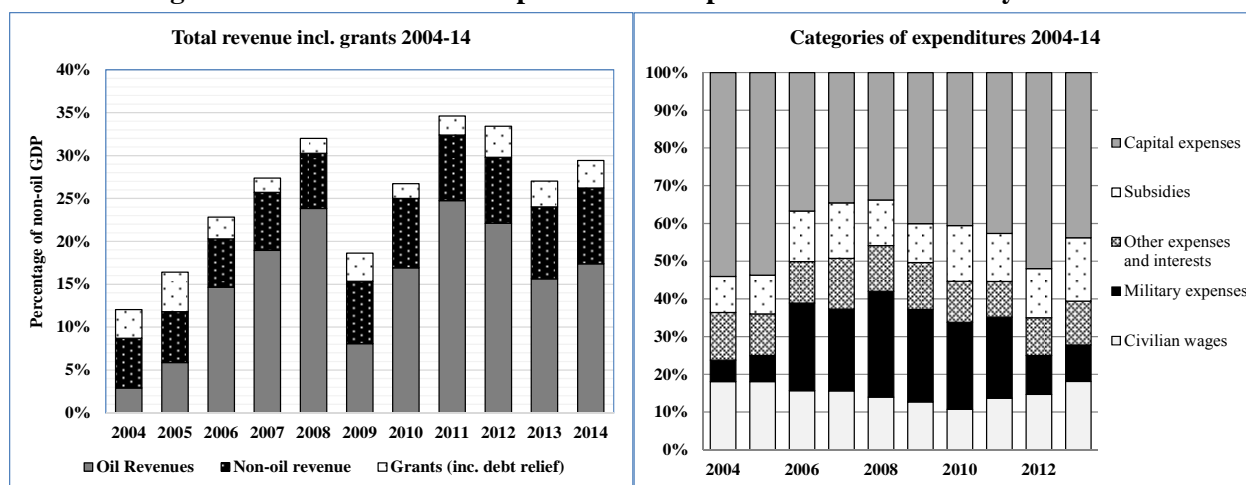
⁹ The various CPIA sub-indicators were rated in 2013 as follows: property rights and rules-based governance: 2.5; quality of budget and financial management: 2.5; effectiveness of revenue mobilization: 2.5; quality of public administration: 2.5; transparency, accountability, and corruption in the public sector: 2.0.

¹⁰ Source: World Bank (2015d). Misallocation is also reflected in the content of education, with a mere share of programs devoted to vocational & technical education and agriculture-related topics, combined with limited offerings of non-formal education and training opportunities in rural areas. Source: World Bank (2015e).

public expenditure for farming and herding activities relative to their social and economic weights.¹¹ In 2014, “pro-poor” public expenditures (health, basic education, social, water, microfinance and agricultural expenditures) did not exceed 6 percent of GDP.

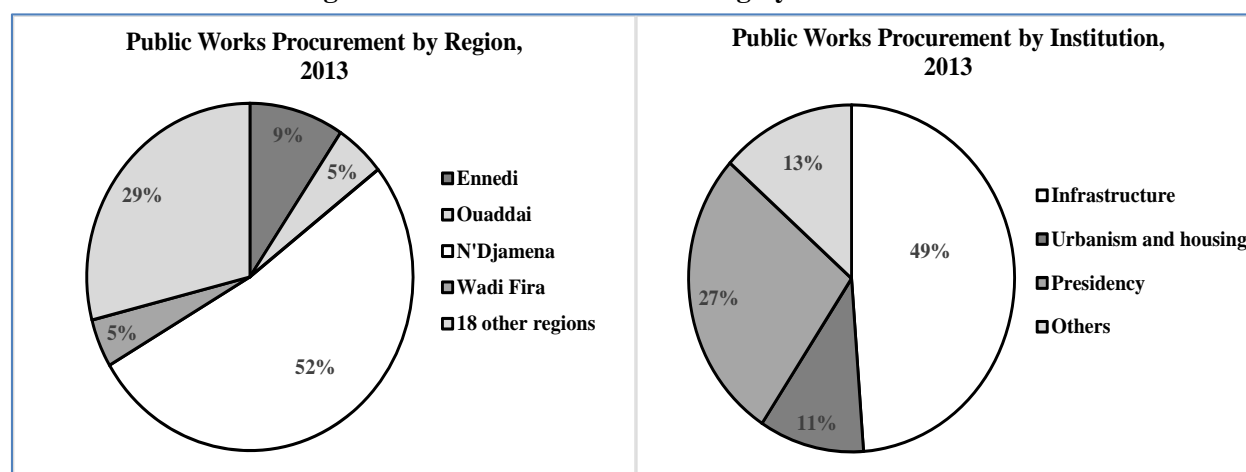
22. **Furthermore, unit costs are extremely high and heterogeneous, reflecting severe shortcomings and discretion in public procurement.** Single sourcing in public procurement is the norm, especially for projects funded under the Presidential budget (almost one third of total public investments): in 2013, more than 70 percent of total publicly-procured works (in amount) were awarded with a single source method of procurement.

Figure 5: Oil Revenue and Expenditure Composition Have Been Very Volatile



Source: World Bank staff calculations based on IMF, 2014a

Figure 6: Public Procurement is Highly Concentrated



Source: World Bank staff calculations based on OCMP

23. **Conflicts and poor governance likely contributed to Chad’s isolation from the international community.** Seen from a development assistance perspective, isolation was notably

¹¹ Source: World Bank (2014a).

reflected by the disengagement of the World Bank, following the controversies surrounding the management of oil revenues that were used mostly to equip the army rather than to finance education and health.^{12, 13} In retrospective, such a controversy could be interpreted as reflecting divergence of views in the degree of complementarity between security and development, as well as in the extent of structural fragility in Chad, both of which development agencies perhaps underestimated. From the authorities' perspective, the security situation required high flexibility in resource allocation, which the enclave approach envisaged at that time to ensure that oil revenue would finance development expenditures could not offer. In FY13, Chad's per capita International Development Association (IDA) allocation stood at US\$2, against US\$10 and US\$19 in Niger and Burkina Faso respectively where governance indicators ranked better. Concomitantly, the generation of World Bank Advisory Services and Analytics (ASA) for Chad plummeted. While 8 ASA reports were delivered between 2004 and 2006, only 3 were delivered between 2007 and 2013.

24. Chad is a fragile country¹⁴ and its recent conflict history defines its drivers of fragility. The World Development Report of 2011 clearly establishes the correlation between past occurrence of conflicts and probability of future conflicts.¹⁵ To this major driver of fragility should be added recent developments at the regional level which significantly expose Chad to increased fragility: the emergence of powerful non state regional actors (Al Qaida in Maghreb, Boko Haram, drug traffickers), and ongoing open conflicts in CAR, Nigeria and Libya. With the exception of Niger, the other neighbors of Chad are below the Sub-Saharan Africa Global Peace Index average and tensions in these countries all have the potential to encroach into Chad.^{16, 17}

25. Rapid population growth is a second important driver of fragility, and of poverty. High fertility rates and the constitution of large youth bulges can significantly threaten fragile social cohesion, through the pressure they exert on natural resource, the labor market, and demand for public service delivery. They also directly impact poverty through high dependency ratios. While actions need to be taken to reduce fertility rates, through girls' education and family

¹² From 1-2 percent of GDP before 2003 Chad's security budget rose to 7-8 percent in 2006-8, then moderated to about 3 percent in 2011. Source: Stockholm International Peace Research Institute, 2013.

¹³ From being consistently superior to the Sub-Saharan Africa's average from 1984 to 2002 (by 21 percent on average), Chad's per capita net Official Development Assistance became consistently inferior afterwards (by 22 percent on average from 2003-2013; Source: World Development Indicators). Humanitarian assistance, often delivered through non-governmental channels, nonetheless continued to be important after 2003. Between 2003 and 2012, Chad received about US\$1.8 billion in the form of humanitarian assistance, and has been in the top 20 recipients of humanitarian assistance in nine of the last 10 years.

¹⁴ Source: Fund for Peace, 2014. The Fund for Peace ranked Chad as the 6th most fragile country in the world in 2014. Chad's fragility level, according to this index, has slightly diminished since its peak level in 2009 when it was classified in the "very high alert" category. Chad is nonetheless not classified by the Bank as a fragile country, (i) in the absence of a UN and/or peace-keeping or political/peace-building mission during the past three years and (ii) in light of the fact that Chad's harmonized CPIA with the African Development Bank exceeds 3.2.

¹⁵ Source: World Bank, 2011a.

¹⁶ Source: Institute for Economics and Peace, 2013.

¹⁷ Ongoing conflicts at Nigerian and Cameroonian borders are exerting a high toll on the economy. Ninety percent of Chad's imports transit through the Douala – N'Djamena corridor, and oil exports take the other direction through the Doba-Douala pipeline. Livestock, the second source of exports after oil, almost entirely transits through Northern Cameroun and North Eastern Nigeria, to eventually be sold in the large cities of Nigeria. The recent rise of the Boko Haram terrorist group in this region is already severely hampering livestock exports, and more broadly threatens Chad's ability to trade with the rest of the world.

planning notably, such actions will only deliver significant results in the very long term. Chad will thus also need to mitigate the impact of such pressure through better natural resource management, better employability, and more efficient and equitable service delivery.

26. **The third important driver of fragility is climate change.** Decreasing availability of arable land, a rapidly growing population, and less predictable rains have been strongly exacerbating tensions between communities. Such a source of fragility is notably reflected in frequent conflicts between farmers and herders, as boldly and widely underlined during Chad SCD consultations held in N'Djamena in December 2014 (see Annex 1). In the same month, the President of Chad declined to promulgate the Pastoralism Code approved by the National Assembly due to strong opposition from farmers' groups, underscoring the difficulty of balancing the competing interests of farmers and herders. Chad is assessed by the World Bank as greatly under-capacitated in terms of ability to conduct risk and impact assessment, plan and implement adaptation measures, and in terms of adaptive capacities.

27. **Nonetheless from 2010, Chad has been experiencing its longest period of internal stability since independence.** In 2014, the Institute of Economics and Peace ranked Chad as the country "that had the greatest improvements in peace over the last six years" in the world, following notably the signature of a peace agreement with Sudan in 2010. Chad's effective military intervention in Northern Mali in 2013 was praised by most nations of the region, and Chad's military apparatus is now seen as a strong contributor to regional stability. Chad's election as a rotating member of the United Nations Security Council in October 2013 reflects its renewed standing in the international community, as did the attainment of the Heavily Indebted Poor Countries (HIPC) completion point in April 2015. At the same time, Chad's greater involvement in regional stabilization efforts (including the decision in January 2015 to send troops to support Cameroon in its fight against Boko Haram) also means increased risks of retaliation from hostile groups, increased refugees pressures, as well as higher military spending needs in a context of increasingly scarce oil revenues.

28. **Declining oil revenues might further exacerbate fragility and risks of debt distress in the short run.** With the recent drop in oil prices, oil revenues are projected to sharply decline in 2015, before progressively rebounding with the opening of new fields. Meanwhile, the full delivery of HIPC-related debt relief from 2015 will improve medium term external debt sustainability,¹⁸ but will not create the fiscal space sufficient to avoid a significant fiscal adjustment. This challenging short term fiscal outlook is further compounded by increased demand for security expenditures in the midst of the military campaign against Boko Haram. Under the authorities' current macroeconomic framework,¹⁹ public expenditure is projected to decline from 29.6 percent of non-oil GDP in 2014 to 23.0 percent in 2015 before progressively rebounding to around 30 percent from 2018. Fragility could thus be exacerbated by increased competition for scarcer public resources, notably ahead of general elections scheduled for 2016. Alternatively, a relaxation of the fiscal stance through the accumulation of arrears or excessive domestic and

¹⁸ The attainment of the HIPC completion point in April 2015 will reduce Chad's external debt burden significantly. The Present Value (PV) of debt to exports ratio would fall from 56.2 percent end 2013 to 34.3 percent at end 2020, and the debt service-to-revenue ratio is projected to decrease from 32.4 percent in 2014 to an average of 17.2 percent in 2015-2020. See International Development Association and International Monetary Fund, 2015b.

¹⁹ Authorities' macroeconomic program is supported by the IMF and anchored around the progressive decline in the non-oil primary deficit in anticipation of the projected dissipation of oil revenue in the medium term.

external borrowing could disrupt private and financial sectors activities, and magnify risks of debt distress already concentrated in the very next years (See Annex 2, Sustainability).

Table 1: Selected Macroeconomic Indicators, 2012-19

	2012	2013	2014	2015	2016	2017	2018	2019
			Prel.	Proj.			Proj.	
(Annual percentage change, unless otherwise indicated)								
Real economy								
GDP at constant prices	8.9	5.7	6.9	7.6	4.9	8.3	5.0	5.1
Oil GDP	-4.0	-7.1	5.7	43.4	7.0	23.5	5.5	6.5
Non-oil GDP	11.6	8.0	7.1	2.1	4.4	4.9	4.9	4.8
Consumer price index (annual average)	7.7	0.2	1.7	3.2	2.9	3.0	3.0	3.0
Consumer price index (end of year)	2.1	0.9	3.7	2.0	3.0	3.0	3.0	3.0
Oil prices								
WEO (US\$/barrel) ¹	105.0	104.1	96.2	58.1	65.7	69.7	71.8	73.1
Chadian price (US\$/barrel) ²	102.0	103.9	98.0	51.5	59.9	64.0	66.5	68.6
Oil production (millions of barrels)	41.2	36.3	38.5	57.3	61.7	77.5	82.2	87.9
Exchange rate CFA franc per US\$ (period average)	510.2	493.9
Money and credit³								
Net foreign assets	14.8	-2.6	-1.8	-4.5	8.2	8.8	23.6	10.2
Net domestic assets	-1.3	11.2	28.2	8.0	5.9	1.2	-20.5	-6.0
Of which: net claims on central government	-13.1	10.0	18.0	5.6	0.4	-3.0	-24.0	-11.0
Of which: credit to private sector	12.9	2.8	17.3	-4.5	1.0	1.3	2.7	5.0
Broad money	13.4	8.6	26.5	3.6	14.1	10.1	3.0	4.3
Income velocity (non-oil GDP/broad money)	5.6	5.5	4.8	4.8	4.5	4.5	4.7	4.8
External sector (valued in CFA francs)								
Exports of goods and services, f.o.b.	-4.1	-8.6	1.4	-16.8	21.6	29.9	11.2	8.4
Imports of goods and services, f.o.b.	3.8	-8.1	10.0	-13.7	10.0	13.2	4.3	3.9
Export volume	-2.9	-13.7	5.6	39.4	8.6	22.3	7.2	0.3
Import volume	3.2	-5.8	9.5	-11.1	9.5	12.4	3.6	3.3
Overall balance of payments (percent of GDP)	1.7	-0.2	-1.5	-0.8	-0.4	-0.2	3.1	1.2
Current account balance, including official transfers (percent of GDP)	-8.7	-9.0	-8.7	-10.0	-8.7	-5.8	-3.2	-2.5
Terms of trade	-1.9	8.5	-4.4	-38.5	11.4	5.4	3.0	7.4
External debt (percent of GDP)	20.1	21.2	30.8	25.5	22.6	19.6	18.1	15.9
NPV of external debt (percent of exports of goods and services)	39.1	33.5	66.5	74.5	58.0	42.6	36.9	31.0
(Percent of non-oil GDP, unless otherwise indicated)								
Government finance								
Revenue and grants	35.0	27.8	23.3	21.5	23.5	25.2	33.4	35.1
Of which: non-oil	8.1	9.3	9.5	9.9	10.6	11.0	11.4	11.8
Expenditure	34.4	31.4	29.6	23.0	24.1	25.1	29.4	32.2
Current	16.5	17.7	16.7	14.4	13.5	13.9	15.4	16.1
Capital	17.9	13.7	12.9	8.6	10.5	11.2	14.0	16.0
Non-oil primary balance (commitment basis, excl. grants) ⁴	-20.1	-18.2	-16.3	-8.4	-7.4	-8.0	-12.2	-14.6
Overall fiscal balance (incl. grants, commitments basis)	0.7	-3.6	-6.3	-1.5	-0.5	0.1	4.0	2.9
Overall fiscal balance (incl. grants, cash basis)	2.1	-6.6	-5.9	-2.7	-0.5	0.1	4.3	3.4
Total debt (in percent of GDP) ⁵	28.2	30.1	38.2	33.2	30.4	26.5	24.4	21.7
Of which: domestic debt	8.1	8.9	7.4	7.8	7.8	6.9	6.3	5.8
Memorandum items:								
Nominal GDP (billions of CFA francs)	6,314	6,397	6,883	6,962	7,794	8,875	9,553	10,349
Of which: non-oil GDP	4,400	4,661	5,150	5,357	5,796	6,268	6,733	7,291

Sources: Chadian authorities; and IMF staff estimates and projections.

¹WEO 2015 Spring Production.

²Chadian oil price is Brent price minus quality discount.

³Changes as a percent of broad money stock at the beginning of period.

⁴Defined as the total revenue excluding grants and oil revenue, minus total expenditure excluding net interest payments and foreign-financed investment.

⁵Central government, including government-guaranteed debt.

2. POVERTY CHARACTERISTICS

This chapter discusses poverty patterns and trends, vulnerability and equity issues. Main messages include: poverty in Chad is overwhelmingly concentrated in rural communities. Growth in the rural economy is slow, and its returns are narrowly distributed. The majority of the poor are small farmers and herders, who rely primarily on traditional economic systems and have limited access to markets and social services. Chad's high fertility rate significantly impacts women's economic participation. While most of the poor are located in the country's southern Sudanese zone, Chad's uneven population distribution and vulnerability to local climatic shocks cause poverty localization to shift over time.

29. **Nearly half (47 percent) of the population lives under the poverty line in Chad.** This estimate is derived from Chad's Third Consumption and Informal Sector Survey (*Enquête sur la Consommation et le Secteur Informel au Tchad*, ECOSIT3), which was conducted in 2011.²⁰ The national poverty line is defined as US\$1.4 per day, the estimated cost of 2,400 calories worth of food plus a basket of essential goods and services such as clothing and shelter. Poverty figures control for household size and composition (children, adults) and regional price differences. Among the poor, per capita daily consumption averages US\$0.81/day.

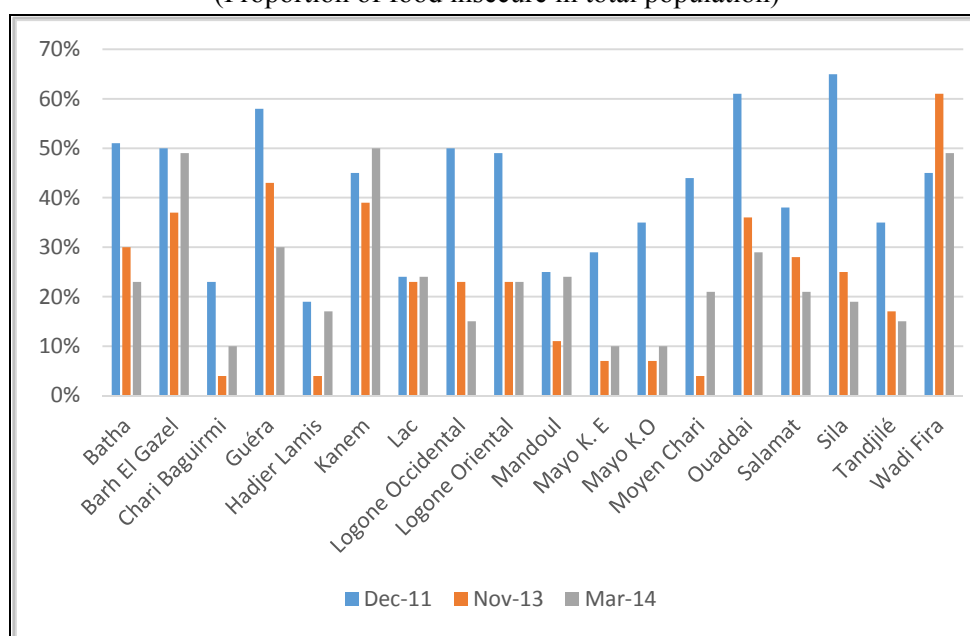
30. **Chad's high rate of monetary poverty is accompanied by very low human development indicators.** Chad ranked 184th out of 187 countries in the 2014 Human Development Index. Average schooling was just 1.5 years per adult in 2009. The adult literacy rate was 22 percent, and the literacy rate for men was twice that of women. In 2013 the primary school completion rate stood at 38 percent, and 56 percent of 6 to 24 year olds were not enrolled in school (see Annex 2, Education). In 2010 child and infant mortality rates were estimated at 171 and 98, respectively, per thousand live births. Malaria, respiratory infections, diarrhea and malnutrition were the primary causes of death, and Chad's morbidity rates for these diseases are among the highest in the world. Maternal mortality was estimated at 1,084 deaths per 100,000 live births (1.1 percent), the highest rate in central Africa.²¹ Chad is not on track to achieve its Millennium Development Goals for primary education, child mortality or maternal mortality (see Annex 2, Health).

²⁰ Source : National Institute of Statistics, Economic and Demographic Studies (*Institut de la Statistique, de Etudes Economiques et Démographiques*, INSEED), 2013a. A total of 10,026 households were surveyed, making the sample representative at the national, regional and urban/rural levels. The survey contains information on household characteristics (demographic composition, living conditions, human capital, economic activities, etc.) and consumption patterns. It also includes a special module on the informal sector. To account for the greater diversity of urban consumption patterns, substantially more urban households were surveyed than rural households. Each individual surveyed in an urban area represented an average of 56 individuals in the total population, while each individual surveyed in a rural area represented an average of 485 individuals. This is an important consideration when analyzing the data for the rural population. In addition, households were surveyed over a couple of months, and the results may not fully reflect annual consumption given the inherent seasonality of the rural economy.

²¹ The decline in child and infant mortality indicators has been lower in Chad than in other countries in the region, and the maternal mortality rate actually increased by nearly 20 percent between 1990 and 2010. A new Demographic and Health Survey (DHS) completed in 2015 will provide more detail on the health situation in Chad and enable a full assessment of trends since the last DHS in 2004.

31. **Food consumption defines poverty.** Food consumption (including self-consumption) represents 62 percent of the poor's total consumption,²² and 66 percent of the non-poor consumption. This suggests (in consistence with the poverty line definition) that poor sacrifice food consumption for other essential items, and would greatly benefit from higher food consumption. A 2013 analysis of food insecurity²³ found that 23 percent of children below the age of 5 did not consume the minimum daily caloric intake for their age group, 27 percent suffered from chronic malnutrition and 14 percent were experiencing acute malnutrition.²⁴ While the food supply has improved markedly since the crisis of 2008-09, 23 percent of Chad's population remains food insecure. Access to grain markets is an important determinant of household food security, but microeconomic analysis²⁵ suggests that monetary poverty is the main factor. Among the poor, households that produce staple foods are better able to cope with food supply shocks than households that purchase food. Because the food market is severely segmented, and production is highly sensitive to local weather conditions, regional food security patterns fluctuate over time.

Figure 7: Food Insecurity Varies Across Regions and Over Time
(Proportion of food insecure in total population)



Source: World Bank staff calculations based on FAO, UNDP and WFP

Geography of Poverty

32. **Poverty is overwhelmingly a rural, agricultural and informal phenomenon.** In 2011 52 percent of rural households were estimated to be poor, versus just 21 percent of urban households. Because rural households represent 78 percent of the total population, 92 percent of

²² Maize, millet, and sorghum constitute about half of poor households' caloric intake.

²³ Source: World Food Programme, 2013.

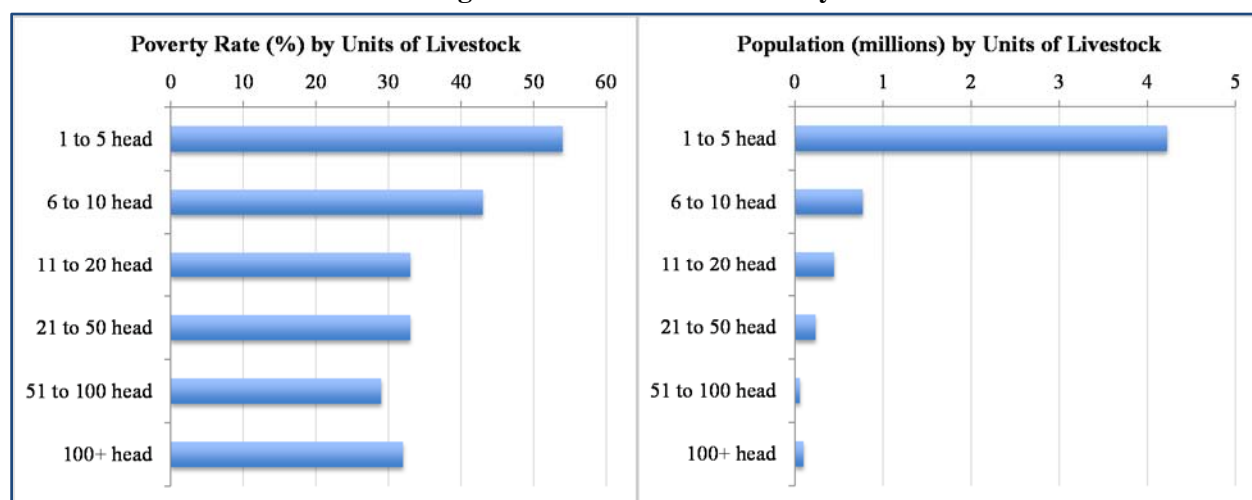
²⁴ Insufficient caloric intake is compounded by other factors including poor water quality, inadequate sanitation conditions and a lack of key micronutrients.

²⁵ Source: World Food Programme, 2009.

the poor live in rural areas, while just 8 percent live in urban centers. Rural poverty is not only more pervasive, it is also more severe. In 2011 average household consumption among the rural poor was US\$0.80/day, well below the US\$0.96 per day consumed by the urban poor. 33 percent of children in rural areas are underweight, compared to 22 percent in urban areas. Nationwide, 73 percent of the heads of poor households work (including 29 percent who are underemployed), 19 percent are inactive workers and the remaining 8 percent are unemployed.²⁶ Among active workers, 79 percent of the poor rely on crops and/or livestock as their main source of income, and it is estimated that another 14 percent work in the non-agricultural informal sector.²⁷

33. **Within agriculture, it remains difficult to distinguish farmers from herders from a poverty perspective.** Poverty rates do not differ significantly between the two groups, which are in any case difficult to strictly distinguish as many households are both farmers and herders. The majority of pastoral households have only 1-5 units of livestock, and their poverty rate approaches 55 percent. Increased livestock holdings is correlated with lower poverty rates, but still remains above 30 percent on average for herds of more than 100 units of livestock. If about 80 percent of livestock is transhumant, see Chapter 3, only 500,000 pastoralists could be involved in nomadic activities, while another 5.3 million pastoralists could be more permanently settled.

Figure 8: Livestock and Poverty



Source: World Bank staff calculations based on ECOSIT3.

34. **The farmers' poverty rate averages 50 percent, and the size of cultivated area per household is not associated with lower poverty.** The vast majority (85 percent, equal to about 6 million people) of households engaged in farming activities, cultivate less than 5 hectares of land, and another 15 percent (or one million people) cultivate more.²⁸ However, the size of cultivated areas per household is not associated with lower poverty, possibly reflecting the facts that (i)

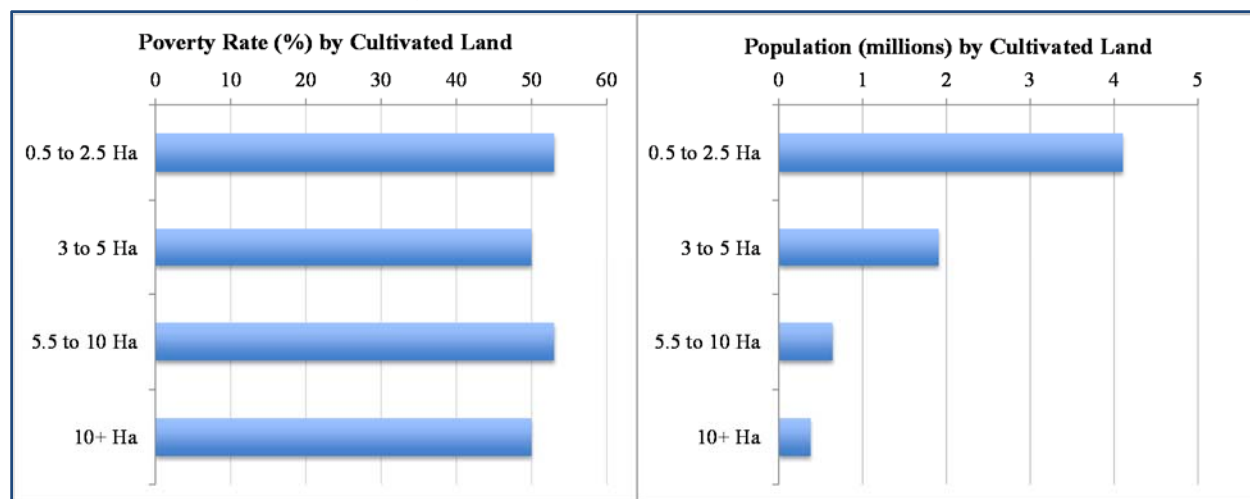
²⁶ Source: INSEED, 2013b.

²⁷ Source: INSEED, 2013c.

²⁸ As underlined in World Bank (2010), the rural sector is dominated by small and under-equipped farms. In the Sudanese zone, the average cultivated land per household ranges between 3 and 4 hectares for cotton, 0.5 and 1 hectare for rice, and 1 and 5 hectares for fruit production systems, including 0.25 to 0.5 hectares devoted to market gardening. In the Sahelian zone, the average farmland used per household ranges between 0.25 and 1 hectare.

cultivated land size depends largely on available labor, which in Chad is primarily household labor; (ii) without access to capital and modern productive technologies, there are rapidly diminishing returns to scale in extensive farming; and (iii) yields are higher in more densely populated areas (the Sudanese belt in particular).

Figure 9: Cultivated Areas and Poverty

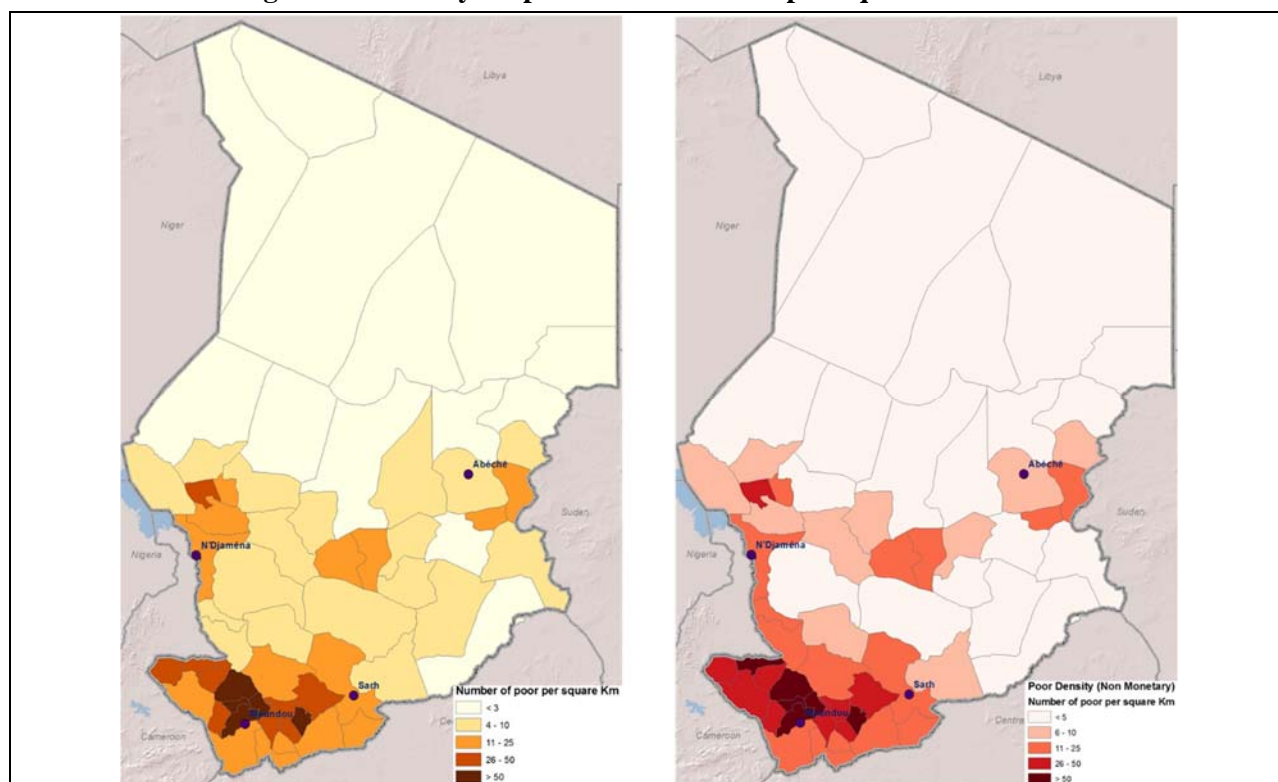


Source: World Bank staff calculations based on ECOSIT3.

35. **There are significant differences in the prevalence of poverty between rural areas.** Five administrative regions (out of 20 listed in the household survey), among the densest and representing 28 percent of the population, host more than 40 percent of the poor, with poverty rates around 65 percent. These regions are all located in the Sudanese belt. In contrast, the relatively richer regions are all located in the Sahelian belt, at the eastern border with Sudan and the Western border around the Lake Chad. In between these eastern and western commercial zones, as well as in the Sahara are located regions with average incidence of poverty (poverty rates between 40 and 50 percent). Poverty maps, estimated by combining ECOSIT3 data with Census data from 2009 suggest a high geographical concentration of poverty in Southern Chad, with pockets of poverty in the North of the capital N'Djamena, the east of Abeche and in the Central Guera region. This conclusion is not sensitive to the measurement of poverty. In the left panel of Figure 10, consumption data are used to measure poverty (as done so far), while in the right panel, poverty is measured using assets holdings to correct for possible within-year seasonality effects which may influence the estimation of poverty across zones.²⁹ While estimates of regional poverty rates differ depending on the methodology followed, such differences become marginal with regard to the distribution of populations reported in census data.

²⁹ Assets considered in the computation of households' wealth include housing type, equipment, and livestock, weighted using observed market prices in 2011.

Figure 10: Poverty Maps - Number of Poor per Square Kilometer

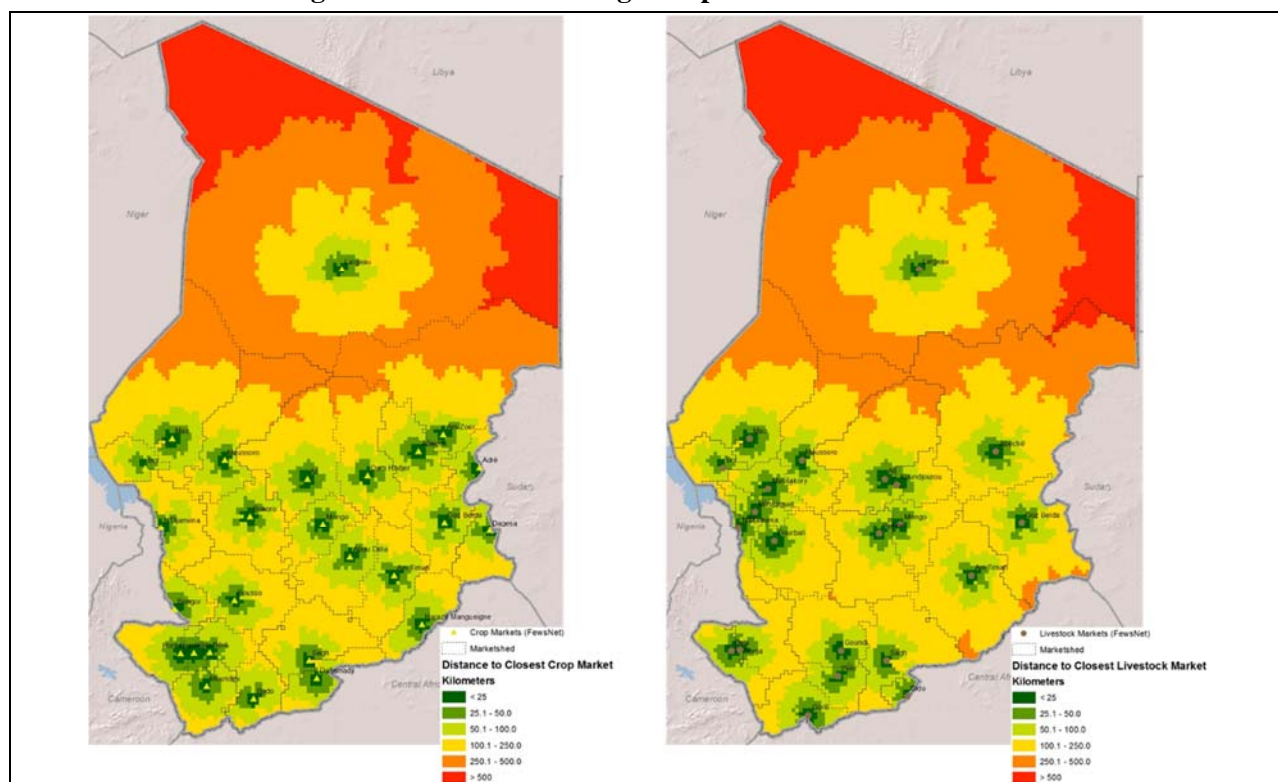


Source: World Bank staff design based on ECOSIT3 and 2009/10 population census data

36. **There remain large pockets of populations with little or no connection to markets.** According to ECOSIT3 about half of the population lives within 5 kilometers of a market, and poverty rates strongly correlate with market access. Figure 11 uses data on road conditions to determine the shortest distance to large crop and livestock markets. While the western and eastern regions of Chad appear relatively well connected, this is not the case for parts of the central and northern regions. It is also worth noting that large crop markets tend to be well connected to one another, which is likely the result of large-scale investments in the road network over the last decade.³⁰

³⁰ Source: World Food Programme, 2009. Relatively high correlation coefficients (ranging from 0.67 to 0.93) for prices of millet and sorghum on regional markets over 2003-09 suggest significant connectivity between major agricultural markets in N'Djamena, Abeche, Moundou, and Sarh.

Figure 11: Distance to Large Crop and Livestock Markets



Source: World Bank staff design based on Delorme and Chadian authorities.

Poverty Profiles

37. **An analysis of the ECOSIT3 data suggests that a number of factors influence household poverty.** As in many other countries, household size is a strong predictor of poverty; the larger the household, the more likely it is to be poor. The number of children in a household impacts its poverty status in a number of ways, including by limiting the ability of household women to participate in economic activities. Employment of heads of household in the public service or in non-agricultural activities is correlated with lower poverty incidence. However, the head of household's level of primary education does not strongly influence poverty incidence. Livestock ownership is correlated with lower poverty rates, but the size of cultivated land is not a significant factor. Access to irrigation strongly influences households' poverty status. Neither receiving agricultural extension services, nor belonging to an agricultural organization seemingly affect poverty rates. Access to healthcare, however, has important implications for household poverty,³¹ and more than half of the Chadian population lives further than 5 kilometers from the nearest healthcare facility.

³¹ One standard deviation in the following variables is associated with the following respective variations in rural per capita consumption. Household size: 22 percent; cultivated land: 2 percent; livestock holding: 19 percent; access to health: 7 percent. And access to irrigation is associated with a 24 percent increase in consumption, after controlling for potential selection biases. Source: World Bank staff calculations based on ECOSIT3.

Vulnerability

38. **Poor and near poor are greatly vulnerable to a large number of shocks.** Households' income is exposed to climatic shocks, such as droughts, floods and insects for farmers and herders, to health shocks affecting labor productivity (malaria, maternal mortality), and to predation from thieves. Households' consumption is exposed to variation in prices and availability (food items in particular), and sudden out-of-pocket essential expenses (health for instance). In response, households have been resorting to various coping mechanisms, such as income diversification, or extensive farming (which both require large household sizes), though often at the expense of per capita consumption growth over time. Most Chadian households do not receive public assistance transfers or benefit from formal social protection systems. Remittances and other forms of private social support are also very limited. Few households have access to formal financing, either traditional lending or microcredit, and agricultural insurance mechanisms are almost nonexistent.

39. **Due to the concentration of poor households in the agricultural sector, fluctuating rainfall patterns have a substantial impact on poverty.** The lack of panel data and the difficulty of measuring weather-related shocks makes it difficult to precisely quantify the relationship between rainfall and poverty. Nevertheless, econometric analysis suggests that household poverty rates are correlated with both the average annual amount of rainfall and the variation in rainfall levels between years.³² High levels of rainfall and low inter-annual variations are correlated with lower levels of poverty. However, regions with the lowest rainfall averages also tend to experience the largest relative variations. Given the concentration of rural poor around the poverty line, it is estimated that an agricultural shock equivalent to one standard deviation in food crop production per capita will put 12 percent of non-poor rural households at risk of falling below the poverty line. Such a shock would also significantly deepen the poverty of households that are already below the poverty line, causing the rural poverty gap to increase by an estimated 25 percent.³³

40. **While vulnerability within households is more difficult to measure, it is also believed to be widespread because of gender discrimination.** Women's vulnerability within households is due to their lack of financial autonomy. ECOSIT3 found that only 23 percent of women were responsible for deciding whether or not to work, and 21 percent were responsible for deciding whether or not to access financing. Gender-based violence is pervasive, and 41 percent of women reported being beaten by their husband during the period under review. While poor and non-poor women suffer similar rates of domestic violence, the impact on poor women is likely to be more severe given their lower access to healthcare, justice and social protection institutions. Sexual violence is also highly prevalent and aggravated by conflict and displacement.³⁴ Women's lack of control over productive resources, inadequate access to healthcare, high fertility rates and low levels of educational attainment all contribute to their social and economic vulnerability. More detailed information on the consumption distribution within households would enable further analysis of these dynamics, but no such data currently exist.

³² Source: World Bank, 2015b.

³³ This scenario assumes that no support is provided to offset the impact of the shock on household consumption.

³⁴ United Nations, 2010. Sexual and gender-based violence is estimated to have represented more than 50 percent of human rights violations in eastern Chad in the 2005-09 period.

Poverty Dynamics and Equity

41. **Between 2003 and 2011, the poverty rate dropped from 55 to 47 percent.** The last two household's surveys, ECOSIT2 and ECOSIT3, are highly comparable from a poverty measurement perspective, and their comparison suggests a significant decline in the poverty rate between 2003 and 2011.³⁵ This conclusion nonetheless remains dependent on the choice of the two periods during which surveys were conducted, given the high impact of agricultural production on poor households' consumption.³⁶ This decline in the poverty rate is broadly in line with the average performance observed in Sub-Saharan Africa in the last decade: one percentage point reduction in the poverty rate per year. However, due to rapid population growth the decline in the poverty rate did not reduce the total number of poor people. Indeed, between 2003 and 2011 the number of poor Chadians increased by 15 percent.

Table 2: Poverty Trends 2003-11

	Poverty Headcount Rate		Poverty Gap		Squared Poverty Gap	
	2003	2011	2003	2011	2003	2011
Urban	24.4	14.1	7.4	3.8	3.2	1.5
Rural	58.4	50.6	23.2	21.6	11.7	12.1
Total	54.8	46.7	21.6	19.7	10.8	10.9

Source: World Bank staff calculations based on ECOSIT2 and ECOSIT3.

42. **The poverty rate fell slightly faster in urban areas.** Controlling for the impact of the re-classification of many rural areas into urban areas between the two surveys, it can be observed that poverty rates declined faster in urban areas (10 percentage points) than in rural areas (8 percentage points). Yet, counterfactual analysis suggests that the phenomenon of urbanization between 2003 and 2011 (mainly through rural-urban migration), only marginally contributed (half a percentage point) to the overall poverty reduction observed over that period. Additional analysis will be useful to better understand the role of urbanization and migration on poverty reduction in Chad. However, these findings are consistent with micro analysis conducted in Ghana,³⁷ which suggests that rural urban migration may only play a modest role in poverty reduction, reflecting the low capacity of large cities to change the destiny of migrants who lack sufficient human and social capital. In Chad though, it is possible that the high demand for unskilled labor in construction, trade and transport services (mostly located in cities) fueled by oil rents since 2003 created some higher income opportunities for poor rural households migrating to cities.

43. **Inequality increased between 2003 and 2011, and many of the poorest rural households were unable to benefit from economic growth.** The Gini coefficient rose from 0.39 in 2003 to 0.42 in 2011 and is now broadly in line with the average for developing countries worldwide. This trend was driven almost entirely by worsening inequality in rural areas, as per capita consumption actually fell among the poorest 35 percent of rural households over the period. Meanwhile, urban growth was modestly pro-poor.

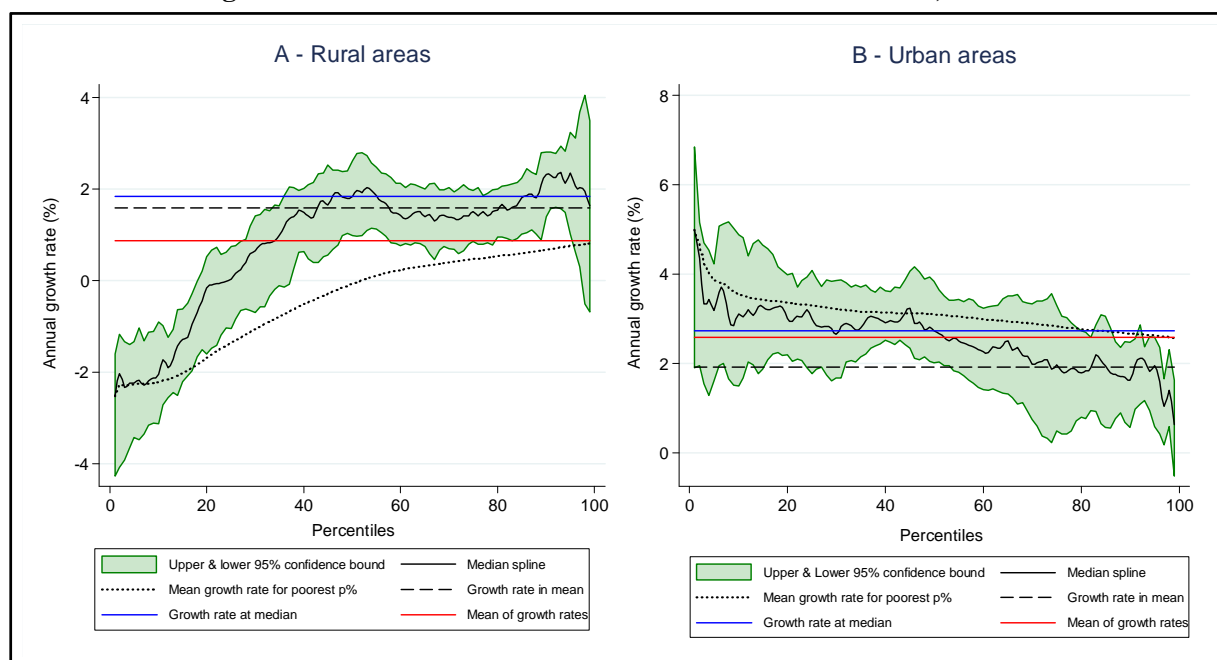
³⁵ Source: World Bank, 2013a. 7,008 households were surveyed in 2003, using a similar methodology as in 2011.

³⁶ Observation of deviations of cereal yields from trend suggests that 2002-2003 and 2010-2011 agricultural campaigns enjoyed similar climatic conditions.

³⁷ Source: World Bank, 2011c.

44. **Rising inequality may be a temporary phenomenon, but it underscores the extreme vulnerability of the poorest households.** Comparative analysis of data from 2003 and 2011 surveys does not allow for identification of factors that contributed to increased inequality. Increasing inequality could be the result of poor households' lower endowments (say, cattle holding) over time or lower returns to such endowments (say, cattle price). The permanent, or on the contrary, temporary nature of such evolutions is also difficult to determine, based on two observations only. The analysis does suggest however, that the poor are particularly vulnerable to shocks, in light of the facts that (i) there were marked differences between regions in the evolution of inequalities within each region, and that (ii) food insecurity seems to widely fluctuate over time across regions.

Figure 12: Rural and Urban and Growth Incidence Curves, 2003-11



Source: World Bank staff calculations based on ECOSIT2 and ECOSIT3.

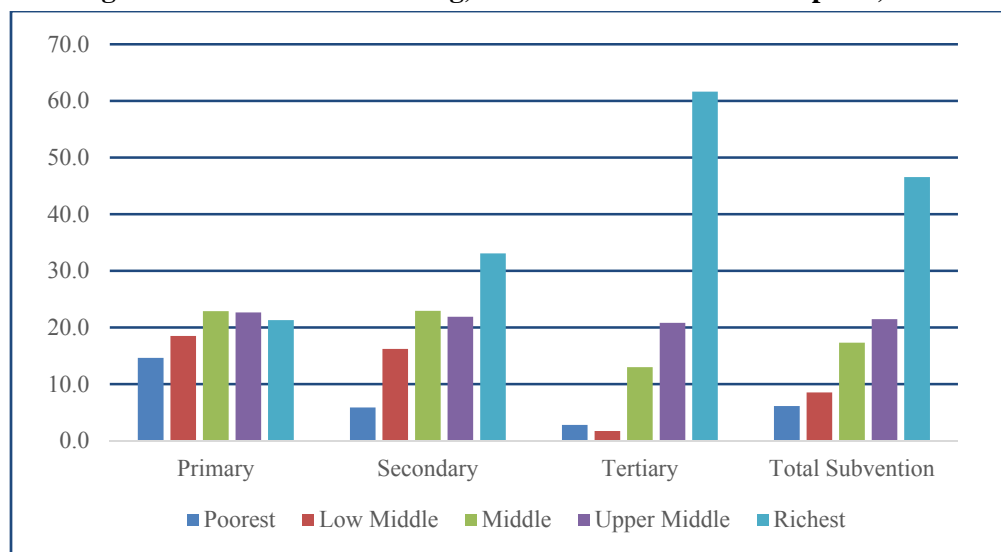
45. **Inequity in service access could be a factor of increased inequality and poverty.** The debate on the existence of “poverty traps” (understood as self-reinforcing mechanisms through which poor remain poor) is controversial,³⁸ and the absence of panel data prevents us from associating growth incidence facts to such traps. Nonetheless, there have been marked differences in access to services between poor and non-poor households in Chad. This is particularly the case for health, where rich households have a disproportionately much better access to quality services than poor households, and is reflected in the fact that rich households declared that they enjoyed better health than poor households in the 2011 survey.³⁹ This is also the case for education – both

³⁸ See Kray and McKenzie, 2014.

³⁹ Source: World Bank 2013. Analysis suggests that the richest quintile consumes 46 percent of public health resources while the poorest quintile only consumes 6 percent of public resources. Coverage of antenatal care and institutional delivery is also strongly associated with wealth and residence: only 5 percent of the poorest women deliver at the health center against 45.8 percent of women from the wealthiest quintile. Significant differences across income

for general and technical-vocational education, where public funds are disproportionately allocated to universities.⁴⁰ This could also be the case for justice⁴¹ and security⁴² services, whose poor capacity may be particularly detrimental to the most vulnerable segments of the society.

Figure 13: Healthcare Funding, Constant Unit Cost Assumption, 2011



Source: World Bank, 2011b.

46. **Assessment of the poverty impact of inequitable access to services also needs to account for the effectiveness, quality and impact of such services.** In spite of progress in recent years, service delivery is absent and/or of poor quality in Chad, as reflected by the recent Country Policy and Institutional Assessments regarding health (2.0), education (2.5) and social protection (2.0). Thus, the fact that these services are unequally distributed between poor and non-poor might not have significant direct consequences on poverty.

47. **Primary education, for instance, seems to have little impact on rural poverty, even if relatively well distributed between quintiles.** Econometric analysis on ECOSIT3 data indeed suggest that rural households' consumption is not significantly influenced by the level of primary education of the head of household. Said differently, poor and non-poor in rural areas cannot be strongly differentiated by their level of primary education or literacy (coincidentally, demand for

quintiles also exist for child care services like immunizations and treatment of acute respiratory infections with gaps of about 20 percent between poorest and wealthiest.

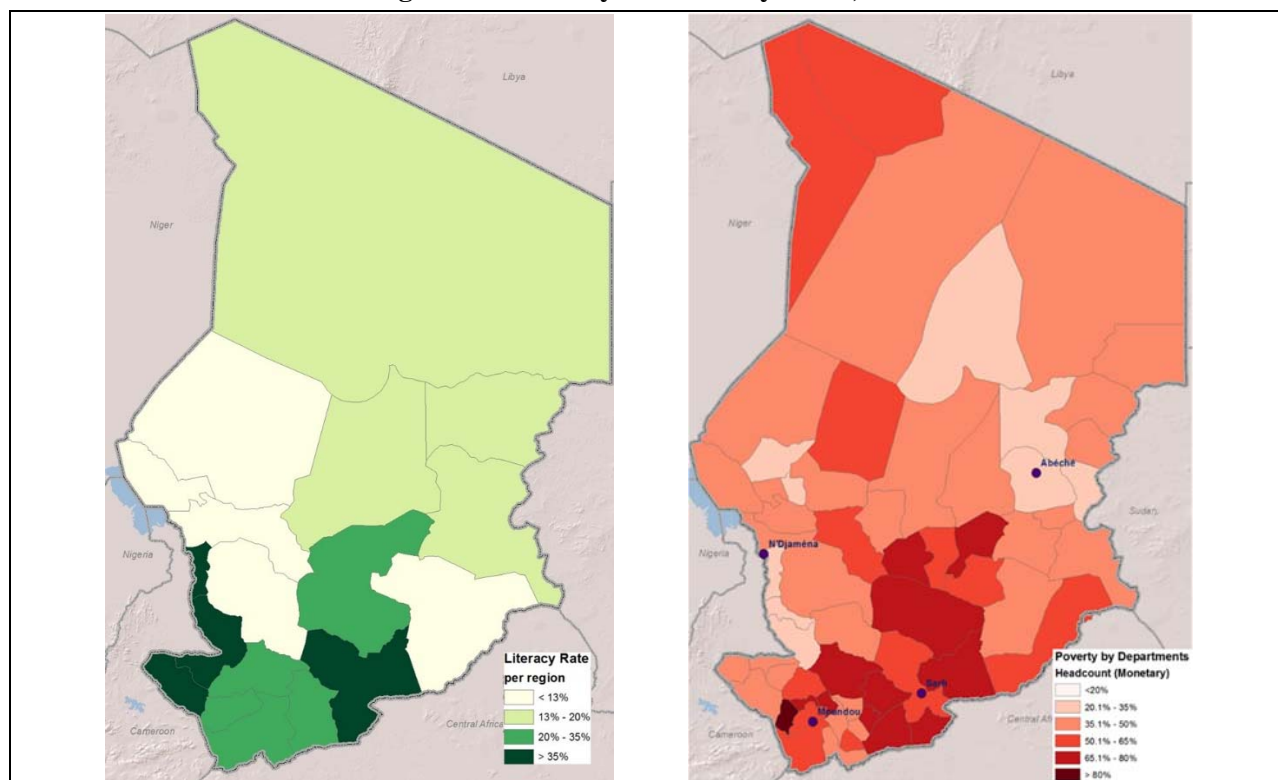
⁴⁰ Source: World Bank 2013b.

⁴¹ Chad's quality of the legal and judicial system was rated 2.0 (in a range of 1-worst to 6-best) in 2014 in the World Bank's Country Policy Institutional Assessment, reflecting its lack of independence from the executive powers, high corruption levels and poor capacity.

⁴² Chad's crime and violence as an impediment to economic activity was rated 3.0 (in a range of 1-worst to 6-best) in 2014 in the World Bank's Country Policy Institutional Assessment. While the professionalization of the army in recent years has contributed to stabilize the country and has given Chad the capacity to participate to peace keeping missions in the region, crime nonetheless remains pervasive and the police's capacity to assure security at all times, in rural areas in particular, very limited.

education does not significantly increase with income).⁴³ One explanation for this result could stem from the very low quality of primary education, as frequently mentioned in SCD consultations, and reflected in several input and output indicators. International tests for instance suggest that primary school Chadian students score lower than African counterparts.⁴⁴ Another, non-exclusive explanation relates to the limited economic utility of education in most parts of rural Chad where agriculture (including livestock) relies mostly on traditional techniques (transmitted from generations to generations), and is not capital and technology intensive. This second explanation could be corroborated by the fact that literacy in rural areas does not either seem to generate significant economic returns. Decomposing the analysis between poor and non-poor further reinforces this point: additional return from one more year of education is significantly lower for poorest deciles than for richest deciles, underlining the likely influence of complementary factors (such as the economic environment and poor quality of education) to explain the primary education rate of return.

Figure 14: Literacy and Poverty Rates, 2011



Source: World Bank staff design based on ECOSIT3 and 2009/10 population census data

48. **One positive indirect effect of primary education, though, originates from its impact on fertility.** Econometric analysis on ECOSIT3 data indeed suggests that one additional year of education for girls is correlated with a reduction of approximately 0.3 births. As further discussed

⁴³ Source: INSEED 2013a. In 2011, 65 percent of poor households' heads had no instruction, against 60 percent for non-poor households' heads. In rural areas, the literacy rates of poor and non-poor households' heads stood respectively at 22 and 21 percent in 2011. The difference was more pronounced in urban areas, 39 versus 52 percent.

⁴⁴ Source: World Bank 2013b.

in next paragraphs, gender-related differences in poverty can in effect be explained for a large part by the impact of fertility on females' participation in economic activities. But girls' enrollment in primary and secondary school, while growing in recent years, has consistently remained much below that of boys. At 70 percent in 2012, Chad's gender parity index lagged much behind low income countries (94 percent) and Sub-Saharan African developing countries (90 percent).⁴⁵

49. **While the economic impact of primary education is limited, the data indicate that certain segments of the rural workforce are able to benefit from post-basic skills.** Rural workers who possess some degree of secondary or vocational education, and who are employed as wage labor, tend to have higher levels of household consumption. This finding suggests that some forms of specialized education may offer significant returns, even in the largely traditional rural economy. Focusing on these skills (with possibly a combination of post-basic cognitive, non-cognitive and technical skills) could potentially improve productivity and earnings among poor rural households. Examples of technical skills which could support productivity gains are animal health, land and crop management, and use of techniques for more intensive farming (including small scale irrigation).

50. **Evidence of the short term impact of health on poverty seems stronger.** Econometric analysis on ECOSIT3 data indeed suggests that the number of consultations at a health center is positively correlated with participation in the labor market and with total households' expenditure. And as reviewed above, distance to health services is quite strongly correlated with poverty. Further analysis shows that distance influences poverty not only through the frequency of consultations but also through the missed days of work associated with longer travelling time: the probability of an individual working the week before is negatively correlated with the distance it takes to the nearest clinic in rural areas. Evidence is less clear cut for the sickness rate, to a large extent because of the self-reporting nature of the indicators, but a disabling condition like diarrhea is estimated econometrically to be negatively correlated with returns to education. Additionally, there is significant evidence that sicknesses have high costs for the poor and particularly affect family farmers. For instance, malaria transmission generally coincides with the planting and harvesting seasons making the illness's impact particularly damaging, and estimates of days lost to malaria vary across Africa and across studies but are generally high, ranging from a month to over two months per year. These estimates are very relevant to Chad because malaria is the disease with the highest incidence (source of 45 percent of primary care service use), followed by acute respiratory infections and diarrhea.

51. **Beyond fertility, gender differences affecting poverty status in the short run are linked to differentiated access to economic factors of production, such as land and labor.** Econometric analysis conducted on ECOSIT3 data suggests that an additional birth reduces by 8 percent the probability to be economically active, once controlled for other factors such as age and education. This effect, of very large magnitude given the very high average number of births per woman in Chad, can be explained through its negative impact on maternal health, on the one hand, and the reduced time left for economic activities given childcare responsibilities, on the other hand. But women participating in economic activities face other constraints. Table 3 below reports use of agricultural techniques by gender in 2011, using ECOSIT3 data. All differences in gender are

⁴⁵ Source: World Development Indicators.

statistically significant. Women cultivate less land, have less access to chemical inputs, paid labor, community support, and are confined to subsistence crops and traditional farming.⁴⁶ While output per ha is not recorded in ECOSIT3, a recent similar study in Niger where such data is available records similar patterns, and suggests that gender-related differences in access to production factors leads to lower output per hectare in plots managed by women, in spite of decreasing returns to scale in extensive farming. The same study suggests that gender gaps increase with overall productivity growth. In other words, productivity-enhancement techniques and inputs, when made available, are getting captured by men.

Table 3: Female Access to Production Factors in Agriculture, 2011

	Female HH	Male HH
Cash crop (cotton) [yes=1]	0.01	0.064
Traditional farming [yes=1]	0.862	0.77
Chemical inputs [yes=1]	0.07	0.142
Labor [# workers]	17.2	25.5
Paid labor [share]	0.481	0.53
Area [logs]	1.152	1.518
Community support [yes=1]	0.376	0.449
Total observations	1209	4189

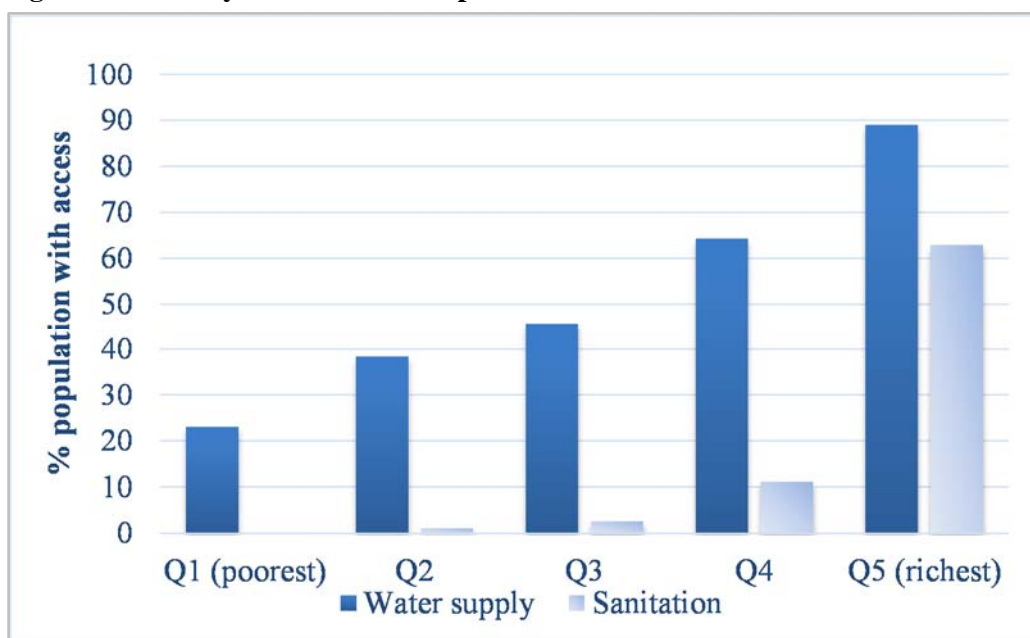
Source: World Bank staff calculations based on ECOSIT3.

52. **Electricity and sanitation are unequally distributed across households.** Data on electricity access is very scarce, but it is estimated that, given generation, transmission, and distribution capacities, no more than 5 percent of the population, all located in cities, are connected to the grid. There is no nationally integrated grid. Besides the capital N'Djamena, there are a few other cities having their own small grids. Access to safe water and sanitation facilities, while improving in cities, remains extremely low among poor households. In rural areas, 55 percent of the population had no access in 2012 to safe water (private connection or public standpoint), and 93 percent had no access to sanitation. Direct impact on poverty is difficult to be estimated, but international evidence suggests large indirect impact through water borne diseases, such as malaria and diarrhea, and inadequate sanitation facilities keeping girls out of school. Macroeconomic costs of poor sanitation and water quality were estimated at 0.3 percent of GDP in 2012, mostly through their impact on premature mortality.⁴⁷

⁴⁶ Women's lower access to land is due to traditional attitudes and gender discrimination in customary/religious law, with women mainly accessing land through male relatives and family (meaning that widows are especially vulnerable).

⁴⁷ Source: World Bank Staff calculations. Such computations capture the annual share of lost future earnings over the span of life.

Figure 15: Poverty and Access to Improved Water Sources and Sanitation Facilities



Source: World Bank staff calculations based on MICS (2010).

3. GROWTH PATTERNS

This chapter discusses Chad's recent patterns of economic growth. Main messages include: Recent economic growth was driven by public consumption and investment (fueled by oil rents), but did not result in any significant productivity improvement, in agriculture notably. Lack of effective public investment and a very poor business environment are general deterrents to private investment. In agriculture, such issues are compounded by the ample climatic variations and associated investment risks.

Macroeconomic Developments

53. **Chad's recent economic history has been largely defined by the start of oil production in 2003.** Production rose rapidly to a peak of 200,000 barrels per day in 2004, then gradually declined to 100,000 barrels per day in 2013, before rising again in 2014 as new oilfields came online.⁴⁸ Chad's growth was boosted by a major threshold effect in 2004, with real GDP rising by 55 percent over 2002, the last year before the start of oil production. Controlling for this structural break, non-oil GDP growth was broadly similar during the oil period (2005-13), at 7.6 percent, than during the nine years before the oil era (1994-2002), when it averaged 8.1 percent.⁴⁹

54. **Growth during the oil era was driven by public demand.** Fiscal revenue from oil exploitation averaged US\$1.5 billion every year from 2007-13 (after investments in exploration and exploitation were amortized), broadly tripling Government total revenue. In turn, oil revenues financed public absorption (consumption and investment), which grew much faster than private absorption. In nominal terms, public consumption and investment respectively grew by 11 and 14 percent per year between 2005 and 2013; private consumption and investment (excluding in oil industries) both grew annually by 5 percent over the same period. Non-tradable sectors of construction (excluding for oil activities), utilities and administration benefited from such public demand (with respective real GDP growth rates of 47, 14 and 10 percent per year from 2005-13). Commerce, fueled by growing imports, and transport, fueled by imports and better road infrastructure also grew steadily, by 8 and 6 percent respectively.⁵⁰ Handicraft grew by 8 percent, probably mirroring the development of the urban informal sector. In contrast, the food crops sector grew by less than 5 percent, livestock by less than 2 percent and industrial agriculture (cotton) growth rate was negative. Furthermore, the food crops sector exhibited the highest degree of growth volatility, with a standard deviation in growth rates four times higher than the average growth rate. Construction and transport sectors also exhibited high growth volatility, probably because of the inconsistent pace of the public investment program and the unstable security situation.

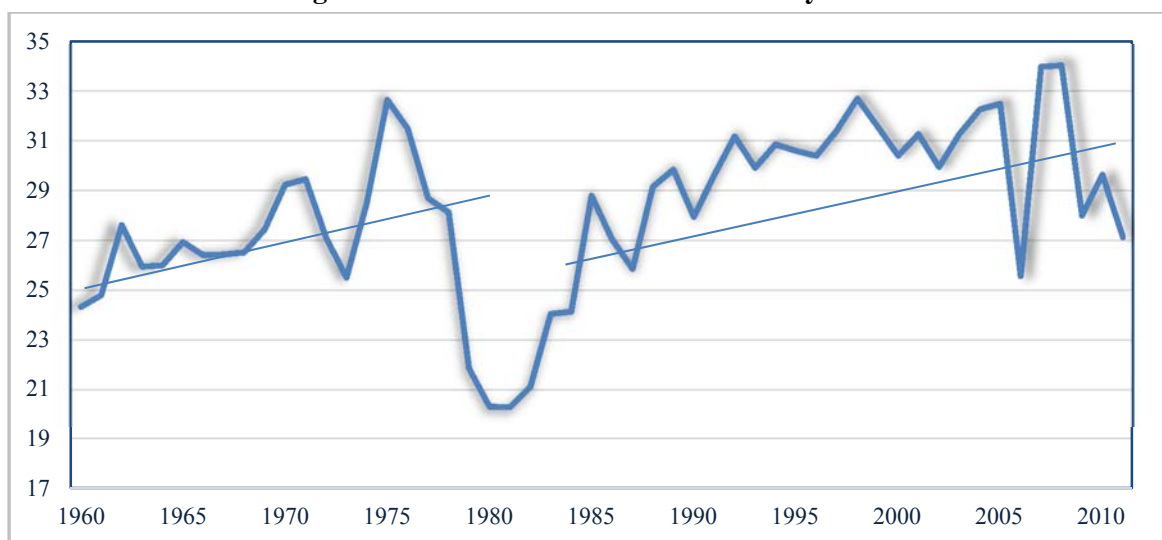
⁴⁸ Assuming no new discoveries are made, production is expected to peak again in 2018-19 and then gradually decline.

⁴⁹ There is considerable uncertainty regarding deflators used for national accounts. Consumer price inflation rates derived from the comparison of ECOSIT2 and ECOSIT3 suggest much higher inflation than that recorded in N'Djamena only though the consumer price index and used for national accounts. PPP-based deflators (source: Feenstra et al., 2013) suggest much lower GDP growth rates during the pre-oil and oil (3.9 percent between 1994 and 2002; 3.7 percent between 2005 and 2013).

⁵⁰ Manufacturing also grew steadily over the period 2005-13 (12 percent per year in real terms), though from a very low base. In 2013, the manufacturing sector was representing 1.5 percent of non- oil GDP.

55. **Despite a massive sustained increase in public investment, total factor productivity (TFP) has grown only modestly during the oil era.** Staff calculations of TFP suggest that investments made during the oil era did not generate significant productivity gains. While more volatile, TFP continued to grow slowly after 2003, at the estimated rate of 0.4 percent a year.⁵¹ Controlling for the structural break of the years 1978-82 (corresponding to the period of conflict with Libya), TFP growth for the period 2003-11 does not significantly differ from the periods 1960-78 or 1983-2003. This observation is consistent with the poor effectiveness and efficiency of many of the very large public investments of the last decade recorded in the World Bank Public Expenditure Review.⁵² It is also consistent with the fact discussed earlier that public investment did not attract private investment in similar magnitude – except maybe for the transport industry which benefited from better road infrastructure. It is finally consistent with the very slow accumulation of human capital (and its poor economic return, as discussed in Chapter 2), and the stagnation of cereal yields.

Figure 16: Chad Total Factor Productivity Index



Source: World Bank staff calculations based on Feenstra et al. 2013.

56. **Environmental degradation did significantly contribute to the slow growth in productivity.** Estimates of costs of environmental degradation undertaken by the Bank, while constrained by poor data availability, nonetheless allow for the identification of major environmental pressure points from an economic perspective. These include air quality (indoor - due to the widespread use of charcoal, and ambient – due to emissions in urban areas), water (through its impact on human health; and not including impact on fisheries), and land degradation (overgrazing; deforestation for cultivation and wood; and soil depletion and erosion from poor crop management). Annualized costs of such environmental degradation, also understood as foregone revenues in the absence of addressing its causes, could range between 3 and 4 percent of total GDP, mainly affecting the non-oil primary sector (including livestock and forestry). In proportion of the non-oil primary sector GDP, land degradation could exceed 9 percent.

⁵¹ TFP calculations exclude oil rents.

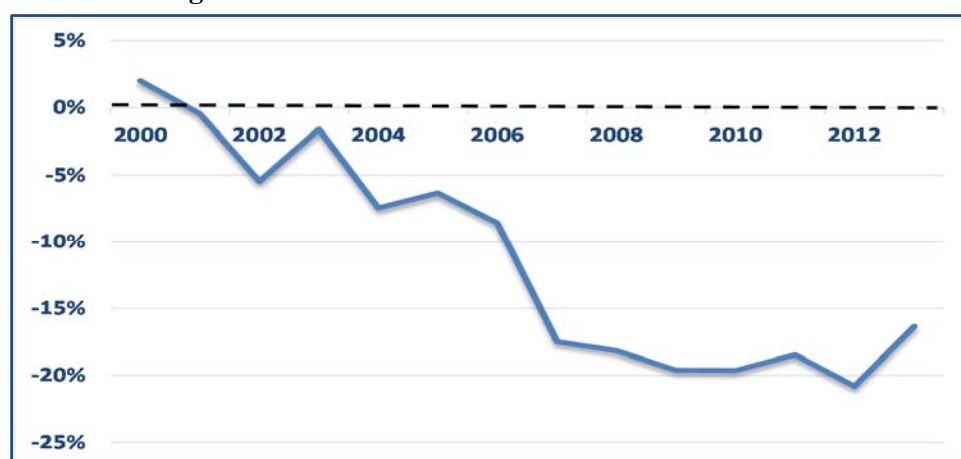
⁵² Source: World Bank 2011b.

Table 4: Annual Costs of Environmental Degradation, 2012 (% of GDP)

	Mortality	Others	Total
Air	0.4%	0.2%	0.6%
Indoor Air	0.3%	0.1%	0.4%
Ambient Air	0.1%	0.0%	0.2%
Water	0.2%	0.1%	0.3%
Sanitation	0.1%	0.0%	0.2%
Drinking Water	0.1%	0.0%	0.1%
Water Quality	0.0%	0.1%	0.1%
Land	0.0%	2.6%	2.6%
Cropland	0.0%	0.5%	0.5%
Deforestation	0.0%	0.7%	0.7%
Rangeland	0.0%	1.4%	1.4%
Total	0.6%	2.8%	3.5%

Source: World Bank staff calculations

57. **Slow productivity growth strongly weakened external competitiveness.** Chad belongs to the Economic Community of Central African States (*Communauté Économique et Monétaire des Etats de l'Afrique Centrale*, CEMAC), whose common currency—the Central African Franc—is pegged to the euro. Slow productivity gains combined with higher absorption did result in a significant widening of the non-oil current account deficit (financed with oil export receipts). Using various techniques, IMF estimates suggest an over-valuation of the real exchange rate in the range of 15-22 percent.⁵³ In 2012, Chad was ranked 148th out of 148 countries in terms of global competitiveness.⁵⁴ All sub-indicators of the global competitiveness index, other than macroeconomic management, rank at the very bottom. This includes notably institutions and infrastructure, markets efficiency (goods and financial in particular), and innovation.

Figure 17: Non-oil Trade Balance over Non-oil GDP

Source: World Bank staff calculations based on IMF, 2014a.

⁵³ Source: International Monetary Fund, 2014a.

⁵⁴ Source: World Economic Forum, 2013.

58. **Despite the fragile and volatile environment, macro stability has been broadly preserved.** The high volatility and dependence on oil revenues, the low and declining competitiveness, the weak budgetary management and the fragile environment (including open conflicts) to which Chad is exposed are all potential channels of significant macro-economic disruption, which could take the form of sudden changes in relative prices (inflation, exchange rates), sovereign default, or financial sector crises. But Chad managed in the last fifteen years to largely contain such volatility within the budget, with little contagion effects on the external and financial accounts. If domestic arrears were incurred (possibly affecting investment decisions for contractors depending on public markets), the overall budget deficit stayed within reasonable limits (averaging 3.0 percent of GDP between 2000 and 2013), and pooled foreign reserves from CEMAC largely exceeded Chad's import needs.⁵⁵ The consumer price inflation rate was low on average (averaging 2.6 percent between 2000 and 2013), its variations mostly driven by food price variations, and banks overall stayed very liquid, with solid capital adequacy ratios.⁵⁶

Sectoral Contributions and the Business Environment

59. **Agricultural productivity has remained low and stagnant.** TFP estimates indicate that agricultural productivity in Chad stagnated between 2005 and 2011, while it grew by an average of 1.4 percent in the rest of Sub-Saharan Africa (SSA).⁵⁷ Chadian cereal⁵⁸ yields have long been below the SSA average and are not on track to converge with it. In 2013 cereal prices in Chad were still above the average observed prior to the 2008 food crisis.⁵⁹ With little access to capital and modern technology Chadian farmers typically increase production through extensive - rather than intensive - cultivation. Instead of investing in improved inputs, equipment and cultivation techniques, farmers simply expand the amount of land under cultivation. However, extensive agriculture is becoming more difficult as fertile land becomes increasingly scarce,⁶⁰ and what little public support is provided to the agricultural sector has not generated a substantial improvement in per hectare productivity. A recent public expenditure review for the agriculture sector indicates that while public expenditures have increased relative to agricultural output since 2003, support to the sector (including both crops and livestock) is equivalent to just 4.1 percent of sectoral output and 1.1 percent of GDP.⁶¹ When expenditures on rural development and food security programs are included, the total rises to 1.9 percent of GDP, or 10.3 percent of total public spending.

⁵⁵ Chad's imputed foreign reserves at the regional central bank (BEAC) averaged 1.7 months of imports since 2000, and ranged between 1 and 3 months. But pooled reserves from the CEMAC members, from which Chad can withdraw foreign currency, have typically been much larger. In 2013, BEAC reserves were 17 times larger than Chad's imputed reserves. Source: International Monetary Fund, 2014b.

⁵⁶ In 2013, the banks' risk weighted capital adequacy ratio was 18 percent, non-performing loans did not exceed 9 percent of total loans, and liquid assets to total assets 33 percent. These figures reflect the prudence of banks in the face of creditors' solvency issues, and the limited number of bankable projects.

⁵⁷ Source: International Food Policy Research Institute, 2013.

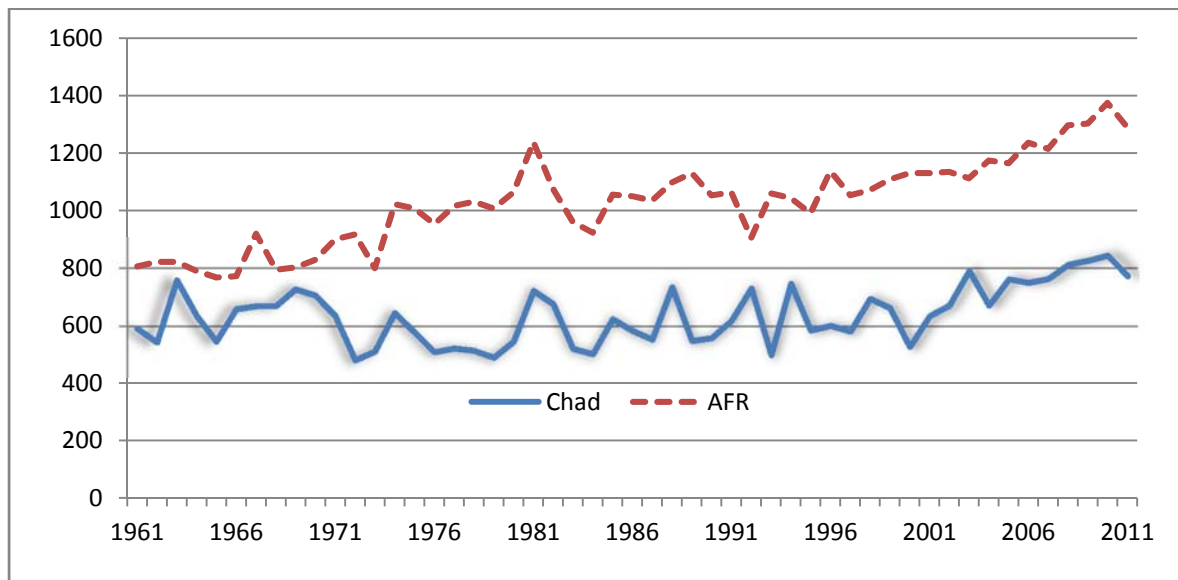
⁵⁸ Corn, sorghum and millet are Chad's primary cereal grains.

⁵⁹ Source: Food and Agriculture Organization, 2014.

⁶⁰ Source: World Bank World Development Indicators, 2015. Chad's total cultivated area has grown at an annual average rate of 3.9 percent since 1983.

⁶¹ Source: World Bank 2014a.

Figure 18: Cereal Yields (Kg/Ha)



Source: World Development Indicators.

60. **Unpredictable weather conditions, long-term climate risks, and the small scale of most Chadian farms all deter private investment.** Cereal yields in rain fed agricultural zones are highly volatile, especially in areas with lower total rainfall. The amount of cultivated land also varies widely from one year to the next, reflecting the uncertainty faced by farmers at the beginning of the rainy season. Between 1981 and 2011 cereal yields deviated by an average of 9 percent per year from their long-term trend, and in some years they varied by as much as 21 percent. The amount of land under cereal cultivation also deviated by an average of 9 percent, and in some years by as much as 29 percent. Unable to insure against the risks or mitigate them through irrigation and drainage, farmers have little incentive to invest in costly inputs, such as fertilizers and improved seed varieties, which could be wiped out by a single bad season.⁶² On the supply side, financial access, input marketing and insurance schemes are constrained by the small scale of most farming operations, as agricultural producers in Chad cultivate fewer than 5 hectares on average. Financial providers, input suppliers and insurers all face large fixed transaction costs, and serving a large number of smallholder clients is prohibitively expensive.

61. **Farmers' associations could pool risks and facilitate access to markets, but it is unclear whether the producer organizations that currently operate in Chad are capable of effectively executing these functions.** Producer organizations have been growing rapidly in recent years. Some have emerged spontaneously as village-level cooperatives, while others have been formed by professional service providers on behalf of the government or the private sector.⁶³ However, the proliferation of farmers' association does not appear to have had a positive impact on aggregate production and thus household welfare, as discussed in Chapter 2. The most

⁶² Staff analysis of ECOSIT3 data suggests that, if the majority of farmers with access to irrigation continue to practice traditional agriculture, their propensity to use fertilizers is 50 percent higher than among farmers without access to irrigation.

⁶³ A 2008 government survey identified more than 37,000 producer organizations in the Sudanese region alone, including 21,000 agricultural groups, 1,600 health security groups, 7,900 input management groups, 6,600 village groups, 400 cooperatives and 75 unions.

extensively organized subsector is cotton, Chad's largest cash crop. Cotton farmer associations are responsible for both the distribution of inputs to producers and the marketing of output; they serve as fora for dialogue on sectoral issues and advocate policies at the national level. Yet, despite the efforts of producer groups, cotton output has fallen by 75 percent over the last decade, as improvements in sector governance and productive efficiency were insufficient to offset a decline in global prices.

62. Livestock production is a large and diverse subsector, and its potential contribution to Chad's economic development remains largely unexploited. Data on the livestock sector contribution to the economy is scarce. The Food and Agriculture Organization (FAO), based on livestock census data from 1978, estimates that the national herd could be composed of 1.5 million camel heads, 8 million cattle heads, 7 million goat heads and 3 million sheep head. But as already discussed, its contribution to GDP growth has been modest in the last decade in spite of its size (10-12 percent of GDP in recent years). Indeed, for the majority of households, who own less than 5 heads (1.6 tropical livestock unit on average), livestock is not kept to sell meat, skin or milk, but to produce personal insurance, manure and hauling services. In contrast, a smaller share of households – maybe 30 percent of herders, derive cash income from selling livestock on domestic and regional markets. Pastoralism, which refers to the extensive mode of herding on natural grazing lands - thus involving some transhumance, is the dominant production system, accounting for 80 percent of the national herd, and is considered most adapted to Chad's ecological conditions. At the same time, its economic growth is constrained by reduced rangeland over time, limited water access, and a high degree of informality. In the livestock sector, it is estimated that at least half of exports are informal,⁶⁴ in response to perceived cumbersome and complex export procedures, sanitary standards and high taxes, at the border in particular.⁶⁵ In comparison, public service offered to the sub-sector - sanitary services, security and water points in particular, remains low.⁶⁶ Informality most likely limits access to formal finance and insurance services, and the possibility to service a rapidly growing domestic and regional demand for livestock products.

63. Chad's secondary sector is constrained by the country's weak electricity and water infrastructure. Over the last decade, growth in the secondary sector has been driven by construction activities, especially oil-related construction and public works, as well as light manufacturing and handicraft, which is mostly concentrated in the informal urban economy. An oil refinery was built in 2013 and refines about 20,000 barrels a day for the local market. However, the public utilities remain severely underdeveloped, and investment in electricity and water services represented less than 0.1 percent of GDP in 2012. Installed energy capacity is under 130 megawatts, and the sector suffers from serious governance issues. Electricity development is also hampered by a lack of options for reducing generation costs (e.g., through connection to regional grids), as well as low population density, which limits the potential for economies of scale, a tariff structure that does not allow for full cost recovery, and inefficient revenue collection systems. The urban water sector suffers from similar governance and capacity issues, and substantial investment will be required to increase access to drinking water and sanitation. In 2012, 72 percent of the

⁶⁴ Source: Koussou, 2013.

⁶⁵ The wedge between price paid to herders at the border and sales price in the end export market is estimated to be substantial, the end sales price being twice as high as the price received at the border (World Bank 2014b), the result of high border taxes and lack of competition between formal exporters.

⁶⁶ While being broadly of comparable economic sizes, public expenditures allocated to the livestock sector have on average been 6 times lower than that allocated to crops (World Bank 2014a).

urban population had access to improved drinking water sources, most from public standpoints, while 49 percent had access to improved sanitation, including shared facilities.

64. **The service sector is dominated by informality.** An estimated 550,000 workers are employed in the informal services sector, primarily commerce, housing and transportation, while just 200,000 work in the formal service sector, mostly in public administration, health, education and private services such as banking. Due to the oil sector's impact on the urban economy, both the formal and informal services sector have grown rapidly over the last decade, but the lack of integration between the two appears to have negatively affected both. The formal service sector faces unequal competition from informal firms, which do not pay taxes or adhere to regulatory requirements. Meanwhile, informal firms often lack access to key formal services, particularly financing, and are unable to work directly with the public sector.

65. **This high degree of informality is the result of Chad's extremely difficult business climate.** The Doing Business survey ranked Chad 185th out of 189 countries in 2014. Particular problematic areas for doing business include starting a business (185th), paying taxes (186th), and trading across borders (182nd) - see Annex 2, Governance and Business Environment. Private sector organizations cite high administrative costs, cumbersome regulatory burdens, and deficiencies in the commercial judicial system as major constraints to doing business.⁶⁷ Inadequate infrastructure and low levels of human capital present further obstacles to the development of the formal economy, and corruption among public officials may compel entrepreneurs to remain in the informal sector. About 30 percent of entrepreneurs in the urban informal sector report that formalization is too costly, and that registration (tax, business and social security administrations) procedures are too long and complex, while a remarkable 50 percent are apparently unaware that they are required to register their businesses.⁶⁸ While seen as a way to avoid paying too many taxes, staying informal also exposes entrepreneurs to higher risks (including corruption) and lower business opportunities. This is notably the case of public markets, only open for competition (when not single-sourced) to companies registered with the fiscal administration and duly paying taxes.

Table 5: Chad Tax System, 2014

	Chad	Sub-Saharan Africa
Payments (number per year)	54	38.2
Time (hours per year)	732	310.8
Profit tax (%)	31.3	17.6
Total tax rate (% profit)	63.5	46.2
CPIA Tax policies	3.0	3.3
CPIA Revenue administration	2.5	3.4

Source: CPIA and Doing Business Survey

⁶⁷ Source: Conseil National du Patronat Tchadien, 2011.

⁶⁸ Source: INSEED 2013c. One could infer that such unawareness is a reflection of the complexity of the system, exposing firms to ad hoc pressures from the administration. One could also possibly infer that, if aware of obligations, previously unaware firms would make the same choice that 3/5 of aware firms, that is, staying informal not to pay taxes.

4. POVERTY REDUCTION OPPORTUNITIES

This chapter identifies opportunities to accelerate poverty reduction before 2030. Main messages include: economic growth will be necessary but insufficient to eradicate poverty and strong re-distribution efforts, which can be afforded from a fiscal perspective, need to be undertaken. Given Chad's economic structure and poverty profile, interventions should target the agricultural sector, which requires both sustained improvements in marginal productivity and market connectivity. Over the longer term far-reaching structural reforms could promote faster, more equitable growth. However, good-governance policies must reflect Chad's complex and fragile political context.

Baseline Growth Projections

66. **If Chad's income distribution remains unchanged, real per capita consumption would have to increase by 9 percent per year for 15 consecutive years in order to eradicate poverty by 2030, a target likely out of reach.** Per capita consumption increased by just 1.7 percent annually between 2003 and 2011, and while the start of oil production has greatly increased GDP, the oil sector has had a very small impact on household consumption. The recent increase in inequality presents a further challenge to poverty reduction. Given the overwhelming concentration of poverty in rural areas, and notwithstanding the high rate of urbanization, increasing private consumption in rural areas is essential to reducing poverty. Accelerating the growth of per capita consumption from 2 to 3 percent in rural areas would generate a reduction in Chad's poverty rate five times larger than a corresponding acceleration in urban areas.⁶⁹

**Table 6: Poverty Rates in 2030 under Different Private Consumption
Annual Growth Assumptions**

Urban/Rural	0%	1%	2%	3%	4%	5%
0%	46%	39%	31%	26%	20%	15%
1%	45%	38%	30%	25%	19%	14%
2%	44%	37%	29%	24%	18%	13%
3%	43%	36%	29%	23%	17%	13%
4%	43%	35%	28%	22%	17%	12%
5%	42%	35%	28%	22%	17%	12%

Source: World Bank staff calculations.

67. **A more effective redistribution of growth dividends could nonetheless tremendously help.** Given the inherently narrow scope of the oil sector and the multifaceted, long-term challenges involved in developing Chad's rural economy, redistributive policies present an attractive option for rapidly improving household consumption. Oil revenues have made large-scale redistribution feasible, but the challenge of implementing such a policy remains daunting.⁷⁰

⁶⁹ These estimates are fully consistent with the 2008 World Development Report on Agriculture, which found that output growth in the agricultural sector is about four times more effective in raising incomes among extremely poor households than output growth in other sectors.

⁷⁰ Progressive transfer systems in SSA average 1.2 percent of GDP, and their targeting efficiency is typically low. In Chad total public spending on social protection was just 0.1 percent of GDP in 2013.

If per capita private consumption grew by 2 percent per year, and progressive transfers were targeted with perfect efficiency, eradicating poverty by 2030 would require a transfer amount equal to 2.1 percent of GDP per year, and the corresponding taxes would reduce the average consumption of non-poor households by 3.3 percent per year. Given the current low taxation rate (8 percent of non-oil GDP, against an estimated potential of 24 percent of non-oil GDP),⁷¹ a large scope exists for fiscal redistribution. Such redistribution could require simplifying the tax code to improve tax collection⁷² and take the form of cash transfers/social protection and/or public investment programs to specific economic sectors and regions (under the premise of improved efficiency).

Table 7: Redistribution Efforts Needed under Different Growth Scenarios to Eradicate Poverty

Growth (p.c)	Redistribution (% of GDP)	Redistribution (% of non-poor consumption)
0%	8.1%	14.9%
1%	4.2%	7.0%
2%	2.1%	3.3%
3%	1.0%	1.5%
4%	0.5%	0.7%
5%	0.2%	0.3%

Source: World Bank staff calculations.

68. **Prospective analysis suggests that rural per capita consumption could grow by about 2 percent annually over the period 2012-30, bringing down the national poverty rate below 30 percent by 2030.** A Computable General Equilibrium (CGE) was developed to explore various prospective scenarios for Chad.⁷³ It suggests that, under the current set of economic policies (baseline scenario), declining oil production (in per capita terms and proportion of the economy) combined with rapid urbanization could narrow the welfare gap between rural and urban households in the next years (see Figure 19). Real per capita private consumption is projected to grow by 1.2 percent a year in urban areas, against 2.2 percent in rural areas. Under assumptions of unchanged distribution of incomes within urban and rural households groups, such growth in real consumption could bring down the overall poverty rate to about 29 percent of the population in 2030, equivalent to 5.5 million people still in poverty (against 4.5 million in 2011). Eradicating poverty would then require complementary transfers from rich to poor households in the magnitude of 2 percent of GDP annually, under the optimistic assumption of perfect targeting. Projections also suggest that Chad's current macroeconomic stance is barely sustainable, as it overly relies on the consumption of natural resources in comparison with investments in physical and human capital, and would thus need to be significantly amended to sustain growth and poverty reduction gains over the long run.⁷⁴

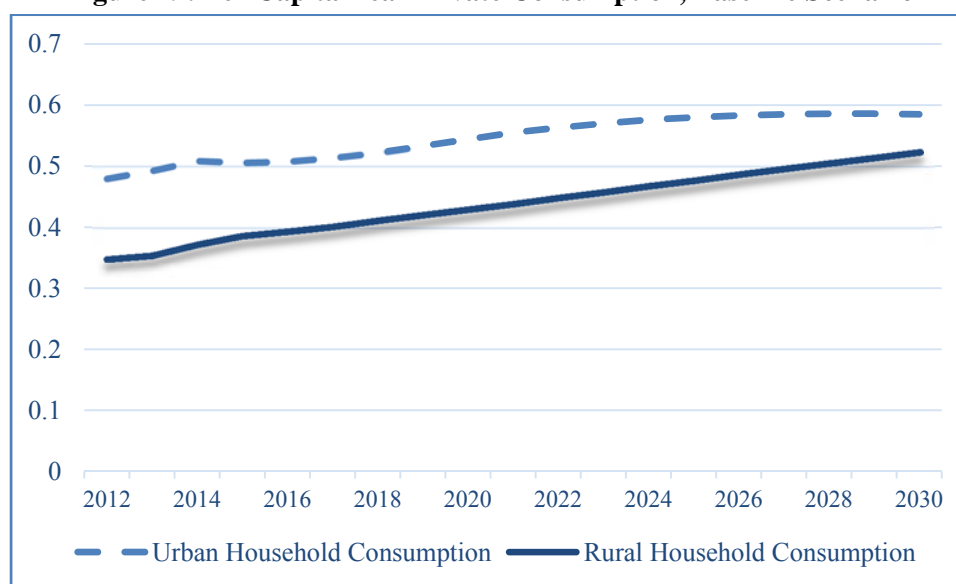
⁷¹ Source: International Monetary Fund, 2014a.

⁷² The C-inefficiency (defined as the revenue from VAT divided by the product of the standard rate and aggregate private consumption stood at 5 percent in 2011, against 20 percent in Central African Republic and above 35 percent in all other CEMAC countries. Source: International Monetary Fund, 2014a.

⁷³ See Annex 3 for a detailed discussion of the model's characteristics.

⁷⁴ From about 2.5 percent of GDP in 2012, adjusted net savings (measuring the net accumulation of wealth, after accounting for environmental degradation and resource depletion) would decrease to less than 1 percent of GDP by 2030 (see Annex 2, Sustainability).

Figure 19: Per Capita Real Private Consumption, Baseline Scenario



Source: World Bank staff calculations.

69. **These projections are subject to a number of important caveats.** The CGE model is based on assumptions regarding population growth and urbanization rates, land and labor supply, and TFP that are far from certain. Furthermore, major disruptions caused by climatic change, conflict, political instability or poor macroeconomic management cannot be fully integrated into the model. The baseline scenario could be dramatically altered by (i) more rapid and severe climate change effects than are currently projected, (ii) an unpredictable outbreak of violent conflict, political upheaval or regional instability, or (iii) a deteriorating fiscal situation caused by revenue collection failing to meet expectations.⁷⁵

70. **Nonetheless, this baseline scenario suggests that, in spite of rapid urbanization, the vast majority of economic opportunities will still be located in rural areas.** The baseline scenario projects an urban population growth rate of 4.6 percent per year, well above the rural growth rate of 3.0 percent. It also assumes a quicker growth rate in formal labor supply (reflecting progress in secondary and tertiary education). However, the agricultural sector will continue to drive demand for labor (almost entirely informal). Results indeed suggest that, by 2030, 74 percent of the jobs would still be in agriculture, against 75 percent in 2012. Over that period, about 4 million jobs would be created. Such projections illustrate the persistence of households' consumption patterns (high demand for food), and Chad's limited export opportunities and comparative advantages in non-agricultural sectors.⁷⁶

⁷⁵ Source: International Development Association and International Monetary Fund, 2014. The attainment of the HIPC completion point in 2015 is expected to reduce the risk of external debt distress, though long-term sustainability will still depend on improved tax collection and effective control over public spending, as well as the progressive diversification of exports.

⁷⁶ In an alternative scenario, we simulate more rapid total factor productivity growth in non-agricultural sectors - say the consequence of a broad-based improvement in the investment climate. While such an improvement would generate significant welfare gains, for both urban and rural households, it would not significantly change the allocation of labour demand between urban and rural areas.

71. **Structural transformation would demand a long term vision.** Structural transformation, the process by which average productivity increases as factors (labor in particular) are reallocated to higher productivity sectors (typically, from agriculture to industry), is generally seen as the traditional pathway out of poverty (as notably observed in Western Europe in the nineteenth century and East Asia from 1950-70). Thus, repeated failures to transform agriculture and new comparative advantages (for labor intensive manufacturing) revealed by trade liberalization since the 1980s prompted many countries to focus interventions in sectors where poor could end-up – rather than where they were. This approach was nonetheless questioned in recent years, acknowledging the absence of effective structural transformation in many countries, in Sub-Saharan Africa in particular,⁷⁷ narrow productivity gaps,⁷⁸ and recognizing that some pre-requisites were needed for structural transformation to occur. The latter include, first, the realization of significant productivity gains in agriculture, second, a flexible labor market and minimum education⁷⁹ to adapt to new sectors, and third favorable conditions for trade and investment (under-valuated currency, low transport costs, and a good investment climate including efficient enabling services, electricity supply notably, and low barriers to entry). Accordingly, igniting a process of structural transformation aimed at reducing poverty reduction in Chad would require establishing these initial conditions, including the significant growth in agricultural yields that would generate the needed savings to sustain education and health demand and finance agricultural diversification,⁸⁰ to be followed by the development of an educated labor force⁸¹ able to move out of agriculture and work in secondary and tertiary sectors.⁸² On the receiving end, these sectors would in turn benefit from cheaper food prices (the result of improved yields) and larger domestic demand to develop competitive labor-intensive activities,⁸³ as well as from a significant improvement of the investment climate, currently ranked among the worst in the world. Lower transport costs and higher contestability in non-tradable sectors would also contribute in the medium term to reduce the negative impact of Chad's over-evaluated real exchange rate on its external competitiveness.

⁷⁷ Source: McMillan and Rodrik 2011, World Bank 2012.

⁷⁸ See McCullough (2014), which suggests that productivity gaps between agriculture and other sectors (in reality, small nonagricultural informal enterprises) in Sub-Saharan Africa are much lower when computed using microeconomic data rather than macroeconomic data, thus reducing the potential for productivity gains through labor reallocation. This conclusion originates from the large underemployment in agriculture, where most farmers only work during the rainy season.

⁷⁹ Source: Dessus, 1999, and McMillan and Harttgen, 2014.

⁸⁰ See Dercon (2009) which suggests that agricultural productivity growth provides the only pathway towards economic growth and poverty reduction in resource-poor landlocked African countries.

⁸¹ The development of an educated labor force would certainly be facilitated by lower dependency ratios - the so-called "demographic dividend". Nevertheless, demographic projections suggest that dependency ratios could only modestly decline between 2010 and 2030, from 116 to a range between 93 and 102 percent. Source: Agence Française de Développement et Institut de Recherche pour le Développement, 2013.

⁸² INSEED (2013b) points to the very low degree of social mobility in Chad: A child's level of education highly depends on his father's level of education; a child's choice of occupation highly depends on his father's occupation, and in rural areas, 87 percent of children (once becoming adults) have the same occupation as their fathers. Raising social mobility will necessitate higher effective education levels and skills for greater employability in high-productivity economic activities.

⁸³ See Bourguignon (2008) and De Janvry and Sadoulet (2009) for a discussion on the impact of agricultural development on other sectors, notably through the decline in the relative price of food.

Alternative Growth Projections

72. **Reducing poverty through growth and job creation thus calls for promoting first and foremost “poor intensive” sectors.** Acknowledging the long term prospects for any structural transformation, and the necessary complementarity between urban and rural economic areas, a selected number of short term growth-promoting policy options can be explored using the CGE model, focusing on a set of options to raise farmers and herders real incomes, and to improve service delivery.

73. **A first set of policy options would contemplate the possibility of raising agricultural productivity.** For Chad, it is believed that sustainably raising yields could be best achieved through a wider use of improved water and land management techniques (including crop-livestock interventions, agroforestry and conservation agriculture), as well as through greater access to drought resistant improved seeds. These solutions present several advantages. First, they are not capital intensive, and could thus be largely disseminated with low organizational risks. Second, they would not entail a radical departure from traditional techniques that farmers have been using. And third, by reducing yields volatility, they could also significantly reduce overall investment risks and thus raise the attractiveness of complementary factors such as fertilizers, which are also more responsive on non-depleted soils. Feasibility studies suggest that the use of improved water and land management techniques alone could raise yields by approximately 80 percent.⁸⁴ In contrast, more capital-intensive options would be limited to a fewer number of beneficiaries and present larger social, environmental and governance risks.⁸⁵

74. **Simulations suggest that raising cereal yields could have a large macroeconomic impact, but would need to be complemented with greater market access to be sustained.** We simulate the impact of extending improved land and water management techniques to 50 percent of rain fed areas where sorghum and millet is cultivated (for a total cost of 3.2 percent of 2015 GDP spread over five years, and an annual permanent gain equivalent to 1.7 percent of 2015 GDP). Results suggest that such interventions could reduce overall production costs of cereals by 25 percent in comparison with the baseline scenario. But such a decline in prices would only translate in a 10 percent increase in demand, given currently limited outlets out of the rural world (in Chadian cities, or through increased external competitiveness). Higher farm productivity would also free labor that would reallocate into low-productivity commerce and livestock sectors. As a result, real consumption of rural households would only modestly increase, and its impact on poverty (an overall poverty reduction gain of 1.4 percentage point by 2030 – 225,000 individuals lifted out of poverty) would be partially offset with declining urban real incomes. Such interventions could nonetheless present several other advantages, which the CGE model cannot measure, such as the impact of reduced yield uncertainty on investment and food security. With only one representative rural household (averaging poor and non-poor rural households), the model

⁸⁴ Source: Comité Permanent Inter Etats de Lutte contre la sécheresse dans le Sahel, 2014.

⁸⁵ See Agence Française de Développement (2011) for a prospective discussion of the various possible models of rural development in Chad. The note defends the view that support to existing farming structures will better ensure balanced rural-urban development and environmental sustainability and reduce the potential governance risk of large public investments.

cannot either capture the possibility that poor rural households, who are net consumers,⁸⁶ could benefit more from declining prices than non-poor rural households who are net producers. Nonetheless, these results illustrate the importance of not overlooking demand side effects. Greater connectivity between production zones and markets and between food-surplus and food deficit areas, as well as marketing and processing efforts to raise urban demand for domestic agricultural products could help lift such demand constraints.

75. A second set of options foresees the need to develop external markets for agricultural goods, as a way to relax the constraint of limited growth in domestic demand. With declining oil receipts (at least in per capita terms), new exports will need to be developed to finance essential and inelastic imports (equipment, medicine, etc.) and sustain economic growth, which will not be able to rely on domestic demand alone. Accessing export markets would also allow rural households to reap the fruits of productivity gains they could be making, instead of having urban consumers benefit from it through dampened prices. That being said, extremely high international transport costs⁸⁷ and an over-valued currency seriously limit options for export promotion to goods not costly to transport and to markets facing similar exchange rates movements. Conversely, there is possibly a scope for greater competition with imports of bulky products from more distant markets, should rural areas be better connected with Chadian cities.

76. The recently updated Diagnostic Trade Integrated Study (DTIS) identifies a number of export opportunities in poor intensive sectors.⁸⁸ The DTIS identifies Nigeria and Cameroon as Chad's most promising export markets, given relatively low transport costs and, for Cameroon, a stable exchange rate. Estimates of export market potential also account for informal trade (livestock notably), particularly prevalent with Nigeria. The DTIS then identifies goods which present some export potential, given their income potential, their revealed comparative advantage, and their proximity (from a production function perspective) to goods already produced. Most, if not all of these goods belong to the agricultural sector, and include: livestock (beef), transformed skins, Arabic gum, shea and ground nuts, onions, garlic, cotton and sesame. On the import side, the domestic production of corn and rice could compete with foreign wheat and flour. Removing constraints to growth in these sectors would open new external and domestic markets for Chadian farmers while also reinforcing food security and welfare of the vast majority of farmers who do not participate in international value chains.

⁸⁶ According to FEWSNET (2011), "the poorer households in agricultural areas - generally one-third to one-half of the local population - are dependent on the market (plus in-kind wages in grain) for 50 percent or more of the basic food they consume in years of normal production. For the very poor minority amongst them it is usually closer to 75% of their annual consumption. This is even true in the most productive areas". Similar patterns can be observed in Mali (World Bank 2015a).

⁸⁷ Chad's cost to export and import containers are among the highest in the world. Trade almost entirely relies on a single outlet, the N'djamena - Douala corridor, which covers 87 percent of trade flows. While infrastructure of the corridor could be improved (World Trade Organization, 2013), logistical arrangements (as measured by the World Bank Performance Logistical Index, where Chad ranked 113 out of 160 countries in 2014, before Mauritius or Tanzania) suggest that governance problems in the management of the corridor (including collusion between transport firms for market segmentation) and the monopolistic position of the Douala port are crucial determinants of the situation, against which Chad has little leverage (Terivaninthorn and Raballand, 2009).

⁸⁸ Source: Enhanced Integrated Framework, 2014.

77. **The impact of export-promotion policies can be simulated by improvements in the terms of trade for crops and livestock.** A 20 percent increase from 2015 in the exports price paid to farmers is assumed (as a way to simulate reduced transaction costs and racketing at borders), half of its related cost being financed by higher public consumption in 2015 to compensate rent seekers, the other half being borne by foreigners. Results suggests a positive export response, with agricultural (livestock in particular) exports receipts being 55 percent higher in 2030 than in the baseline scenario. Nonetheless, the marginal impact on rural households' consumption would remain modest (given the small share of exports in total income, and the higher price of agricultural goods on domestic markets). It would also be nil for urban households who would indirectly pay the brunt of the reform as principal taxpayers. All in all, the poverty rate in 2030 would be reduced by 0.6 percent compared with the baseline scenario. Thus, a complementary scenario,⁸⁹ where productivity in the livestock sector is raised in addition to improved terms of trade, suggests that efficiency gains could generate a much larger export supply response than pure reallocation gains. Rural households' income would increase accordingly, but the overall impact on aggregate private consumption would also be mitigated by the large cost of the intervention, reducing financial resources for alternative developmental uses. Given the concentration of large herds within few households with low poverty rates, the impact of such an intervention on poverty would remain uncertain. Assuming neutral distribution of gains within urban and rural households, results suggest that such reform could generate poverty reduction gains in the order of 0.8 percentage points compared with the baseline scenario.

78. **A third set of options would contemplate improving the efficiency of public service delivery through governance reforms.** As discussed in Chapters 1 and 2, the potential for efficiency gains in public investment and service delivery is substantial. As an illustration, we simulate first the impact of a public procurement reform which would reduce mark-ups by 10 percent through more competition. Half of savings generated by Government from reducing mark-ups would be used to compensate rent-seekers through higher public consumption in 2015. The macroeconomic impact of such reform would be significant and would accrue equally to rural and urban households (in terms of relative increases in real per capita consumption), for a total poverty reduction gain of 1.8 percentage point by 2030 compared with the baseline scenario.

The Case for Wider Protection against Individual and Collective Shocks

79. **Despite their generally positive impact, the reforms described above would not be sufficient to significantly accelerate private consumption growth in rural Chad.** Combining the three sets of reforms could reduce poverty by about 3 percentage points by 2030, from 28-29 to 25-26 percent. But such reforms would most likely not generate self-sustained gains, given the very low savings rate and access to financial services of rural households. Besides, direct interventions to raise poor farmers' productivity would require wide interventions over a long period of time— and thus commensurate implementation capacities, and would need to be complemented with improved market connectivity to be sustained. Such implementation capacity – in the form of farmers' organizations, extension services, or skills – does not exist yet in sufficient quantity in Chad. More focused interventions to promote livestock exports would be less demanding from an implementation capacity perspective, but could fail to directly benefit poor

⁸⁹ This scenario assumes a 2 percent annual increase in total factor productivity in the livestock sector from 2016 financed through public investment projects with a 20 percent rate of return (World Bank, 2015f).

households. Finally, governance reforms would need to overcome strong opposition from vested interests.

80. **In this context a simple cash transfer mechanism could provide an effective means to speed the pace of poverty reduction.** The immense majority of households do not pay direct taxes, limiting the redistributive power of traditional fiscal policies. Cash transfers, however, provide a viable alternative. Cash transfers could be either conditional or unconditional, but in either case the system would need to negotiate the inherent tradeoff between targeting efficiency and high coverage rates. Combining different methodologies, including geographical and community-based targeting and proxy means testing, could provide a balanced approach, assuming that a minimum level of local accountability can be maintained.⁹⁰

81. **While shocks may affect all households, it is likely that poor households have less means to cope with them.** Conflict and climatic shocks may affect all households, poor or non-poor, and no data is available to comprehensively assess at the microeconomic level the exposure to and consequence of shocks. But it is very likely that poor households have less means, savings notably, to mitigate their impact, and that aggravation of inequalities in rural areas observed between 2003 and 2011 could be explained by such differences in initial conditions between poor and non-poor. A recent impact evaluation of a safety net project implemented in Niger suggests that savings and investment rates (in livestock and fertilizers notably) of beneficiaries from cash transfer programs had significantly increased and stayed higher after the completion of the project.⁹¹ Greater participation in savings clubs, facilitated by the project, also significantly increased among beneficiaries, providing greater access to finance. In contrast, formal insurance mechanisms may appear more complicated to establish and implement given capacity and governance risks.

82. **Labor intensive public works could also strengthen communities' capacities to adapt to shocks.** Another, non-exclusive way to protect households and redistribute resources to the poorest would consist in implementing public works to mitigate the impact of shocks, including soil and water conservation, natural disaster risk management, small-scale irrigation that can help mitigate production risks; and storage and feeder roads to guard against marketing risks.

Implementation Capacity at Central and Local Levels

83. **Implementation capacity, at central and local levels, is obviously a critical dimension to be considered when exploring poverty reduction opportunities.** As noted in Chapter 1, implementation capacity is low in Chad, and in some cases, compounded with severe governance issues. World Bank analysis, based on consultations held in Chad and evidence gained from past budget execution and project implementation suggests that ambitious reform programs (say customs or utility reforms), centrally managed, have little probability of succeeding, especially if

⁹⁰ The design of these mechanisms should also reflect regional differences in poverty and vulnerability to shocks, as well as formal and informal relationships between the government and its constituents, and administrative capacity constraints. Some of these approaches are currently being piloted.

⁹¹ Source: Stoeffler et al. (2015).

squarely meant to address technical or capacity problems.⁹² In many instances, rents to be tackled on the ground of efficiency and equity are central to Chad's fragile political equilibrium, and their elimination could be forcefully opposed by those who benefit from them. In such a context, it is rare to observe endogenous governance progress, and historically, external and technological shocks have often been at the origin of the development of institutions preventing future rent seeking.⁹³ Improved transparency, while not sufficient, is in this case a necessary condition to foster change when conditions will allow for it.

84. To reduce potential risks of capture, implementation capacity needs to be strengthened at local and technical levels. As emphasized by stakeholders during SCD consultations, there is possibly greater scope for improving governance at the local level (including dispute settlement mechanisms) through social accountability, than at the central level. On a related note, initiatives to strengthen governance and management capacity in service delivery sectors (agriculture, water, education, health, local electricity mini grids) should have greater chances to succeed than that directed towards institutions which do not operate at local levels and do not require de-concentrated structures.

85. Fragility exerts an additional constraint on implementation capacity. Fragility entails frequent governments reshuffles, and great difficulty to plan resource allocation over the medium term. In this context, implementation capacity needs to be strengthened at the technical level to protect policy continuity, and interventions need to be designed as simply and modestly as possible to deliver rapid results and be scalable.

⁹² In some rare cases though, implementation capacity - not to be confused with efficiency, was demonstrated, and lessons could be drawn from them for possible replication in other sectors. Progress was notably recorded in the effective development of the national paved road network, which grew from 350 kilometres in 2000 to 1,900 in 2013.

⁹³ Source: Bourguignon and Dessus, 2009.

5. BINDING CONSTRAINTS TO POVERTY REDUCTION

This chapter identifies the most binding constraints to poverty reduction, based on opportunities identified in the previous section. Main messages include: In Chad's challenging fragile context, interventions to address high investment risks in agriculture (through improved land and water management, access to markets and the supply of post-basic skills) and strengthen resilience (social protection, access to health in rural areas, local governance) would probably have an higher impact on poverty in the short run than those aimed at addressing cost of and access to finance, universal access to primary education, or poor urban infrastructure. The success of these interventions will be conditioned on the continued maintenance of security and budget stability. Several other constraints, which would require strong implementation capacity and time to be addressed, also need to be tackled rapidly to sustain poverty reduction gains and shared prosperity in the medium term. These include raising the quality of education, curbing fertility rates, and improving the business environment to set the conditions for future structural transformation out of agriculture.

86. To select the most binding constraints to poverty reduction, a two-step approach is followed. First, a list of potential constraints is established using the systematic filter provided by a tailored version of the growth diagnostic framework to Chad's poverty reduction opportunities, based on evidence provided in previous chapters. Second, the constraints are assessed against a number of criteria, including short term impacts, political feasibility, implementation capacity, affordability, evidence-based and complementarities, per World Bank guidelines on Systematic Country Diagnostics.

87. A tailored version of the growth diagnostic⁹⁴ decision tree is used to help identify and cluster potential binding constraints to poverty reduction in Chad. Instead of focusing on binding constraints to growth, the proposed approach consists in identifying binding constraints to reaping the poverty reduction opportunities discussed in the previous chapter, namely:

- GDP growth centered on rural economic sectors of activity, with particular attention paid to environmentally sustainable improvement in cereal yields and livestock productivity and greater access to markets.
- Strong redistribution efforts from rich to poor households to complement broad-based growth efforts and reduce the vulnerability of the poor households to the individual and collective shocks to which they are exposed.

Similar to the growth diagnostic decision tree, such constraints can be classified into various groups: (i) access to physical and human capital, (ii) social returns to various economic activities, (iii) individual appropriation of the fruits of investment and entrepreneurship efforts (including risks). In turn, the capacity and incentives of authorities to address constraints identified within these three categories can be considered as constraints of a higher order.

⁹⁴ Source: Haussmann *et al.* 2005.

Access to Physical and Human Capital

88. **In their endeavors to develop economic activity, farmers/herders need to mobilize various factors of production:** land, water, labor, and finance to purchase seeds, fertilizers and equipment (carts, plows, livestock). The availability and cost of such inputs may be constrained by several factors.

89. **Finance does not appear as a binding constraint at the macroeconomic level.** Chad's Gross national savings have been hovering around 20 percent of GNI in the last decade (and a similar ratio can be observed when excluding foreign direct investment for oil activities from the numerator and oil income from the denominator), and spreads at which Chad can borrow are relatively low. Recently, the Government of Chad borrowed at LIBOR + 6 percent. Oil reserves constitute important collateral and debt sustainability prospects should improve with the possible attainment of the HIPC completion point in 2015.

90. **Households have poor access to financing, but cost might not be the issue.** In 2012, average lending rate in Chad was 9.0 percent close to CEMAC average (8.6 percent), and this cost has not seemingly changed since. Yet, most poor households and informal firms do not have access to credit from commercial banks. Absence of bankable and secure projects in agriculture and livestock, high fixed costs of banking in relation to the size of the projects, absence of collateral, widespread informality and ineffective commercial courts (see below the discussion on justice) are probably more serious constraints. As a matter of fact, lending by the banking sector (totaling 8 percent of GDP in 2012) is concentrated on a few large urban enterprises, and micro finance does not currently constitute a sizeable substitute for poor households, as it is too small (3 percent of total credits to the private sector – or 0.2 percent of GDP) in the face of recurrent insecurity in rural areas, harassment from officials, supervision and technical capacity issues. Thus, specific potential constraints to be addressed to improve access to finance could include:

- *Lack of organization and integration of poor farmers and herders around market-based clusters in value chains.* Organizing smallholders and herders around value chains would reduce fixed costs of financing and access to inputs and allow the emergence of bankable projects. It would be facilitated by the strengthening of producers' organizations, as discussed in Chapter 3.
- *Lack of agricultural insurance mechanisms.* High exposure to the various production and market risks is considered a major deterrent to investment in modern agricultural techniques, as discussed in Chapter 3. Various options could be explored to lift this constraint, including crop insurances.

91. **While access to land does not appear to be a binding constraint in general, it is a significant issue for women.** A very large share of arable land is still not cultivated in Chad, and there is no significant relationship between poverty and the amount of land cultivated. Tension between farmers and herders are concentrated on cultivated lands, as transhumant livestock is being fed with crops residuals. Nonetheless, women typically have lower access to land overall, and fertile lands in particular, as discussed in Chapter 2. Thus, a specific potential constraint to be addressed to improve access to land could include:

- *Women's weak land tenure.* Removing this constraint could improve land allocation efficiency, in particular for widows and divorced women. This would necessitate addressing the de facto and de jure prevalence of discriminatory customary laws. Women's greater access to land would also be facilitated in the short run by greater access to paid labor and childcare services.

92. **Insufficient availability of labor at peak time is certainly a constraint.** Using traditional techniques, farming is labor intensive, and lack of available labor during peak times of sowing and harvesting constitute a constraint. This constraint is exacerbated for women who bear childcare responsibilities. Poor health, due to lack of access to health services, and the use of wood and charcoal energy is also likely to affect labor productivity in the short run. In contrast, primary education does not seem to constitute an immediate binding constraint to poverty reduction, as discussed in Chapter 2. Thus, specific potential constraints to be addressed to increase farmers labor availability and productivity in the short term could include:

- *Women's insufficient time for economic activities.* Long term consequences of high fertility rates, in terms of dependency ratios or demand for service delivery are well known, see Chapter 1. But in the short run high fertility also impacts women's health (and thus labor productivity), as well as the time left for labor after child care, as discussed in Chapter 2. The organization of childcare services (including higher school retention), and the supply of multi-task platforms could constitute a short-term response to this constraint.
- *Poor access to health care.* As discussed in Chapter 2, insufficient demand of (affordability) and supply (distance and quality) of health services have a significant impact on poverty.
- *Insufficient use of clean energy for heating and cooking in rural areas.* Prevention against major diseases would complement health services improvements to reduce sickness and its impact on poverty. Infectious respiratory diseases rank particularly high in Chad due to excessive use of wood charcoal, see Chapter 3, and the supply of alternative cleaner energy (e.g., gas and solar stoves) could significantly reduce the prevalence of such diseases and their impact on poverty. A lower use of charcoal would also contribute to reduced deforestation and would improve soil preservation.

Social Returns to Economic Activities in the Rural Sector

93. **Social returns can be significantly influenced by factors beyond farmers' control.** This includes in particular the provision of public services, in the form of direct supply of public factors of production (roads, electricity, water infrastructure), or in the form of services to accompany private sector activities, such as extension and sanitary services.

94. **Given the seemingly low level of total public and private investment in agriculture, it is difficult to assess its return.** At the aggregate level, social rates of return to private investment seem high, around 19 percent between 2005 and 2013. But this average could conceal very large difference between sectors. Given the seemingly high proportion of investments going to non-tradable urban sectors, one could infer that returns have been higher in non-tradable sectors (possibly in the form of rents above normal profits for those benefiting from access to markets and induced demand from oil revenue). Assessments of returns to private investment in agriculture are

more difficult to make given the paucity of data on private agricultural investment. Rough estimates (based on the assumption that rural households' savings are all invested in agricultural activities) suggest relatively high returns against low private investment rates. Analysis of banking credit to various sectors suggests that distribution of bank lending among various economic activities is skewed toward construction and the energy sector (both mostly funded from public sources or heavily dependent on government subsidies) and commerce.

Table 8: Sectoral Allocation of Banking Credits, 2012-13

Term maturity of credits	Short	Medium	Long	Short	Medium	Long
	2012			2013		
Agriculture	3%	5%	13%	5%	5%	7%
Extractive Industries	2%	2%	5%	4%	2%	5%
Manufacturing	0%	0%	0%	0%	0%	0%
Energy	19%	9%	17%	19%	10%	14%
Construction and Public Works	33%	36%	11%	37%	24%	11%
Commerce	18%	13%	1%	11%	11%	0%
Transport and Telecommunications	7%	16%	29%	7%	23%	32%
Finance	1%	0%	0%	1%	1%	0%
Personal and Social Services	16%	19%	23%	16%	24%	31%

Source: World Bank staff calculations based on BEAC data.

95. **Various sets of external constraints could limit social returns in agriculture.** As discussed in Chapters 2, 3 and 4, lack of effective extension services aimed at improving water and land management (thus increasing yields, but also reducing climate-related investment risks), lack of post-basic skills needed for extension of such agricultural techniques, and lack of connectivity to local and international markets could be among them. The general lack of basic infrastructure services in rural areas (electricity, water, transport) could also be considered, for its impact on the development of on-farm and off-farm activities in rural areas. Thus, specific potential constraints to be addressed to increase returns on farms and livestock activities in the short term could include:

- *Insufficient use of techniques for sustainable management of natural resource (land, water) for crops and livestock.* As discussed in Chapter 4, greater use of simple and labor intensive water and land management techniques could significantly improve agricultural yields and reduce yields' exposure to climate volatility.
- *Lack of post basic skills for rural activities.* As discussed in Chapter 2, post basic skills can generate high returns, and a greater supply of them could be instrumental in the development and extension of improved land and water management techniques for crops and livestock.
- *High costs of international transport and distribution services.* As discussed in Chapter 1 and 4, Chad's trading costs are among the highest in the world and their reduction, through improved trade facilitation and customs clearance, trade liberalization and *increased* competition in transport and distribution services, would reduce the price of critical imported inputs (e.g., improved seeds, cement, solar equipment) and improve price

competitiveness of high value added export products (e.g., sesame). Improved stability and trading conditions in neighboring countries (Nigeria and Cameroon in particular) would also strongly contribute to the promotion of exports such as livestock.

- *Insufficient supply of basic infrastructure in rural areas.* As discussed in Chapters 2 and 3, lack of electricity, sanitation services and feeder roads have pronounced negative impacts on poverty. Access to electricity is almost nil in rural areas, and greater supply could promote off-farm development and the extension of support services to agriculture. Greater access to safe water in rural areas could also reduce the prevalence of water-borne diseases, malaria and diarrhea in particular, whose impact on labor productivity is believed to be severe. The development and maintenance of feeder roads in densely populated rural areas would facilitate market access through better connection to the national road network, as discussed in Chapters 2 and 4, and strongly complement efforts to improve yields in favor of rural households.

Individual Appropriation of Returns to Investment and Entrepreneurship

96. **Social returns to investment may be high, but their appropriation by farmers may be low.** Access to inputs and a good provision of public services need to be complemented with the guarantee that the fruits of investment and entrepreneurship will be retained by the farmers. This set of constraints includes, in particular, risks of losing your harvest or herd for a number of reasons which could not be addressed by the investment itself (such as investment in water and land management to reduce exposure to climatic variations; or purchase of drought resistant seeds), or through instruments to ex ante reduce investment risks, such as agricultural insurance or stabilization mechanisms.

97. **Macroeconomic risks do not seemingly affect the appropriation of social returns.** Under the CEMAC umbrella, risks of macroeconomic disruption (default, inflation) are low and do not seem to constitute a major impediment to private investment. Volatility in public investment might affect contractors' balance sheets, but contractors benefiting from public markets and their employees are probably not to be found among the poor. Distortions in goods and factor markets may formally exist (on imported goods in particular,⁹⁵ as well as in the cotton industry), but are being bypassed by the very high level of informality and related low tax collection rate.

98. **Poor appropriation of returns at the microeconomic level most likely constitutes on the other hand a major binding constraint to private investment and entrepreneurship.** This include in particular risks of predation, corruption, refugees pressures, as well as losses from local conflicts related to the use of natural resource. In the face of it, improved justice and security (and more broadly governance, as discussed in the next section) might help reduce the occurrence of such risks, and social protection mechanisms could also help most vulnerable households to cope with the consequence of such risks. But as discussed in previous chapters, lack of social protection, in itself, might also prevent risk taking and entrepreneurship. Thus, specific potential constraints

⁹⁵ CEMAC common external tariff averages 18 percent. To that must be added a number of taxes and fees which are de facto not collected on domestic goods. Export duties are also charged on livestock, 8 percent, and crops, 2 percent (of the f.o.b. export value). Source: World Trade Organization, 2013.

to be addressed to increase the individual appropriation of fruits of investment and entrepreneurship in the short run could include:

- *Ineffective justice and security services.* As discussed in Chapters 1, 2, and strongly voiced during consultations (see Annex 1) poor justice and security services exert a high toll on households' livelihoods, in rural areas in particular, and certainly act as deterrent to private initiative and investment.
- *Lack of social protection mechanisms such as productive safety nets and livelihood support in rural communities.* As discussed in Chapters 2 and 4, lack of assets and high exposure to shocks might not leave a choice for poor households but to engage in low return but relatively secure activities and strategies (e.g., extensive agriculture) which do not offer significant opportunities to escape poverty. While access to assets can be considered endogenous to the process of poverty reduction, lack of collective mechanisms to mutualize risks might be considered a constraint to the appropriation of returns to investment and to riskier entrepreneurship.

Authorities' Incentives and Capacity to Address Constraints to Poverty Reduction

99. **Most constraints listed above persist because of the insufficient capacity and incentives of local and national authorities to address them.** As discussed in Chapter 1 and 4, strengthening government capacity to accelerate development remains a formidable challenge for Chad given its difficult governance and fragile environment. Ultimately, capacity building efforts will need to be selective, concentrating primarily on essential government functions aimed at consolidating economic and social stability and where political space exists for reform. In this constrained context, World Bank country team members selected the following actionable constraints.

- *Insufficient budget stability.* As discussed in Chapter 1, the vulnerability of the budget to various potential shocks is a binding constraint to the efficient use of public resources. This primarily concerns investment expenditure which is too often poorly planned and not associated with commensurate current expenditure. This could also become a serious constraint to the expansion - or even protection, of basic service delivery. Against this backdrop, the constitution of fiscal buffers (or stabilization mechanisms) would tremendously help improve budget execution. This could be achieved through the continued reduction in the non-oil primary deficit, and the pursuit of efforts to render budget execution more transparent, including oil revenue projections and management, building on recent efforts to computerize the expenditure chain, become compliant with regard to the Extractive Industries Transparency Initiative and implement IMF-supported macroeconomic programs.
- *Poor management of health, social protection and education services.* Management capacity issues in health and education are highly detrimental to human capital formation and the effectiveness and efficiency of pro-poor spending, as discussed in Chapters 1 and 2. Given their de-concentrated nature and direct impact on poverty, these two sectors, as well as the nascent social protection sector, could be natural recipients of larger technical and financial assistance from partners and attention from the Government, building notably on recent achievements in the health sector.

- *Lack of community driven development strategies, and capacity to implement projects and settle disputes.* At the local level, insufficient capacity of communities to develop strategies and projects, and settle disputes is seen as a major constraint to improved governance (see Chapter 4 and Annex 1), reflecting both a pure capacity issue and the lack of effective social accountability mechanisms.

Ranking Constraints against Various Criteria

100. **Binding constraints were assessed through an integrative process.** A two-day retreat was organized among World Bank country team members to assess collectively the characteristics of potential binding constraints. Such potential constraints, listed in the previous section, were themselves proposed by the various team members, following a number of presentations by them.⁹⁶ During the retreat, participants were asked to rate each constraint according to the following criteria:

- *Short Term Impact* – Constraints which, if lifted, could entail substantial poverty reduction in Chad in the short run (less than 10 years). This assumes that the constraint itself could be lifted in the short run.
- *Political Feasibility.* Constraints which could be lifted without the risk of facing strong opposition in Chad.
- *Implementation Capacity.* Constraints for which implementation capacity exists to lift them.
- *Affordability.* Constraints that do not require excessive financial resources to be lifted.
- *Evidence base.* Constraints for which there is evidence that, if lifted, they could entail substantial poverty reduction.
- *Complementarities.* Constraints which when lifted would magnify the poverty reduction impact of other complementary constraints.

101. **Results of the assessment are reported and ranked in Table 9.** A dot indicates that the constraint was collectively ranked higher than the average on a given criteria. Conversely, the absence of a dot indicates the constraint was collectively ranked lower than the average on a given criteria. Constraints with most dots could be those to be addressed in priority.

102. **While these rankings remain subjective and have little scientific value, they may nonetheless inform development actors on the potential and trade-offs of lifting various constraints.** In themselves, these constraints were already the result of a selective choice and could thus all be considered as “most binding”.

⁹⁶ A total of twelve presentations were made during the retreat to inform all team members of various aspects of the poverty reduction challenge: outcomes of consultations in Chad; states of poverty and vulnerability; prospects for poverty reduction through growth and redistribution; conflict and violence; governance; rural development; environmental sustainability; private sector development; water; electricity; human capital and social protection; and gender.

103. **Constraints related to natural resource management, skills for rural development and access to healthcare rank high with respect to all criteria.** They are assessed as being (i) “removable” in the short run and potentially powerful in alleviating poverty, (ii) informed by strong evidence base, (iii) politically feasible, and (iv) affordable and/or having sufficient implementation capacity to be addressed.

104. **Constraints related to gender issues, budget stability and local governance also rank high in terms of potential for poverty reduction, but were assessed as more challenging from a political and social cohesion perspective.** The assessment for gender related constraints may stem from the fact that cultural norms largely explain the existence of these constraints, and that such norms may be difficult to address in the short run. The constraint related to budget stability is characterized with similar assessments: high potential, evidence based, and with good implementation capacity/affordability – but challenging from a governance perspective, as likely resulting from the fragile Chad context, as discussed in Chapter 1. The recent drop in oil revenues combined with additional security expenditures may render the constitution of fiscal buffers even more challenging in the short run in a context of increased competition for scarcer resources. In the same group, the constraint related to local governance is ranked as challenging politically (given the uncertain prospects for rapid political and fiscal decentralization), and would benefit from additional analysis and data to better assess the capacity and political economy of local institutions.

105. **A number of constraints were identified as challenging to address in the absence of sufficient implementation capacity.** These include agricultural insurance mechanisms, costs of international transport and distribution services, safety nets, organization of value chains in agriculture, justice and security, and service delivery (health, education, social protection) management. Removing these constraints would often require innovative cross-sectoral solutions, for which implementation capacity and experience is missing in Chad (as also reflected in the lack of evidence base to justify their immediate implementation). Some of these constraints were also assessed as challenging from a political feasibility perspective (international transport and distribution services, as related to cross-borders and cartel issues; justice and security as related to deep fragility issues; service delivery management as related to political deconcentration and decentralization). Trade facilitation to reduce transport costs, the deployment of social protection mechanisms and the organization of value chains were also assessed as calling for substantial financial resources, given upfront investment costs required and the need for minimum scale to ensure efficiency. The same applies to the deployment of clean energy and the development of rural infrastructure, which would necessitate significant financial resources and would only have an impact in the medium term.

106. **Complementarities between constraints were highlighted.** The last column of Table 9 reports potential complementarities between constraints to be addressed. For instance, cash for public work programs supported by social protection initiatives (H) could be used to encourage greater use of sustainable land and water management (A). Improved capacity of local communities to plan and implement projects (G) could also facilitate the identification of rural infrastructure programs (A, O). Supply of post basic skills (say through extension services managed by farmers’ organizations, B) could facilitate the use and extension of climate smart agricultural techniques (A). Social protection (J) and agricultural insurances (H), if encouraging private investment from smallholders, could magnify the impact of rural public investment (O)

through crowding-in effects. Improved land management (A) would facilitate the settlement of disputes around land and water use (G). Conditional cash transfers (J) could also be designed to promote access to health care (C).

Table 9: Most Binding Constraints According to Various Criteria

	Constraint	<i>S.T. Impact</i>	<i>Pol. Fsb.</i>	<i>Imp. Cap.</i>	<i>Afrd.</i>	<i>Ev. Bas.</i>	<i>Comp.</i>
A	Insufficient use of techniques for sustainable management of natural resource (land, water) for crops and livestock	•	•	•	•	•	B,G,H, J,O
B	Lack of post basic skills for rural activities	•	•	•		•	A, H,M,O
C	Poor access to health care	•	•		•	•	J,M,N
D	Women's insufficient time for economic activities	•		•	•	•	E
E	Women's weak land tenure	•		•	•	•	D
F	Insufficient budget stability	•		•	•	•	F,J, N,O
G	Lack of community driven development strategies, and capacity to implement projects and settle disputes	•		•	•		A,L,O
H	Lack of agricultural insurance mechanisms		•		•		A,B,K,J,O
I	High costs of international transport and distribution services	•				•	K
J	Lack of social protection mechanisms such as productive safety nets and livelihood support in rural communities	•	•				A,C,H,O
K	Lack of organization and integration of poor farmers and herders around market-based clusters in value chains	•	•				I,H
L	Ineffective justice and security services				•	•	G
M	Poor management of health, social protection and education services				•	•	B,C
N	Insufficient use of clean energy for heating and cooking in rural areas		•	•			C
O	Insufficient supply of basic infrastructure in rural areas		•			•	A,B,G,J,H

Notes: • indicates that the constraint was ranked higher than the average on a given criteria. *S.T. Impact*: Short term impact; *Pol. Fsb.*: Political feasibility; *Imp. Cap.*: Implementation capacity; *Afrd.*: Affordability; *Ev. Bas.*: Evidence base; *Comp.*: Complementarity.

107. **A number of preconditions on which development actors have little influence will need to be maintained to ensure that lifting most binding constraints will deliver poverty reduction gains.** In Chad, continued attention will need to be paid to conditions for peace and stability, given the highly fragile security environment. At the same time, the cost of maintaining

stability – believed to be high for the economy (through taxation and rents distributed to armed groups against their allegiance) will need to be kept under control, possibly through the reform of security services and greater international cooperation.

108. **In the longer run, a number of additional constraints will need to be addressed to sustain poverty reduction gains and ignite structural transformation for shared prosperity.** Such constraints would not generate immediate impact given the time needed for them to be lifted and deliver results, but would nonetheless need to be tackled rapidly, given their importance in the medium term. A case in point is the quality of primary education, which, if left unaddressed, would seriously compromise any poverty reduction objectives in the medium term. At the same time, raising quality of education would require massive efforts (from a fiscal and human resource perspective), given the number of teachers involved, and could only deliver significant results in a decade or so, when children having benefited from such an improved system would reach working age and enter the labor force. Another one is fertility, which, if left unaddressed, would continue to exert an immense toll on service delivery and households' capacity to save and invest in physical and human capital. Finally, Chad would benefit from rapidly tackling the many regulatory issues which strongly affect its investment climate, as discussed in Chapter 3. While this may not generate immediate impacts in terms of poverty reduction, creating the adequate business environment to absorb a more educated labor force which will progressively exit agriculture as yields rise will become instrumental to eventually meeting the goal of shared prosperity.

6. KNOWLEDGE GAPS

This chapter discusses main knowledge gaps to be filled in the next five years, acknowledging the weak capacity of Chad's statistical system. Main messages include: Chad's statistical system is weak and will take time and efforts to be strengthened. In the short run, priority could be given to the (i) undertaking of panel consumption surveys, with strong focus on agricultural activities, to be complemented with IT-based high frequency welfare surveys, and (ii) the wide dissemination of public financial management data to strengthen transparency and accountability on public resource allocation. From an operational perspective, an assessment of local communities' capacities will be a pre-requisite to the design and implementation of community-driven development projects.

109. **Many knowledge gaps would need to be filled to better assess Chad's poverty reduction progress, in particular through the timely production and dissemination of statistical data.** Statistical activities are defined by the National Strategy for the Development of Statistics 2011-2015. The Strategy aims to ensure the quality of statistical data needed to monitor progress towards achieving the objectives of development policy. In the area of economic statistics, consumer price and external trade statistics are regularly produced. But national accounts are a real problem in the country. They are produced very irregularly and are still not applying the full 1993 Systems of National Accounts. In addition, the structural statistics needed for national accounts are poor. The coverage of enterprises is very low, the external trade statistics are not detailed for the exercise and agricultural statistics are not reliable. In the area of social statistics, progress has been noted on data production since 2009 (Population census in 2009, Multi Indicators Clusters Survey in 2010, Poverty and Employment survey in 2011). A next MICS/DHS is under preparation since 2013 and is expected to be completed in 2015. However, the Chad statistical system still faces problems similar to most African statistical systems: low national budget for statistics, high turnover of specialized staff, poor incentives, outdated technologies, low access to data, and absence of data quality control. The weakness of human resources was evidenced by the fact that it took two years to complete the analysis of data collected for the poverty and employment survey fielded in 2011. Similarly, the livestock census (expected to shed light on livestock contribution to poverty), started in 2013, was not completed by mid-2015.

110. **In Chad's fragile context, it will be particularly important to develop tools to monitor poverty on a high-frequency basis.** High vulnerability to shocks often requires rapid response from authorities and partners, in the form of humanitarian assistance notably. However, monitoring and early warning systems are weak, often relying on ad-hoc solutions to assess the magnitude and impact of a given emergency. Besides, there is no monitoring system to track households' poverty status over time, and it is thus impossible to infer any statistical conclusions on the transient vs. permanent nature of poverty, the existence of poverty traps, or the impact of specific pro-poor interventions. Panel consumption surveys (with a strong emphasis on agricultural activities, as currently undertaken in Niger and Mali) need to be conducted, and could usefully be complemented with high frequency cell-phone based surveys. The former could allow tracking expenditure of given households over time, and the latter could, at moderate cost, provide real-time information to decision makers on the impact of specific shocks on populations (conflicts, prices, climate and natural disasters). Such a design would also allow to better survey nomadic populations, pastoralists, refugees and internally displaced persons.

111. **Ongoing efforts to computerize the public expenditure chain provide the opportunity to strengthen transparency in public financial management.** In 2014, Chad completed the computerization of the public expenditure chain, enabling authorities to monitor, at the central level, the status of the various public expenses (budgeted, engaged, spent, disbursed, etc.) and to publish on a timely and comprehensive basis budget execution reports. For the sake of strengthening executive accountability, such data could usefully be made available to interested bodies (Parliament, Civil Society, Media), for instance through the development of the BOOST software now in use in neighboring countries.⁹⁷ Besides, public financial management information systems need to be strengthened to better assess the distribution of fiscal and human resources across the country, through local governments and de-concentrated structures.

112. **From an operational perspective, a better assessment of local communities' capacities to implement projects would be required.** Chad's prospects for poverty reduction will necessitate greater empowerment of local communities, organizations and development actors in projects implementation. This may itself necessitate building capacity (the extent to which being unknown) and a better understanding of local institutions' political economy, including municipalities, professional organizations and non-governmental organizations.

⁹⁷ BOOST is not an acronym. It is the name of a new data tool developed at the World Bank to help enhance public sector performance through better budget monitoring and reporting.

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Annex 1: A Readout of the Systematic Country Diagnostic Consultations

N'Djamena, December 3-4, 2014

Introduction

113. **As part of the preparation of the Systematic Country Diagnostic, the World Bank held independent consultations to meet with Chadian government officials and representatives of the Chadian public and civil society.** The World Bank's consultations were geared towards thinking constructively about how to develop a framework to address the situation of extreme poverty in the country. The World Bank found it important to discuss the situation with a wide range of institutions representing Chadian society in order to better understand the country's situation and to confirm its support for actions already underway. The consultations were also aimed at collecting various contributions from these institutions in order to better identify and develop strategies for the years to come.

114. **The consultations were held on December 3rd and 4th 2014 in Ndjamen, in the Palace of January 15th. More than 70 representatives of non-governmental institutions,** associations from Ndjamen and surrounding regions (ADDAT, AFRICARE, AFPAT, APAD, APSOA, CEFOD, CERAD, CJFE, OXFAM among others), and representatives of the civil society (teachers, women, disabled people, orphans, pharmacists, potters, midwives, and veterinarians, among others) gathered for the event. Various Members of Parliament and of the administration also participated in the discussions (representatives of the Ministries of Economy and Finance, Planning, Agriculture and Environment, Labour, and Education were present, among others). Moreover, separate consultations were held with donors and the private sector notably the Chamber of Commerce, Société Générale Chad, and Commercial Bank.

115. **Ms. Mahamat Nour, Minister of Planning and International Cooperation opened the consultations and thanked participants for coming in such large numbers.** In the lead up towards the development of a new strategic engagement of the World Bank in Chad for the period 2016-2020, she reiterated the Chadian government's support for the World Bank's past and present initiatives aimed at reducing poverty in the country.

116. **The consultations were organized around different themes such as strategy, rural development, private sector development, human capital, and governance.** The sessions started with presentations given by World Bank representatives, all of which can now be accessed on a new website⁹⁸ that is dedicated to informing and exchanging with the Chadian public. The consultations, which were held publicly and attended by the media, revealed different perceptions of the situation and even tensions between men and women, farmers and pastoralists, non-governmental organizations and Members of Parliament. Some of the main conclusions that emerged are as follows:

⁹⁸ <http://consultations.worldbank.org/consultation/chad-country-partnership-framework>.

Endemic Poverty

117. **Chad is a large country where regional differences are important.** During the 2000s, poverty decreased in some regions but increased in others and has become more concentrated in certain regions.

118. **Rural areas remain the areas of greatest poverty and famine.** The poor are poorer in rural areas than in urban areas. While 47 percent of Chad's population lives below the poverty line, 90 percent of the poor live in rural areas. However, the rural exodus in Chad consists more of those seeking refuge rather than those seeking opportunities.

119. **Some speakers also underlined the extent of poverty in the cities,** where the cost of living is expensive, especially the costs of basic necessities such as food or housing.

120. **Various Chadian participants supported the quest for dialogue with the World Bank and are willing to contribute to the strategy of poverty reduction.** They mentioned the importance of involving civil society, alongside the government, in the programs that will be implemented. Others resented what they viewed as current development programs being spread too thin in their attempt to cover the entire country when they could be more impactful when targeted to specific effected regions. They suggest a decentralized results-based approach with a larger involvement of beneficiaries.

Agricultural Productivity Falls Short

121. **In Chad, strong tensions exist between farmers and pastoralists.** These rivalries are often linked to access to water or to the nomadic nature of herds on agricultural land. These tensions are a hindrance to economic development. Rivalries vary among regions since in some regions, farmers can also be pastoralists. Tensions are exacerbated by the behavior of administrative and military authorities at the local level, who usually own the livestock.

122. **Chad's agricultural potential is poorly exploited.** Only a very small share of arable land is cultivated and farmers are only allowed to own a limited amount of land. Farming methods remain traditional, which limits yields. Chadian agriculture doesn't adapt well to modern farming methods (low fertilizer use, low quality seeds), and also suffers from the high cost of inputs. Moreover, women have less access to resources such as a land and inputs than men.

123. **The health of livestock is equally problematic.** Some participants cited a lack of veterinary staff available to work with the farmers to help keep their animals healthy. Animals' diseases are not always controlled. Inability to meet international sanitary standards is a serious constraints to the development of agricultural exports.

124. **Agricultural yields are low and the livestock is not productive.** On the one hand, some products that have a high potential for poverty reduction have a very low yield (onion, corn, rice, groundnut, sesame, shea butter, garlic, fruits), and on the other hand, the cotton and Arabic gum farms have not fully developed their potential for diversification. Processing activities are very limited. For instance, eggs and milk remain largely imported despite the fact that livestock herds are relatively abundant, as both types of produce suffer from a lack of conservation devices, which is also related to an ongoing energy shortage issue.

125. **Because of the weaknesses of the agricultural sector, Chad exports little and takes little advantage of its proximity to major markets (such as exporting cattle to Niger and Nigeria).**

126. **The rural population faces risks related to food security and global warming.** The population is generally reluctant to consume imported products because it doesn't know if they meet certain standards. The population is also reluctant to use fertilizers because it doesn't know the consequences they might have in the medium and long term. Additionally, in recent years the rainy season has been shorter, which weakens the position of farmers, who see their production reduced without having employment opportunities for most of the year. On this point, participants mentioned the need to provide farmers a stipend for rent and a decent standard of living.

127. **Chad's agricultural sector faces a financing problem and must modernize.** The players in the agricultural sector emphasized the extreme difficulties they experience in gaining access to capital to grow their businesses.

Barriers to Private Sector Development

128. **The stakeholders of the banking system underlined the difficulty of financing the modernization of the Chadian agriculture.** The population is used to hoarding money and agricultural activity is mainly informal (individuals are even reluctant to work in the formal sector). Therefore, agriculture remains largely beyond the reach of the banking sector and increases banks' exposure to risk (the recovery rate on Small and Medium Enterprises, SMEs, is very low and banks do not understand the underlying mechanisms of the sector). In addition, banks in Chad are subject to strict regulations regarding money laundering, which makes it difficult to support largely undeclared activities.

129. **More generally, it is very difficult to start a business in Chad as production costs are high, access to credit is difficult, and supporting SMEs remains too risky for banks.** Commercial banks resent that the informal sector is so economically dominant and highlight the high risks associated with most of the projects stemming notably from the lack of training for entrepreneurs, the lack of transparency in public procurement, and the lack of public/private dialogue.

130. **However, the fight against poverty requires the implementation of major projects and investment in infrastructure,** access to energy in remote areas, rural electrification, construction, and transportation. In some remote areas, which have very limited access to the rest of the country, these activities urgently need support. This uneven geographical vulnerability also justifies a regional approach for the measures that will be implemented.

131. **Even though microfinance exists in Chad, several participants pointed out the difficulty of access to microcredit and wish there was more information available for those accessing it.**

Human Capital and Social Protection

132. **Chad's health system is weak.** Many residents do not have access to health care, which is especially problematic for women and for people living in remote rural areas in which health

infrastructure is almost non-existent. In addition, stakeholders pointed out that the existing health services are often of poor quality: the sick feel unwelcome, the few hospitals that exist often have to refuse patients, and health care costs are so high that many Chadians cannot afford them.

133. **The education system also faces many problems:** Population growth is so strong (68% of Chad's population is under 24 years old), that the system can't meet demand. Indicators such as illiteracy and dropout rates are very high. Furthermore, the quality of education is very low. Many community schools have very poor results, and this situation calls into question teacher recruitment methods and the content of their instruction. Parents also complain about the lack of resources for education, the lack of equipment, and of school canteens, as well as the significant financial contribution that is being asked of them. For example, chalk or the salaries of the community teachers are paid for by parents. In addition, 45 percent of the schools are said to have been built with materials provided by the parents. A parliamentarian expressed his support for a free and compulsory primary education for all school-age children.

134. **Girls' education is a major challenge for Chad.** As young girls are subject to traditions such as early marriage and their associated risks (early pregnancy), many of them leave school before the end of primary school and few of them start secondary school. In addition, school may even be considered as a threat, as girls that attend school are more likely to get pregnant early (there are not only risks on the way to school but also at school).

135. **Furthermore, the teaching curriculums at schools do not seem to be aligned with the economic needs.** Some stakeholders mentioned the fact that the best students try to join the public administration at the end of their studies and that the education system doesn't offer skills and training that would be useful for the economy, particularly for those who could work in small businesses. Today, very vulnerable people hold these jobs.

136. **Chad suffers from a lack of managers and of a highly skilled workforce in the private sector,** and the dialogue between the formal and the informal sector is still difficult.

137. **Social protection is very low.** Most workers do not have sustainable jobs and do not benefit from any social protection. Salaries are also paid irregularly in some sectors (such as construction). Women in rural areas, even when they work, don't receive any protection.

138. **Specific groups such as mothers, nomads, the disabled, prisoners, orphans, children out of school are very vulnerable lacking protection and assistance.** Whether it be in urban or rural areas, it will be difficult for these groups to benefit from economic growth. Women in particular are vulnerable to violence, little or no social protection, limited education, lack of information on fertility and the associated risks.

139. **Security is a key factor for the development of the country. Currently, the Chadians face significant insecurity.** In some areas, villagers must protect themselves from thieves, robbers, armed groups or highway robbers.

Governance and Decentralization

140. **Governance needs to be strengthened at national and local levels.** Many speakers had little faith in the central government's ability to reform and wish the citizens were better informed

about the country's situation and the government's policy. Capacity-building seems to be a priority and would likely enable greater public involvement. The State is viewed as ineffective in terms of public expenditure management. At the local level, village groups wish they could better express their rights. Generally, the participants were much more optimistic about the capacity of institutions to reform at the local level than at the national level.

141. **Chadian citizens wish to have a guaranteed independent justice system.**

142. **Chadian citizens emphasized that they have the right to be informed.** They would like to ensure that their contributions are well used and would like to be involved in the improvement of the system. They also wish they were better informed about their rights and duties. Some speak in favor of a decentralized approach of public services, with better monitoring and evaluation of the results and a greater involvement of beneficiaries.

143. **Citizens also spoke in favor of an enhanced oversight of public services,** which would limit possible abuses. They mentioned lengthy and non-transparent administrative procedures.

144. **The authorities emphasized the government's recent efforts to improve public services and the need for citizens to develop civic behavior.** They have the right to access public services but they also have to meet their obligations, such as paying taxes.

Cross-cutting Issues

145. **Material and financial capacity has to be strengthened in almost all areas.** The administration as well as the public service institutions (schools, hospitals, among others) lack effective capacity and are underfunded.

146. **The lack of data needs to be addressed:** more data would allow for better evaluation of the results of the policies implemented, ensure the monitoring of governmental action, support thematic studies (the Minister asked for further studies taking the regional disparities into account), and improve the implementation mechanisms for the programs (monitoring and evaluation), paving the way towards more result-oriented policies.

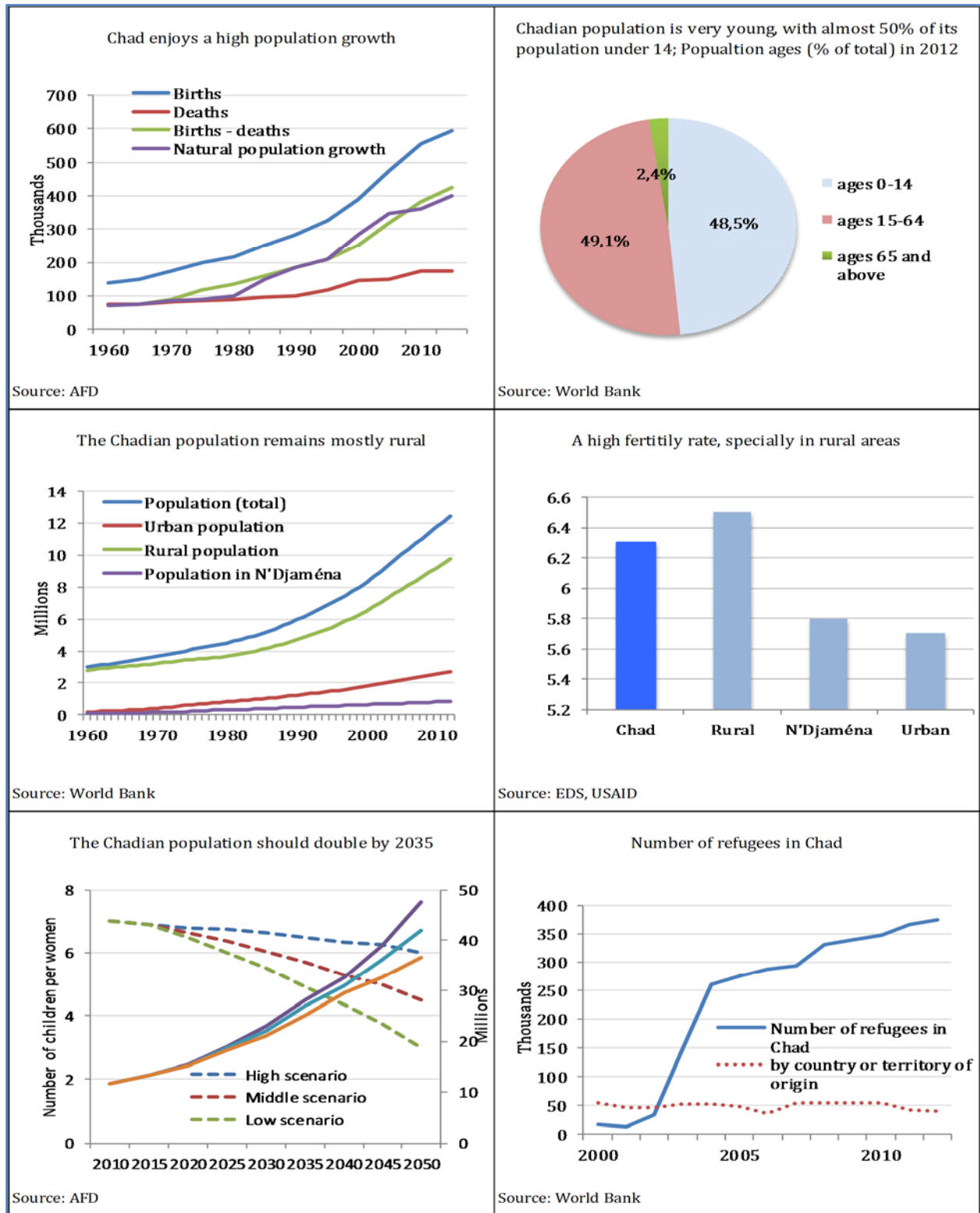
147. **Some participants mentioned that Chad was having difficulties diffusing the benefits of high oil revenues** and wondered what the consequences of a decrease in income would be on the Chadian economy and society.

148. **As regional disparities are very important,** some stakeholders spoke in favor of a targeted geographic approach for the implementation of poverty reduction programs.

149. **Some speakers wished that the issue of information technology and communication had been addressed.**

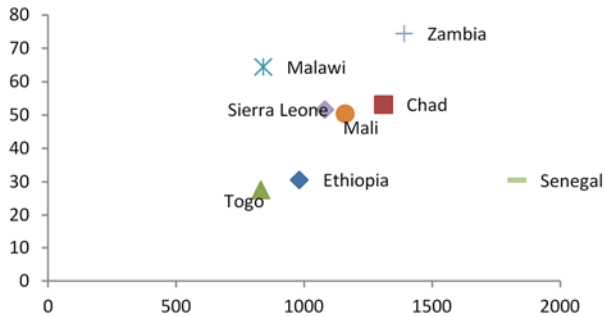
Annex 2: Chad in Charts

Population



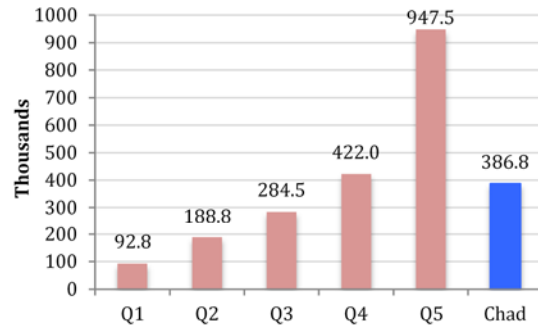
Poverty

Poverty rate and GDP per capita (constant dollars, 2005)



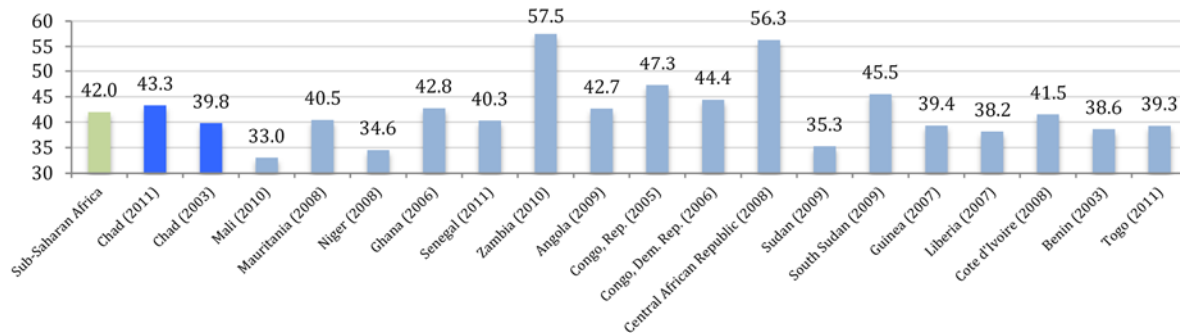
Source: World Bank

Annual per capita consumption, relating the wealth of the households, 2011 reveals important inequalities



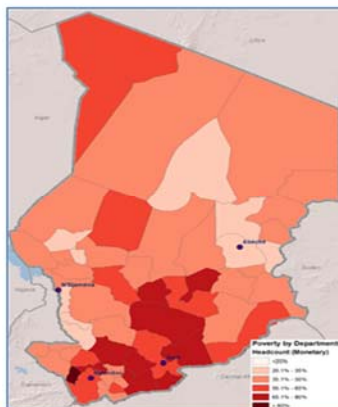
Source: World Bank

Gini index

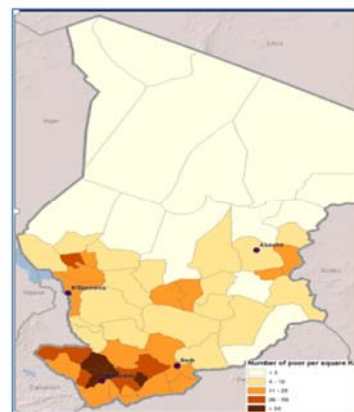


Source: World Bank

Poverty rates by department

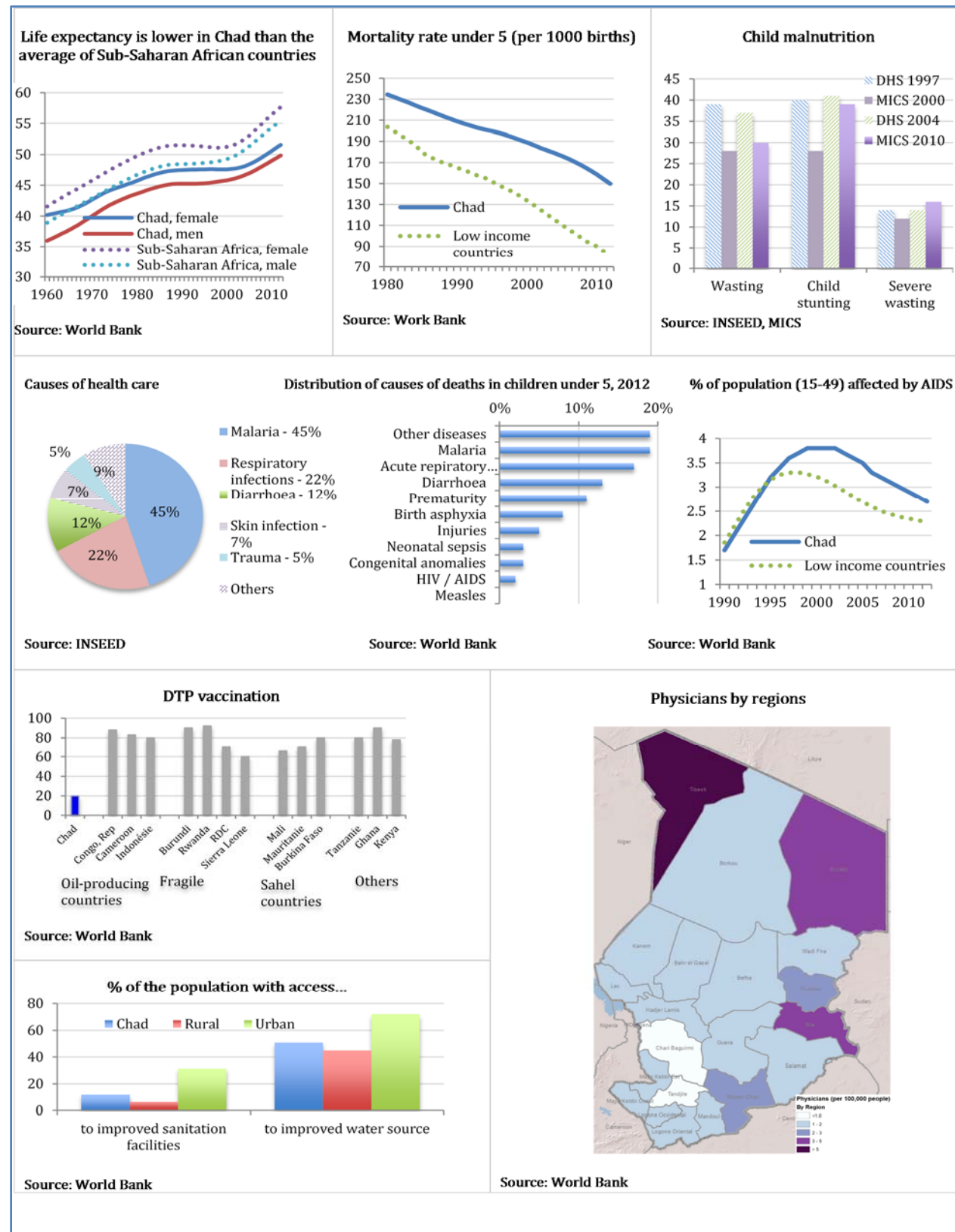


Number of poor by square km



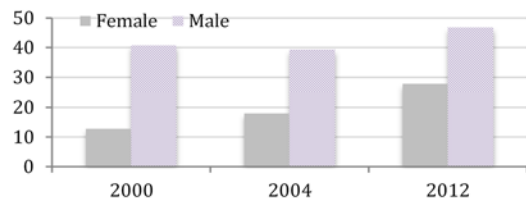
Source : World Bank

Health



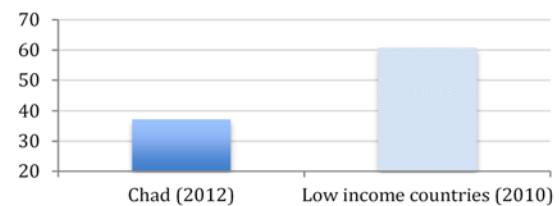
Education

A low literacy rate, specially for women



Source: World Bank

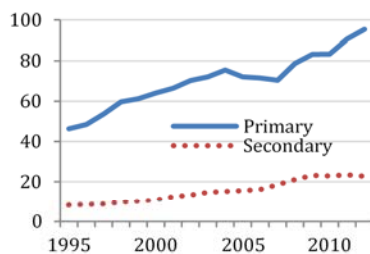
Literacy rate (% of population ages 15 and above)



Source: World Bank

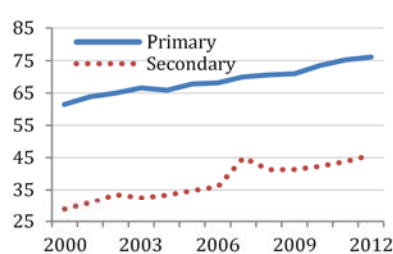
The low enrollment rate can be explained by the low enrollment rate of girls and their high share in the out-of-school children

Enrollment rate



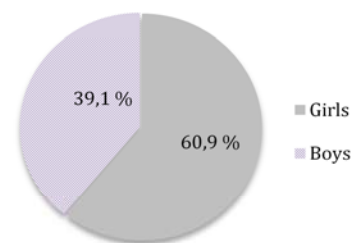
Source: World Bank

Ratio girl in school / boys in school



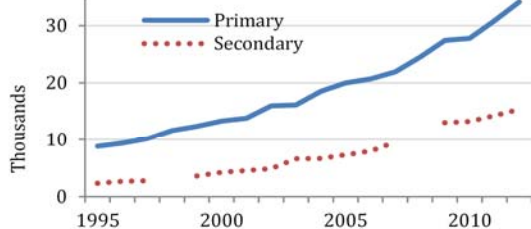
Source: World Bank

Children out-of-school, primary, 2011



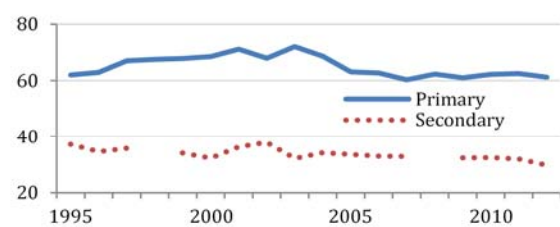
Source: World Bank

Number of teachers



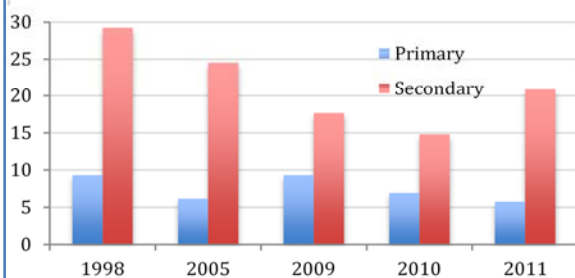
Source: World Bank

Pupil / Teacher ratio



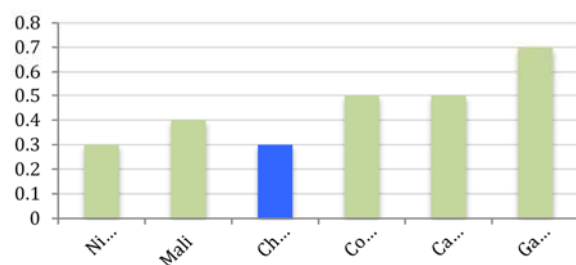
Source: World Bank

Decrease of the expenditure by student (% of GDP per capita)



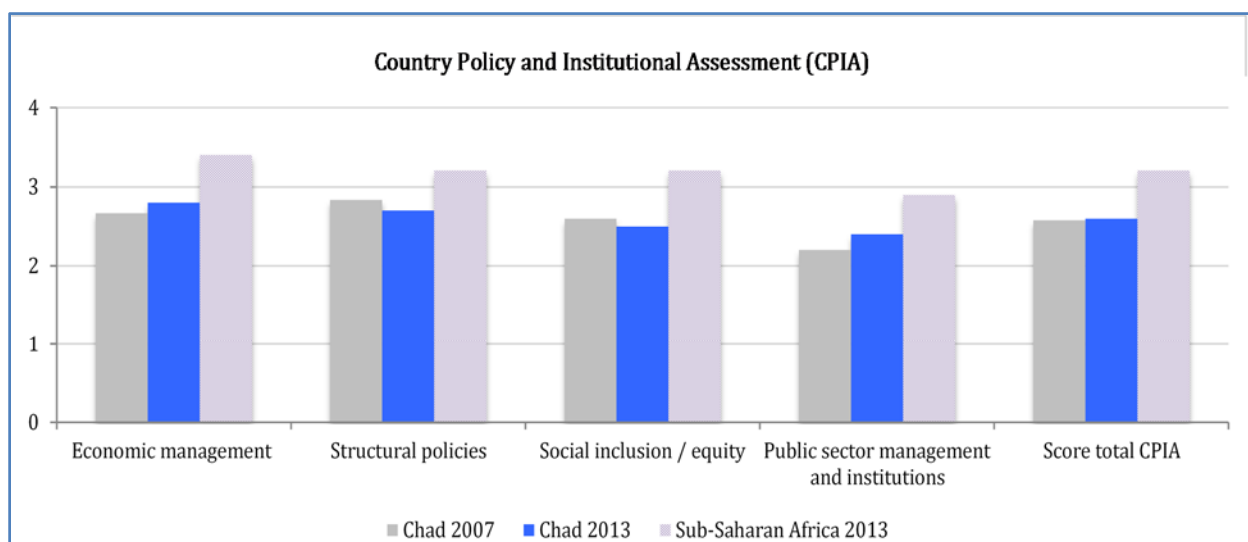
Source : World Bank

Human Development Index, 2011

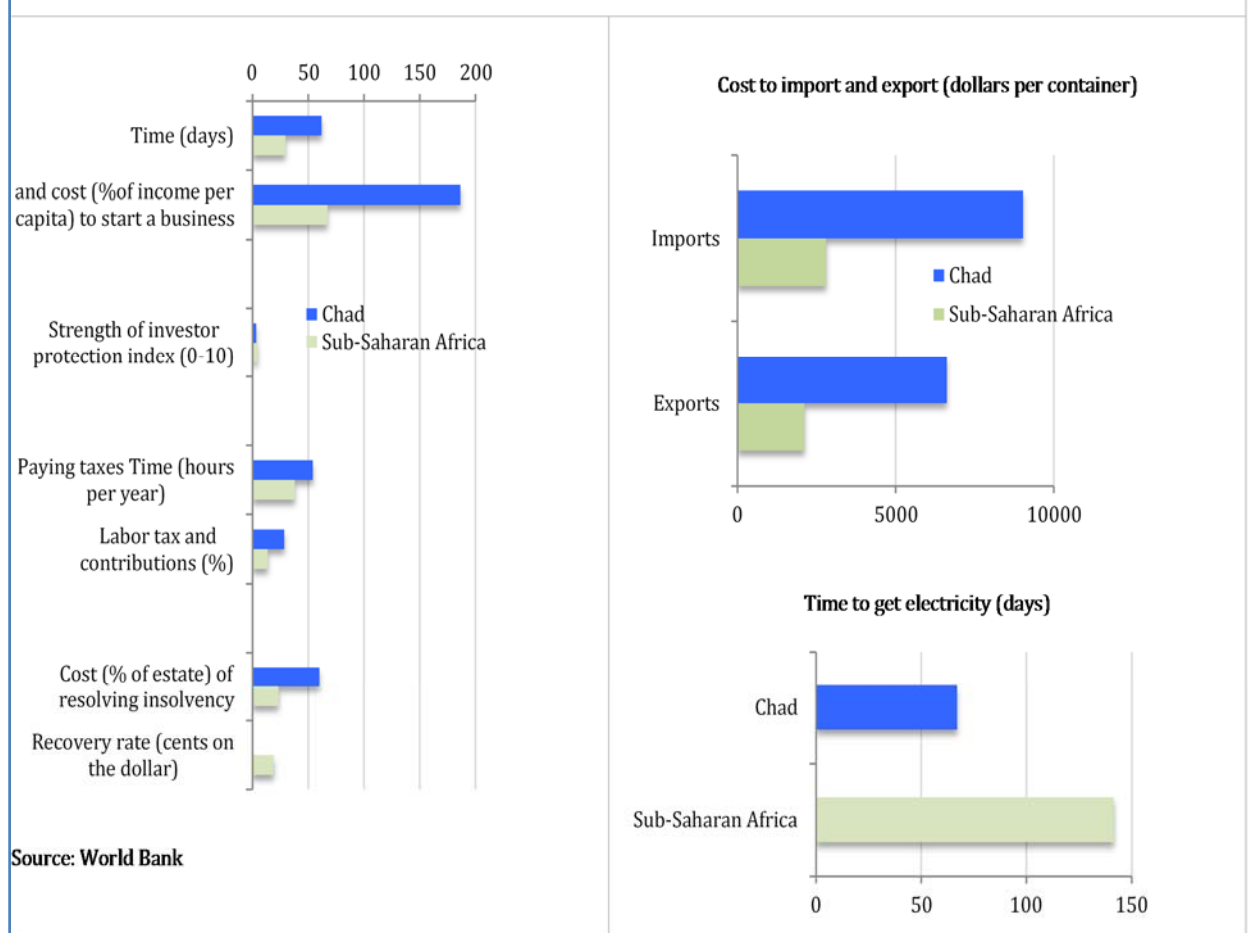


Source : UNDP

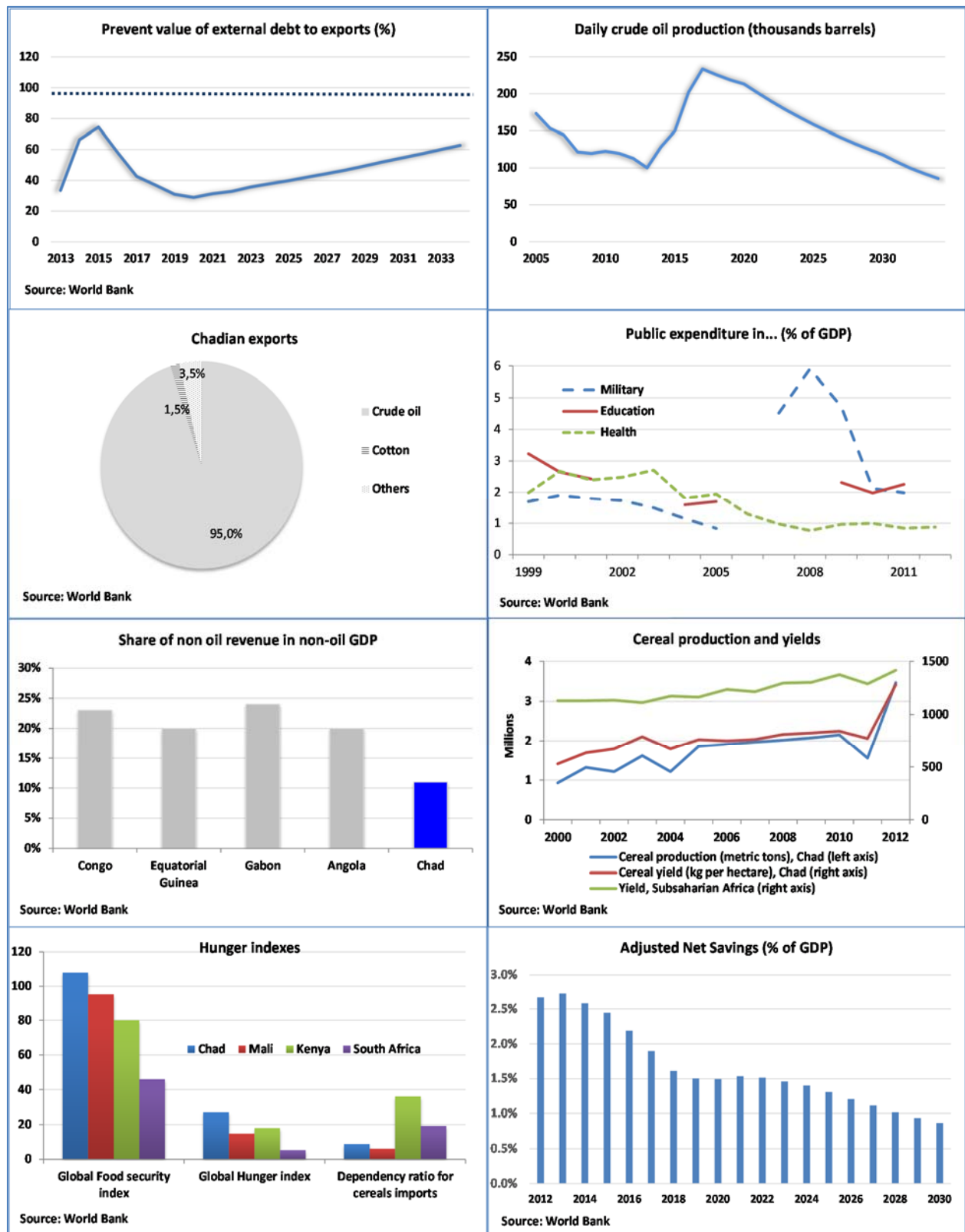
Governance and Business Environment



Source : World Bank



Sustainability



Annex 3: A Prospective Quantitative Model for Chad

150. **A Computable General Equilibrium (CGE) model was built for Chad, in order to develop prospective scenarios.** The model provides a consistent framework to explore possible medium term developments, based on the main structural features of Chad's economy. The CGE is a typical neoclassical model with endogenous prices, market clearing, and imperfect substitution between domestic and foreign goods, allowing for endogenous factor accumulation. As in any CGE prices are endogenous on each market (goods and factors) and equalize supplies (imports; Chad production for the domestic market; factors supply) and demands (final demand from households, the Government, investors and the rest of the world; intermediate demand from producers; factors demand), so as to obtain the equilibrium. The equilibrium is general in the sense that it concerns all the markets simultaneously. This type of modeling allows combining detailed databases with a sound micro-based theoretical framework capturing the interdependence and inter-linkages of markets. With such characteristics, CGE models are useful tools to assess the long term impact of shocks and structural reforms. The underlying assumption of market clearance and monetary neutrality renders, on the contrary, CGE models not well tailored to assess short-term impacts of macroeconomic policies in economies with well-developed financial markets.

151. **The model is calibrated for the year 2012**, based on a Social Accounting Matrix (SAM) built for that purpose. The SAM and the model comprise 20 sectors of activity (and corresponding products), two types of households (rural, urban), one trading partner, the rest of the World and five factors of production: informal labor, formal labor, capital, land, and oil reserves. The aggregated SAM for 2012 is reported below. Figures are in CFA billions.

	1	2	3	4	5	6	7	8
1.Activities - Products	3781	0	3297	1267	434	1989	2421	13189
2.Factors of production	6126	0	0	0	0	0	0	6126
3.Rural household	0	2969	0	0	219	0	171	3359
4.Urban household	0	1976	0	0	73	0	57	2106
5.Government	188	1181	20	295		0	116	1988
6.Savings - Investment	0	0	42	544	913	0	490	1989
7.Rest of the World	3094	0	0	0	161	0	0	3255
8.Total	13189	6126	3359	2106	1988	1989	3255	

152. **Supply is modeled using nested constant elasticity of substitution functions (CES), which describe the substitution and complement relations among the various inputs.** Producers are cost-minimizers and constant returns to scale are assumed. Output results from two composite goods: intermediate consumption and value added, combined in fixed proportions. The intermediate aggregate is obtained by combining all products in fixed proportions. The value-added is then decomposed in two substitutable parts: labor and a capital-natural resource bundle. Wages clear both formal and informal labor markets. Capital and land are fully employed and imperfectly substitutable. Demand for capital makes a distinction between "old capital" and "new" capital. The model thus integrates the notion of vintage capital, to distinguish the process of allocating capital already installed, from that resulting from contemporary investment (putty/semi-putty production function). "New" capital can be allocated more flexibly than "old" capital. Accelerating investment therefore strengthens the capacity for adjustment of the productive sector to changes in relative prices.

153. **Income from labor and capital accrue to the representative household.** This income is allocated to consumption and savings using the Extended Linear Expenditure System specification. Household demand is derived from maximizing the utility function, subject to the constraints of available income and consumer price vector. Household utility is a positive function of consumption of the various products and savings. Income elasticities are differentiated by product (ranging from 0.5 for subsistence agriculture products to 1.2 for urban services). The calibration of the model determines a per capita subsistence minimum for each product, which will be consumed whatever the price and the income of the households, while the remaining demand is derived through an optimization process. The subsistence share in the consumption of basic goods is higher than in the consumption of luxury goods. With lower disposable income, the households' savings rate declines to protect subsistence consumption. Government and investment demands are disaggregated in sectoral demands once their total value is determined according to fixed coefficient functions.

154. **The model assumes imperfect substitution among goods originating from different geographical areas.** Import demand results from a CES aggregation function of domestic and imported goods (with a substitution elasticity of 2.0). Export supply is symmetrically modeled as a Constant Elasticity of Transformation function (with a substitution elasticity of 2.0). Producers decide to allocate their output to domestic or foreign markets responding to relative prices.

155. **Several macro-economic constraints are introduced in this model.** First, the small country assumption holds, the Chadian economy being unable to change world prices; thus, its imports and exports prices on world markets are exogenous. Capital transfers are exogenous as well, and therefore the trade balance is fixed, so as to achieve the balance of payments equilibrium. Second, the model imposes fixed real public expenditures, to reflect the Government's choice of delivering a given amount and quality of public services and ability to borrow. Tax rates and official development assistance are exogenously determined and thus government savings are residually determined. Third, investment is determined by the availability of savings from Government, households and the rest of the World. Public investment (financed through Government savings plus deficit) is allocated exogenously across sectors, while the residual private investment is allocated to equalize marginal private capital productivity across sectors. The numeraire of the model is the exchange rate vis-à-vis the rest of the world.

156. **The dynamic path of the model strongly results from this savings-investment rule:** a change in private investment influences physical capital accumulation in the following period. Urban and rural populations, labor supply, land and oil reserves supply long term growth rates are set exogenously, based on demographic and education projections, past trends in cultivated areas, proven oil reserves and extraction plans. Total factor productivity growth is also set exogenously based on past trends discussed in Chapter 3. The following annual growth rates are applied: Urban population: 4.6%; Rural population: 3.0%; Formal labor supply: 4.0%; Informal labor supply: 3.5%; Land supply: 3.9%; Total factor productivity: 0.5%. In addition to such exogenous trends, the model also allows for endogenous labor and land supply, responding to their remuneration with respect to consumer prices, using the following elasticities: informal labor: 0.5; formal labor: 0.2;

land: 0.2. Macroeconomic assumptions, such as world prices, oil reserves, Government spending and fiscal deficits are set in line with Chad's most recent debt sustainability analysis.⁹⁹

⁹⁹ Source: International Development Association and International Monetary Fund (2015b).