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GENERAL STUDIES

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India: Energy Security

"We are energy secure when we can supply lifeline energy to all our citizens irrespective of their ability to pay for it as well as meet their effective demand for safe and convenient energy to satisfy their various needs at competitive prices, at all times and with a prescribed confidence level considering shocks and disruptions that can be reasonably expected."- Integrated Energy Policy, Government of India

Energy Security a growing concern for India

Energy security has been an important global policy issue for over four decades now, since the first oil crisis in the 1970s. According to the International Energy Agency's (IEA's) World Energy Outlook (WEO-2012) published in November 2012, the global energy demand is likely to grow by more than one-third over the period to 2035, with China, India and the Middle East accounting for 60% of the increase. Thereby, Energy security becomes a pertinent issue for a country like India where the dependence on import is increasing steadily.

Energy Security, as defined by the Integrated Energy Policy of India, encompasses three critical dimensions: (a) meeting India's large energy demand to sustain an annual economic growth rate of 8 to 9 percent through 2031-32, (b) meeting lifeline energy needs of all citizens to address social development, health and safety of the energy poor, and (c) to ensuring sustainability in energy supply and use. In the current context energy security also encompasses an overlapping element of energy efficiency across all aspects related to energy security. Energy Security thus entails a complex set of coordinated initiatives and the need for energy strategies, policies and regulations to align in making specific choices for the country in charting a low-carbon and energy-secure growth path for the country.

Key Factors contributing to Energy Security

Energy security shall remain an inter-play of demand and supply scenarios, which in themselves are influenced by a number of factors which need careful evaluation and consideration over the long-term. These factors have been highlighted in the table below and a broad definition provided on how these would influence.

1. Diversity of Energy Sources
2. Supplier Diversity
3. Level of Imports
4. Security of Trade Flows
5. Geo-politics & Economics
6. Reliability
7. Market/Price Volatility
8. Affordability
9. Energy Intensity
10. Feasibility

Demand and Consumption in India

India is the fourth largest primary energy consumer, after China, USA and Russia and it accounts for more than 4.6 % of total global annual energy consumption. In the last five years, India has averaged a growth rate of 8% and the demand for energy has been putting pressure on its supply sources. It is an established fact that if India continues to grow at 8% or so in the coming years a higher than average demand for energy will persist.

Coal is the mainstay of India's energy sector and accounts for over 50% of primary commercial energy supply and of the total power generated in the country, 69% comes from coal based thermal power stations. Next big share of energy portfolio in India is dominated by hydrocarbons and less than

10 percent of energy is accounted by other sources like hydro, renewables and nuclear. Demand for conventional energy in the past five years has demonstrated an increased pace with natural gas growing at highest rate of over 10% CAGR. While it is certain that India will see an increased escalation of energy demand, the question that surrounds India is at what scale and speed India's energy demand will expand and which fuels and technologies it will use.

With the increased consumption of energy, demand side management through increased efficiency has also gained prominence in the country. Energy conservation potential in India is estimated at ~ 23% and various initiatives have been taken to explore this potential. Several initiatives such as Super Energy Efficient Program, Smart Grid initiatives, National mission for Enhanced Energy Efficiency, PAT (Perform Achieve Trade) scheme, Standards & Labelling (S&L) Program, Energy conservation building codes, etc. have been undertaken to enhance energy efficiency of the nation and make energy sector economically as well as environmentally sustainable.

Challenges Related to Energy Security of the Country Low hydrocarbon proven reserves and declining interest of foreign players in E&P: India has low proven hydrocarbon reserves with reserve to production ratio of ~18 years for oil and ~26.9 years for gas as per the current production levels. Approximately 34% of the total area of India's sedimentary basins is poorly explored to completely unexplored and India has seen diminishing interest from investors in exploration & production sector in the recent NELP bidding rounds with limited number of IOCs participating in the bidding. There is a need for India to establish and attractive fiscal regime to enhance the E&P activity and thereby domestic production levels.

Increasing import dependence both for oil and gas: The volume of crude oil imports has been increasing steadily in India and more than 75 percent of its total crude requirement in 2011. Similarly, gas imports are increasing steadily with lower than expected production from KG-D6. During the 12th Plan, import dependence on crude oil is expected to increase from ~76% in FY11 to ~80% in FY17 and import dependence on natural gas is expected to increase from ~21% in FY11 to 35% in FY17. High import dependence for energy amounts to high vulnerability and compromised energy security of the nation. As a result of this, GDP growth rate becomes dependent on external factors like oil prices. Also, it adds to concerns regarding continuously increasing fiscal deficit and depleting forex reserves. In such a scenario, volatile prices and increased competition for resources outside India are making it all the more difficult for Indian companies to source energy at a competitive price

Stagnating supplies in Coal Sector: The coal sector has been facing challenges both in terms of domestic as well as imported supplies. The domestic production is stagnating in the coal sector as India's coal demand increased at CAGR of 8.5% while CIL's domestic production increased at a CAGR 4.6% only in 11th five year plan. Any additional coal requirement for new power plants would be unlikely met through FSAs with CIL, hence finding alternative sources is unavoidable. India's coal imports have more than doubled over the last five years. However, coal imports have concerns around limited supporting infrastructure, huge price difference between imported and domestic coal and changing regulations in the source countries. Also, different characteristics of coal typically permit existing power plants to blend imported coal with domestic coal only up to 10% to 15%. Further, there are concerns that there are very limited manufacturers of quality mining equipment and machinery. Coal as a sector is monopolistic and remains virtually closed to private sector participation except end use cases. With slower growth rate of production of CIL and SCCL, and issues around import of coal, Indian power sector is facing capacity utilization issues.

Renewable Energy and related challenges:

Renewable sector has immense potential which needs to be explored going forward and is becoming an increasingly important part of India's energy mix. The installed capacity in the renewable sector is ~ 26 GW in 2012. Wind constitutes the highest share in the renewables because of existing potential in India and the feed in tariff approaching grid parity. Solar PV is another source which is gaining

prominence in the energy mix. Besides National Solar Mission at the federal level there are various State level policies which are pushing for wider adoption of Solar PV as an active source in the energy mix. In addition, India has significant potential in the hydro sector but sector is currently faced by issues related to R&R, land acquisition, clearances and evacuation infrastructure.

Un-conventional sources of energy: With the thrust over un-conventional sources of energy globally, India is also gearing up to explore and develop domestic sources in terms of shale, CBM, tight gas, etc. While shale gas policy is still under formulation, exploration activities have already commenced for CBM. There is a need to formulate an attractive fiscal regime to incentivize investment in the un-conventional sources and attract foreign players. Currently, India is facing challenges in terms of availability of technology and skills/ competency in terms of manpower and service providers so as to provide quality service at a competitive cost. Also, this sector is expected to face challenges related to land acquisition, especially for shale gas as it requires large number of wells to be drilled and extensive use of land. Water availability, management for fraccing process and infrastructure related challenges in view of under-developed gas transmission grid are some other challenges which could be faced by the sector.

Nuclear Energy in Post-Fukushima scenario: Nuclear energy could play a critical role in addressing India's energy challenges, meeting massive energy demand potentials, mitigating carbon emissions and enhancing energy security through the reduction of dependence on foreign energy sources. India has the capability to achieve the complete fuel cycle – from uranium exploration, mining, fuel fabrication and electricity generation, to reprocessing and waste management. India has modest reserves of uranium and vast reserves of thorium and thus the three stage nuclear power programme is designed to achieve self- reliance by exploiting India's thorium resources. The Fukushima-Daiichi accident in Japan resulted in concerns over the safety of nuclear plants resulting in anti-nuclear sentiments in the country.

Policy and Regulatory Challenges in the Energy Sector: Pricing continues to remain a key concern in the India energy sector both in terms of hydrocarbon and coal sector. Since domestic energy prices are disconnected from the global trends, there is limited signalling mechanism for active demand side management. Resource allocation and fuel side concerns bring in another dimension to challenges faced by Indian energy Sector. There is a pressing need to bring in independent regulator in the coal sector and develop regulations around development of coal blocks at an improved pace. A new framework could be looked into the domestic captive coal mine based projects, linkage based projects and imported coal based projects. A few of the concerns are mostly cutting across the sectors: For instance delays in land acquisition, rehabilitation and resettlement and obtaining environment and forest clearances have proved to be the prime concern in development of most energy sector projects. Health of distribution utilities is another element which requires attention of policy makers. Most of the private generating companies perceive increased payment default risk when negotiating PPAs with these utilities. This has a snowballing impact with commercial banks perceiving higher risks in these projects making cost of financing higher.

Similarly, the investment environment in the oil & gas upstream sector is getting affected due to regulatory uncertainties. At the moment, the Government is involved in contract administration, monitoring and review of investments and pricing decisions. The independent regulator could take up these roles, as recommended under the IEP. Pricing of major share of gas supplies in the Indian market is controlled and is not market driven and multiple pricing regimes exist. Controlled pricing may result in disincentivizing investments in the sector in terms of limited participation from foreign players, who have access to technology, much required in deep-water E&P activities. The downstream sector is evolving in terms of policies and powers of regulatory board and bidding framework for gas distribution. Controlled Pricing of certain petroleum products is another key issue faced by Indian oil and gas sector and as a result most of the OMCs are currently operating under heavy burden of under recoveries. Due to policy and regulatory challenges, India may lose on foreign investment, especially in areas like deep water E&P, Shale gas, CGD, fuel retailing, etc, despite being

an attractive market in terms of demand. Stable and consistent regulatory environment and only need-based intervention from state is required to attract investment

Geo-Political Environment and Related Challenges

The energy sector is deeply interlinked to the geo political environment globally. Given the high import dependence of India, It is important for India to secure its supplies through energy diplomacy. Some of the recent happening which may have a long term affect the Indian energy environment are:

The Arab Spring: Some of the recent developments in the MENA (Middle East and North Africa) region including Iran & Iraq have impacted the oil dynamics of the region and ultimately the global hydrocarbon sector. India is heavily dependent on the region for its oil & gas supplies. The disruptions in the production in the region lead to significant price rise and the prices of hydrocarbon supplies are expected to increase in the long term due to the socio-economic environment of these countries.

The Golden Era of Gas: The Fukushima incident in Japan resulted in shift of focus from nuclear energy to other forms of energy, especially gas. There is an increase in demand of gas especially from Asian countries like Japan, South Korea, China, India and Taiwan. In addition, due to the shale gas revolution in the US and various other countries gas supplies are expected to improve in the future. With significantly higher global reserve to production ratio of gas as compared to oil and increasing environmental concerns around liquid fuels and coal, the share of gas in the global energy mix is expected to increase.

Changing Trade Flows: The global energy map is changing with recent rebound in US upstream sector because of non-conventional sources of energy. This may change international oil and gas trade flows, putting in focus the changing geopolitical environment, especially in context of the MENA region.

Acquisition of foreign coal assets: Experiences from recent acquisitions by a few of the private Indian companies have indicated that it has its own set of challenges. Other than the limited domestic mining experience of most of the companies except SCCL,CIL and its subsidiaries, there are other challenges related to political risk (like those which came to light in Indonesia). CIL had ventured in to acquisition of coal blocks overseas but there has been limited success in this space.

Geo-political challenges and options for India:

India has faced significant challenges in the past in securing international supplies. There is an increased pressure on India to reduce its dependence on Iran due to Iran's non-participation in NPT; Iran Pakistan India pipeline project has been stalled. In terms of gas supplies from The U.S., rules are not favourable for exporting gas to non-FTA countries. In addition, India has lost out to China for securing supplies through transnational pipeline from Myanmar and also in securing assets in countries like Khazkhistan, Nigeria, Angola, Russia, etc. to China. China has been ableto use diplomatic channels to increase its chances of winning the bids. It has covered energy acquisition under layers of integrated packages of aid, concessional or low-interest loans as well as direct financing of infrastructure projects. Chinese companies like CNPC, CNOOC, Sinopec not only affect the energy sector but also makes social and economic impact in the region.

Way forward

Energy security shall remain an inter-play of demand and supply scenarios, which in themselves are influenced by a number of factors which need careful evaluation and consideration over the long-term. The Integrated Energy Policy document needs to be made more dynamic to reflect the changes in the global energy environment and also revisit some of the challenges related to policy making and implementation for the Indian energy sector. A truly integrated energy policy should clearly articulate implementation along with continued reforms and dynamism to accommodate rapidly changing global energy environment. Some of the factors which are critical to ensure long term energy security of the

nation are listed below:

- Diversification of Energy Sources and avoiding over- dependence on any one fuel
- Supplier Diversity in terms of limited reliance on one supplier/ region/ country
- Security of Trade Flows/ crucial trade corridors instrumental in sourcing various forms of fuel
- Geo-politics and international economic/ political factors affecting supplies of energy
- Controlling the level of imports and developing indigenous capabilities
- Reliability of physical infrastructure facilitating energy flows
- Market/Price volatility as it may discourage long-term investment and creates a barrier to providing adequate energy supply
- Affordability of energy to various consumer segments
- Energy efficiency and Feasibility of energy supplies At this crucial juncture, it is important for the Corporates, Industry experts and the policy makers to work together to create a healthy environment for the Energy sector.

- What are the changes required in the Policy and Regulatory Environment in the energy sector?
- What could be done to establish a fair resource allocation and pricing mechanism of domestic resources?
- What could be done to secure international assets/supplies through energy diplomacy?
- How could India address the technology and skill related challenges with respect to the energy sector?
- What steps could help India to achieve desired level of energy efficiency?
- How could India facilitate fast paced infrastructure development?
- What are the options for India to address financing related challenges in the sector

Strategic Context

Energy Security, as defined by the Integrated Energy Policy of India, encompasses three critical dimensions: (a) meeting India's large energy demand to sustain an annual economic growth rate of 8 to 9 percent through 2031-32, (b) meeting lifeline energy needs of all citizens to address social development, health and safety of the energy poor, and (c) to ensuring sustainability in energy supply and use. In the current context energy security also encompasses an overlapping element of energy efficiency across all aspects related to energy security implying efficient energy utilization across all spectrums.

Energy Security thus entails a complex set of coordinated initiatives and the need for energy strategies, policies and regulations to align in making specific choices for the country in charting a low-carbon and energy-secure growth path.

In particular, energy security choices would impinge upon supply side and demand side factors. Supply□side factors include securing adequate domestic and international sources of energy and diversifying the country's energy mix to be able to address sustainability and to tide through disruptions and variations specific to a particular type of energy, supplier, region or trade. Demand side factors entail demand from existing consumption base, resultant demand on account of economic growth, improved living standard and efficiency in utilization of energy to reduce energy intensity across various segments of the economy. Energy security considerations involve investments and thus such choices are determined by long-range affordability for the economy as well as energy consumers.

Global Energy Context

Energy security has been an important global policy issue for over four decades now, since the first oil crisis in the 1970s. This is because global energy markets rely heavily on fossil fuels like oil, natural gas and coal that are finite in nature, sometimes difficult to exploit, concentrated with a few countries, etc. and hence brings with them issues related to investments & economics, geo-politics,

trade and technology. These fuels provide a large majority of the globe's primary energy supply but being non-renewable in nature and skewed in its availability, they bring with them globally de-stabilizing effects, mainly through price shocks and geo-political tensions. Extensive worldwide use of fossil fuels has not only threatened global energy security,

Demand side management through energy efficiency As per the Integrated Energy Policy, energy conservation potential in India is estimated at ~ 23%. Maximum potential is envisaged in the industrial and agricultural sectors. To achieve this potential, the Government of India enacted the Energy Conservation Act, 2001 (EC Act). The Act provides for the legal framework, institutional arrangement and a regulatory mechanism at the Central and State level to embark upon energy efficiency drive in the country.

Energy efficiency institutional practices and programs in India are now mainly being guided through various voluntary and mandatory provisions of the Energy Conservation Act. Several initiates such as Super Energy Efficient Program and Smart Grid has been initiated by the Ministry of Power which will accelerate energy efficiency potentials and make energy sector economically as well as environmentally sustainable. Following schemes have been undertaken which are expected to further strengthen the energy efficiency road map:

- National mission for enhanced energy efficiency
- PAT (Perform Achieve Trade) scheme
- Standards & Labelling (S&L) Program
- Super-efficient equipment program (SEEP)
- Energy conservation building codes
- Smart grid initiatives

All of these above measure shall lead to better demand side management and shall aid in making more energy available and assessable to a wider community.

Coal Bed Methane:

DGH has estimated prognosticated CBM resources at 4.6 tcm spread over twelve Indian states covering an area of 35,400 sq km. CBM exploration activities have already been initiated in 54 percent of the area, which is located in India's major coal and Lignite bearing basins in the central and eastern parts of India. Four CBM rounds have been completed till now and GoI has offered 36 blocks covering 18,600 sq km area out of which 34 blocks have been awarded including three blocks on nomination basis (two on nomination and one through Foreign Investment Promotion Board route). In CBM IVth round, GoI signed contracts for 7 blocks covering an area of 3727 sq.km. The estimated CBM resources of these 7 Blocks is about 330 BCM with expected production potential of 9 MMSCMD. Currently, CBM is commercially produced from five blocks in India, including Raniganj East, Raniganj South, Jharia, Sohagpur West and Sohagpur East. Current CBM.

Unconventional Sources of Energy and Related Challenges An important part of unconventional energy portfolio is unconventional natural gas, where there has been a recent thrust. While industry's ability to access these unconventional energy sources is not new, its ability to do so economically and on a large scale is new. The proliferation of unconventional natural gas production is a game-changing event, especially in light of growing concerns about climate changes. With the increasing emphasis on these resources, Government had already commenced bidding rounds for Coal Bed Methane license while bidding frame work for Shale gas and Under Ground Coal Gasification are being formulated. Shale Gas has existed for quite some time now. Over the years, the technology has been developed, but this technology was not economically attractive. The low natural gas prices were not encouraging the investors to pump in their money into a nascent industry. Primarily three factors have come together in the recent past to make shale gas more attractive:

- Advancements in the horizontal drilling technology
- Advancements in the hydraulic fracturing technology
- A surge in the natural gas prices in the past few years as a result of increasing demand pressures

Currently, Shale gas is high on the agenda within the Indian hydrocarbon sector. Learning from the success of shale gas in US, India is considering shale gas as an option to address its energy security concerns. During the last decade, US shale gas production has increased from merely ~2% to ~17% of the total natural gas production.

Production is about 0.15 mmscmd that is to likely to increase in future. While there have been successes in CBM E&P, there is still considerable untapped CBM resource potential especially given India's large coal deposits and resource estimates of CBM.
Some of the consideration in terms of unconventional sources in India are: -

- An attractive fiscal regime to incentivize investment.
- Need for skills and competency in terms of manpower and service providers so as to provide quality service at a competitive cost
- Challenges related to availability of current technology of low cost drilling , multi-seam hydrofrac, comprehensive reservoir description at every phase through reservoir simulation and production technology to achieve faster dewatering
- Land acquisition may prove to be a significant problem both for shale and CBM production, especially for shale gas as it requires large number of wells to be drilled and extensive use of land.
- Water availability and management might prove to be a challenge as fraccing process requires significant quantities of water
- Infrastructure related challenges in view of under- developed gas transmission grid in the country to evacuate the gas produced in regions having rich source of unconventional gas.

Nuclear Energy and Related Challenges Nuclear energy could play a critical role in addressing India's energy challenges, meeting massive energy demand potentials, mitigating carbon emissions and enhancing energy security through the reduction of dependence on foreign energy sources. Since the establishment of the Atomic Energy Commission in 1948 and the Department of Atomic Energy in 1954 India has had a long commitment to nuclear energy. India has the capability to achieve the complete fuel cycle – from uranium exploration, mining, fuel fabrication and electricity generation, to reprocessing and waste management. India has modest reserves of uranium and vast reserves of thorium. In view of this, Dr Homi J Bhabha designed three stage nuclear power programme to achieve self-reliance by exploiting India's thorium resources The first stage of this strategy uses pressurized heavy water reactors (PHWR) fuelled by natural uranium to produce plutonium by reprocessing spent PHWR fuel.

Plutonium is used as fuel in the Fast Breeder Reactors (FBRs) of second stage. India plans to introduce Thorium in these FBRs after substantial capacity of FBR's are build up to produce Uranium-233. The third stage reactors will use fissile Uranium-233 – Thorium fuel. To have industrial scale experience in thorium technologies, India is developing Advanced Heavy Water Reactor (AHWR) and related technologies in which two third of power will come from Thorium. India has successfully mastered the first stage with 17 pressurised heavy water reactors operating. Thus the focus of Indian nuclear programme is on indigenous technology development for the second stage and enlarge its installed capacity in near-term based on import of uranium, which could be used in the indigenous PHWRs or in LWRs to be set up in technical cooperation with other countries.

Renewable Energy potential and Related Challenges
Renewable energy has immense potential which needs to be explored going forward and is becoming an increasingly important part of India's energy mix. With vast potentials, renewable energy is no longer seen as an alternate energy source to conventional energy, but as a critical element in pursuit of key policy objectives. It enhances India's energy security by diversifying its energy mix and reducing import dependence on fossil fuels. According to the Planning Commission, solar power, especially, is seen as having the potential for India possibly to attain "energy independence in the long run". In providing energy access to India's people, renewable energy is expected to "supplement conventional power generation and meet basic energy needs, especially in the rural and remote areas". Besides,

renewable energy has the potential of mitigating climate change risks. The mix of renewables in India's energy mix, combining biomass, hydro and other renewables, was approximately 26% in 2009, of which biomass accounted for the largest share. India had the fifth-largest capacity for wind energy in the world in 2011 and in 2010 India launched an ambitious□plan to significantly augment its capacity of solar power. Although installed solar capacity remains quite small, it has promising potential for growth. Private investment has been the key driver behind the growth of renewables in India. As of now India has an installed capacity of 1 GW grid connected Solar PV.

Hydro again has a huge potential. As per CEA estimates, India has a potential of 148,701 MW of hydro capacity.

The Arab Spring and Indian Supplies

World is heavily dependent on the Middle East and North Africa region for its hydrocarbon supplies. It accounts for more than 45% of world's proven gas reserves and ~55% of oil reserves (including Iran & Iraq). The Arab spring consisting of widespread protests/ civil wars against the ruling governments, starting from late 2010 and ending towards the end of 2011, saw widespread unrest spanning across a host of countries including Egypt, Libya, Yemen, Iraq, Algeria, Syria, etc.□It significantly impacted the oil dynamics of the region and ultimately impacting global hydrocarbon sector. Some of these protests like in Egypt were a consequence of falling oil production, depleting exportable surplus and thereby lack of funds for subsidies on food and fuel, resulting in widespread dissatisfaction and unrest. Below given graph shows the oil & gas reserves of major hydrocarbon producing countries in the MENA region (Including Iran and Iraq)

The Arab Spring resulted in loss in Oil production; especially Libya lost major production as well as refining facilities. These disruptions in production lead to a significant price increase. While major protests were seen in only 5-6 countries, the heat of the Arab spring was felt by almost all the countries of the region. With the increasing consumption and depleting reserves, deficit of funds is increasing for almost all the oil producing countries in the region. As a result the price of oil is expected to increase in the long term to increase the income from the production. India also has a high import dependence on MENA region. India imports close to 60% of its crude from the MENA region. A long term increase in the prices and vulnerability of supplies in terms of stability of government may affect Indian economy in the long term.

Future Energy Mix Post Fukushima:

The Golden Era of Gas The Fukushima incident in Japan resulted in shift of focus of Japanese government from nuclear energy to other forms of energy. Japan's Fukushima had a cluster of six nuclear reactors, which produced around 4.7 GW of electricity; the total nuclear energy production in Japan was around 50GW from 54 plants. With Japanese government bid to close down nuclear plants, natural gas demand increased significantly for power generation. The demand is also increasing from other major consumers in the region like South Korea, China, India and Taiwan. Major suppliers of the gas to the region are Qatar, Indonesia, Malaysia and UAE. Some more liquefaction capacities are expected to be added in Indonesia, Malaysia, Australia and Algeria in short to medium term. However, the demand is also increasing at an equal or faster rate. The existing era is called as golden era of gas with its share of world primary energy is now 20%+ and it is expected to continue to rise towards a similar share of primary energy with coal and oil. Many countries are adapting to the new gas era with good regulation to ensure efficiency, transparency and fairness in their downstream operations. The shift in the energy mix can be attributed to the following factors among others: - Greater production of unconventional gas and lower gas prices Ambitious policy for gas use in China and other major consumers and long terms gas tie-ups Lower growth of nuclear power after Fukushima incident Environmental concerns around liquid fuels and coal and gas known to be a cleaner fuel

Non-Conventional Gas and changing trade flows

The global energy map is changing, with WEO 2012 predicting the turning in tide in energy flows of the United States to have far-reaching impacts well beyond North America and in energy choices and trade. The recent rebound in US oil and gas production, driven by upstream technologies that are unlocking light tight oil and shale gas resources, is spurring economic activity – with less expensive gas and electricity prices giving industry a competitive edge – and steadily changing the role of North America in global energy trade. By around 2020, WEO 2012 predicts the United States to become the largest global oil producer (overtaking Saudi Arabia until the mid-2020s) and starts to see the impact of new fuel-efficiency measures in transport. The result is a continued fall in US oil imports, to the extent that North America becomes a net oil exporter around 2030. This accelerates the switch in direction of international oil trade towards Asia, putting a focus on the security of the strategic routes that bring Middle East oil to Asian markets. The United States, which currently imports around 20% of its total energy needs, becomes all but self-sufficient in net terms – a dramatic reversal of the trend seen in most other energy importing countries across the globe.

Coal Mining and Acquisition of foreign assets

In light of domestic demand outstripping domestic supply sources for coal there has been increasing trend for acquisition of coal mines in other countries like Australia, Indonesia and a few of the other African Countries. However, experiences from recent acquisitions by a few of the private Indian companies have indicated that this strategy in fuel security has its own set of challenges. While the apparent challenge has been the lack of experience of most of these domestic private players in the domestic market (since coal continues to remain monopoly of CIL and SCCL), there are other challenges related to political risk (like those which came to light in Indonesia).

With these set of thoughts CIL had ventured in to acquisition of coal blocks overseas.

SICKLE CELL ANAEMIA

The latest survey by sickle Cell Disease Project in Attappady found that over 20 per cent of the 33,120-strong tribal population is affected by the dreaded genetic disorder of sickle cell anaemia.

The latest survey conducted in June 2013 by the Agali Community Health Centre and the five Public Health Centres found 1,253 tribals affected by sickle cell anaemia (AS). Out of this 96 are acute cases (SS).

A Std III student of Malampuzha Model Residential School, Satheesh (8) of Kadukumanna tribal hamlet in Pudur grama panchyat, died of sickle cell anaemia on Tuesday.

He was under treatment in Kottathara Tribal Specialty Hospital in Attappady in May this year, said Prabhudas, Nodal officer for Health Services in Attappady and Deputy District Medical Officer.

He said the latest survey has covered less than half of the 33,120-strong total population of tribal people.

A thorough hamlet-wise survey will find at least 2,000 sickle cell carriers (AS) and 300 acute cases (SS). Thus at least 20 per cent of the tribal population is under the grip of this genetic disorder, Dr. Prabhudas said.

"If this serious health problem is not tackled immediately the tribal population in Attappady would decline and in the long run face extinction," he said. sickle cell anaemia is a genetic disorder of the blood. sickle cell gene carriers have one defective gene of sickle haemoglobin and do not have any problems related to the disease. But those who have sickle cell anaemia have a pair of defective genes of sickle haemoglobin, having inherited one from each of their parents.

They suffer from severe anaemia; repeated episodes of infections that may be life threatening at times; pain in limbs, abdomen and chest; and paralysis.

Most of them die in their early childhood unless treatment is initiated, Dr. Prabhudas said.

Anaemia pill at schools

Children in government and public-funded schools across India will receive a weekly tablet of iron and folic acid to reduce anaemia under a programme to be launched this week. The initiative will cover about 60 million boys and girls enrolled in Classes VI to XII at government and aided schools, a senior health official said today. It will also cover 70 million out-of-school girls, aged 10 to 19, under the Integrated Child Development Scheme.

A nationwide health survey seven years ago had indicated that five in 10 girls and three in 10 boys aged 15 to 19 have anaemia, which can impair physical growth and work performance in adolescents. Factors contributing to anaemia include poor intake of iron-rich food, iron and blood loss because of intestinal worms, and iron loss during menstruation in girls.
Anuradha Gupta, joint secretary in the Union health ministry, said Rs 135 crore had been set

aside for the programme during 2013-14. The tablets, containing 100mg iron and 500 micrograms of folic acid each, will be administered on a fixed day of the week throughout the year. The ministry has asked the states to earmark Monday as the day. The programme will also seek to provide a de-worming tablet of albendazole twice a year to these children, once in August and again in February, to treat infestations by intestinal worms picked up through contaminated soil or water. "I think this programme is a step in the right direction," said Harsh Pal Singh Sachdev, a senior paediatrician who was among the experts consulted by the ministry to prepare the programme's operational guidelines.

Intestinal worms themselves may cause iron-deficiency anaemia through chronic intestinal blood loss. Medical studies have shown that iron and folic acid tablets along with de-worming can reduce the prevalence of anaemia. "We could expect children with mild anaemia to become non-anaemic and those with moderate anaemia to improve to mild anaemia within months," said Umesh Kapil, professor of human nutrition at AIIMS, New Delhi. "But counselling teachers, parents and children in advance about occasional adverse effects --- such as stomach pain or nausea --- should be a crucial component of the programme," Kapil told **The Telegraph**.

The programme guidelines advise that the children be given these tablets after the day's main meal to reduce the risk of side effects such as nausea, health officials said. Those who report side effects will be advised to take the tablet after dinner, just before sleeping.
They will also be advised to increase their intake of "iron enhancers" --- food rich in vitamin C such as lemon or *amla* that help absorb iron from vegetarian Indian diets --- and educated in hygiene to reduce the risk of worm infestations.

White paper on R and D

The union government is planning to make it mandatory for the private sector to disclose expenditure on research and development, according to a policy paper released Friday.

The White Paper on 'Stimulation of Private Sector's investment into Research & Development', by a joint committee of industry and government, was released by Science and Technology Minister S. Jaipal Reddy.

It calls for achieving 50:50 partnership of the industry and government in research and development (R&D) from the current 25:75.
"India has laid high emphasis on attracting investment of private sector into R&D to match public investments, that is one percent of Gross Domestic Product (GDP), each by government and industry by 2017," said Reddy.

The policy paper lists out six recommendations for creating a policy environment which could stimulate higher investments by private sector into R&D.

Currently companies are not mandated to disclose expenditure incurred on R&D in their balance sheets and annual reports.

"Some voluntary disclosures provide access to information but it does not enable a realistic estimation of investment of private sector into R&D," said the paper.

"The government may mandate disclosure of R&D investment in public domain as an obligation. This would help in proper quantification of investment of private sector in R&D,"

it said.

While public investments meet nearly global benchmarks of 0.7 percent of GDP in India, private sector engagements into R&D are significantly lower than those in developed and other emerging economies.

The joint committee also recommends an incentive system for stimulating individual inventors, public funded institutions and private sector for commercialization on R&D outputs.

The committee calls for allocating budget for building technology depth in six priority sectors - transportation, electronics, pharmaceuticals and biotechnology, minerals and materials, heavy industries and next generation manufacturing technologies.
Prime Minister Manmohan Singh had recently said that attracting private investment in R&D remains a challenge.

India to play active role in Arctic Council

Nearly a month after India was admitted as an observer into the mineral-rich Arctic Council, India's external affairs minister Salman Khurshid is visiting Norway, a member of the eight-nation forum, where he will pay a visit to the Indian research station, Himadri, in Svalbard. Khurshid is visiting Norway from June 11-13.

India's research station in the Arctic, Himadri, is operated by the National Centre for Antarctic and Ocean Research. It was set up in 2008.

The Arctic region is estimated to hold 13 percent of the world's undiscovered oil reserves and 30% of undiscovered gas deposits.

"We are extremely interested in the Arctic region and intend to play an active role in the Arctic Council too," said external affairs ministry spokesperson Syed Akbaruddin at a briefing, adding that it would be an area of focus for Khurshid while he is in Norway.
Norway is the third largest exporter of oil after Saudi Arabia and Russia and it also has expertise in deep sea oil extraction. "So, there will be areas of cooperation, and with that we could learn from Norway some of the best practices that they adopt in that area," Akbaruddin said.

The eight Arctic nations are: Canada, Denmark, Finland, Iceland, Norway, Russia, Sweden and the United States. India alongwith China, Italy, Japan, South Korea and Singapore were granted observer status by the Arctic Council on May 15.

India has four scientists working at the Himadri research station. India has spent $3 million on research activities so far and plans to enhance the amount, Akbaruddin informed. "During the next five years an amount of about $12 million is expected to be spent on research through the Himadri centre," he added.

Around 170 Indian scientists have written on Arctic research matters and 18 Indian institutions are focused on research related to climate through the Arctic.
Khurshid would hold bilateral meetings with his counterpart Foreign Minister Espen Barth

Eide and also meet senior officials in the Norwegian government, including Prime Minister Jens Stoltenberg. Norway is one of the world's largest petroleum exporters.

Trade will be a major focus of Khurshid's visit. The Government Pension Fund, Norway's sovereign wealth fund which has a capital of $720 billion and is into petroleum, is keen to invest in India. Its areas of interest are maritime, oil and gas, shipping and hydropower, the country's envoy Eivind S. Homme had told IANS last month.

Officials of the sovereign wealth fund had visited India in April and met Finance Minister P. Chidambaram and Planning Commission Deputy Chairperson Montek Singh Ahluwalia. Khurshid "intends to take this discussion forward and to see how we can facilitate greater investments into India including in the infrastructure sector through the Sovereign Wealth Fund that Norway has", the spokesperson said.

Norway is also pushing India to conclude the trade agreement with the four-nation European Free Trade Association (EFTA). The EFTA members are Liechtenstein, Iceland, Norway and Switzerland.

VVPAT

The Voter Verifiable Paper Trail (VVPAT) system was used on trial basis for the first time in the Nagaland by-elections in September 2013.

The VVPAT system is a new initiative of the Election Commission to ensure free and fair elections.

The VVPAT unit prints a ballot slip containing the serial number and symbol of the candidate when a vote is cast using the electronic voter machine (EVM).

The ballot slip is visible to the voter for about five seconds behind a ballot slip viewing window.

After this, the ballot slip is cut and it falls into a compartment.

In case there is a dispute about the voting and a petition is filed, the votes can be tallied electronically and physically with the ballot slips that fall into the compartment.

At present, EVMs are used for voting and counting is based on the results in the machines. In comparison, the VVPAT will print a voter's selection, thus also allowing for physically verification of the vote.

The cost of each VVPAT, manufactured by Bharat Electronic Ltd and Electronics Corporation of India (ECIL), is estimated at about Rs 12,000.

To allow its use in the by-election, the Conduct of Elections Rules were amended and notified by the Election Commission on Friday.

Daksh

It is an electrically powered and remotely controlled robot used for locating, handling and destroying hazardous objects safely.

Daksh is a battery-operated remote-controlled robot on wheels and its primary role is to recover bombs. Developed by Defence Research and Development Organisation, it is fully automated. It can climb staircases, negotiate steep slopes, navigate narrow corridors and tow vehicles to reach hazardous materials. Using its robotized arm, it can lift a suspect object and scan it using its portable X-Ray device. If the object is a bomb, Daksh can defuse it with its water jet disrupter. It has a shotgun, which can break open locked doors, and it can scan cars for explosives.

Netra

The **Netra** is an Indian, light-weight, autonomous UAV for surveillance and reconnaissance operations.It has been jointly developed by the Defence Research and Development Organisation's Research and Development Establishment (R&DE), and a private firm.

IAU

The **International Astronomical Union** or **IAU** (is a collection of professional astronomers, at the Ph.D. level and beyond, active in professional research and education in astronomy.[1] It acts as the internationally recognized authority for assigning designations to celestial bodies (stars, planets, asteroids, etc.) and any surface features on them.
Its main objective is to promote and safeguard the science of astronomy in all its aspects through international cooperation. The IAU has its head office in *Paris* .

Shome panel

The government set up a seven-member panel under the chairmanship of Parthasarathi Shome to revisit tax laws and recommend measures for putting in place a stable and non-adversarial tax administration.

Chidambaram made a budget proposal this fiscal "to set up a Tax Administration Reform Commission (TARC) to review the application of tax policies and tax laws and submit periodic reports that can be implemented to strengthen the capacity of our tax system."
As per the terms of reference of the TARC , some of the major tasks entrusted to the Commission are to review the existing mechanism of dispute resolution covering time and compliance cost and recommend measures for strengthening them for both domestic and international taxation.

Besides reviewing the existing mechanism and suggesting measures for deepening and widening the base of tax and taxpayers, the Commission will recommend a system to enforce better tax compliance — by size, segment and nature of taxes and taxpayers, that should cover methods to encourage voluntary tax compliance.

The TARC will also recommend measures for strengthening the database and inter-agency information sharing, not only between the Central Board of Direct Taxes and the Central Board of Excise and Customs but also with the banking and financial sector and other agencies such as Central Economic Intelligence Bureau (CEIB), Financial Intelligence Unit

(FIU) and Enforcement Directorate to ensure better tax compliance through sharing of such data.

MSP for MFP for Tribals

In a move which may help in breaking Maoists' financial backbone, the government has approved a scheme to procure 12 minor forest produces including mahuwa seed, lac and tamarind through a the minimum support price (MSP) mechanism like foodgrain.
The scheme, however, does not apply to MFPs like bamboo and tendù leaves, trade of which has been monopolised by the state governments.

The centrally-sponsored system will remove contractors middlemen who had to pay hefty protection money to Maoists. The responsibility of purchasing the forest produce on MSP will be with the state-designated agencies under the scheme.

Other minor forest produce which are to be procured on the basis of MSP include karanj, sal leaf, sal seed, chironjee, wild honey, myrobalan and gums.

It is estimated that nearly 40% of the Naxalites' annual funding (roughly Rs 140 crore per annum as per a recent study conducted by a think tank) comes from the contractors involved in procuring these minor forest produce in Maoist-affected states.

Maoists manage rest of their funding through extorting miners, road contractors and private companies in mineral-rich red zone including Jharkhand, Odisha and Chhattisgarh.

The scheme, which got the Union Cabinet approval on Thursday, will also ensure that the tribal population gets a remunerative price for the produce they collect from the forest. It will also provide alternative employment avenues to them. An estimated 100 million forest dwellers depend on the minor forest produce for food, shelter, medicines, and cash income.
The ministry of tribal affairs will be the nodal authority for implementation and monitoring of the scheme. The MSP would be determined by the ministry with technical help of TRIFED. The scheme will have Rs 967 crore as central government share and Rs 249 crore as the state's share for the current Plan period.

The idea of choking the flow of fund to Maoists through MSP-based system was first discussed during the chief ministers' conference on June 5. The meeting was held in the backdrop of the brutal attack in Chhattisgarh which left 28 people including senior Congress leaders of the state killed on May 25.

Deliberations on strategy to deal with the problem had seen chief ministers of seven naxalite-affected states agreed to have a policy where the states can directly procure forest produce through MSP mechanism so that such economic activity does not fall into the hands of Maoists.

"At present, these lucrative forest produce are being procured by private contractors who have to part their earnings with Maoists out of fear. Once states start procuring these products, it will help in blocking the 'finance' of red ultras", said an official.

The new scheme seeks to establish a system to ensure fair monetary returns for forest dweller's efforts in collection, primary processing, storage, packaging, transportation etc, while ensuring sustainability of the resource base. "It also seeks to get them a share of

revenue from the sales proceeds with costs deducted," said an official statement.
It will cover minor forest produce, which are not nationalized in states having scheduled areas and scheduled tribes in accordance with Fifth Schedule of Constitution. These are Andhra Pradesh, Chhattisgarh, Gujarat, Madhya Pradesh, Maharashtra, Odisha, Rajasthan and Jharkhand.

"The scheme supports primary value addition as well as provides for supply chain infrastructure like cold storage, warehouses, etc. Emphasis on scientific harvesting along with interventions stated in the scheme can sustain the process while ensuring higher returns to the collector. This package of intervention can help in organizing unstructured minor forest produce markets," said an official statement.

RBSK

The Government of India recently launched a new programme – Rashtriya Bal Swasthya Karyakram (RBSK) – under the National Health Mission (NHM) in February 2013 to focus on the health of school-going children.The programme hopes to improve the quality of life of 270 million children with a focus on early detection of birth defects, diseases, deficiencies and disabilities (4Ds). The children will have access to public health facilities as well as facilities in their schools.

Croatia joins EU

Croatia applied for EU membership in 2003.The country became the 28th EU member country on 1 July 2013.

Gwadar corridor and China

Gwadar Port is a warm-water, deep-sea port situated on the Arabian Sea at Gwadar in Balochistan province of Pakistan. Gwadar Port is situated near the strategic Strait of Hormuz and its busy trading and oil shipping lanes. The surrounding region is home to around two-thirds of the world's oil reserves. It is also the nearest warm-water seaport to the landlocked, but energy rich, Central Asian Republics and landlocked Afghanistan.

The Nawaz Sharif government is likely to give a special status to its strategically important Gwadar port similar to that of Hong Kong. Pakistan has already given operational control and management of Gwadar, a deep-sea port on the Arabian Sea, to a Chinese company. But a special status to Gwadar may empower China to control the entire location.

Pakistani and Chinese officials said China may build a naval base in Pakistan. Chinese influence in Pakistan and the South Asian region will certainly increase if China's Overseas Port Holding Company's acquisition of management of the commercial port in Gwadar is followed by the PLA Navy's use of the facility.

The Kashgar-Gwadar corridor, connecting China to Gwadar port, is a 2,000-km transport link connecting Kashgar in northwestern China to the Pakistani port of Gwadar in Balochistan. Gwadar Port would help reduce the time needed for transportation of Chinese exports from 16 to 4 days, besides reducing the cost considerably.

Pakistan China Economic Corridor

Pakistan's internal security situation as well as its relations with India and Afghanistan will play a key role in the proposed USD 18-billion China-Pakistan economic corridor. The

2,000-km corridor connecting China's Xinjiang province with Pakistan's Gwadar port involves railways, highways and oil and gas pipelines.

India's concerns relating to the project as it runs through the disputed Pakistan-occupied-Kashmir (PoK), apart from the security concerns because of the massive Chinese involvement.

The corridor will speed up development in Xinjiang, which has seen frequent unrest, and also open up a new route for China's energy imports from West Asia.

NTRO

The National Technical Research Organisation (NTRO) is an Indian technical intelligence agency. It is a scientific agency under the National Security Adviser in the Prime Minister's Office, India. It was set up in 2004. It also includes National Institute of Cryptology Research and Development (NICRD), which is first of its kind in Asia. The Government had been working in this direction after the Kargil war in 1999 when the Subrahmanyam committee report pointed out weaknesses in intelligence gathering in the national security set up.

it acts as a super-feeder agency for providing technical intelligence to other agencies on internal and external security. The agency is under the control of India's external intelligence agency, Research and Analysis Wing, although it remains autonomous to some degree.
The organisation does hi-tech surveillance jobs, including satellite monitoring, terrestrial monitoring, internet monitoring, considered vital for the national security apparatus.
The agency develops technology capabilities in aviation and remote sensing, data gathering and processing, cyber security, cryptology systems, strategic hardware and software development and strategic monitoring.

It is believed that it deals with imagery and communications intelligence using various platforms,. including satellites. The Indian Infrastructure Protection Centre, an agency to monitor and assess threats to crucial infrastructure and other vital installations has also been set up under the National Technical Research Organisation. It is believed that the NTRO, with ISRO, launched the Technology Experiment Satellite. The Technology Experiment Satellite (TES) has a pan chromatic camera for remote sensing. The camera is which is capable of producing images of 1 Metre resolution. The launch of TES made India the second country in the world after the USA that commercially offers images with one metre resolution. It is used for remote sensing of civilian areas, mapping industry and geographical information services.

The first base of the country's specialised technical snoop department NTRO will be made fully operational by early next year in Chhattisgarh to aid anti- Naxal operations and fly Unmanned Aerial Vehicles (UAVs) to help security forces track Maoist activities. The centre will come up at the Bhilai Steel Plant (BSP) facility in Durg and will host technicians and authorities of the National Technical Research Organisation (NTRO). The key project has already been activated with the initial establishment of five satellite-linked terminal stations at a designated location in the state. The sources said the CRPF has also linked the operations of its 10 UAVs with the new facility which will function round-the-clock.

The station will act as a gateway for acquiring satellite data and pass them on to ground patrol parties. The UAVs can then be operated in specified areas for aiding troops on ground. The centre will have the facility to analyse information about geographical features, weather,

available troop reinforcements and logistics before the on-field commanders undertake an operation.

The facility, which will be manned by NTRO-trained Central Reserve Police Force (CRPF) 'Signals' officials, will also share intelligence and geographical information with the NTRO headquarters in Delhi.

Parking bays for the UAVs will also be created in the next few months based on a similar facility of the NTRO in Begumpet near Hyderabad in Andhra Pradesh.

Three Parent Baby

Three-parent babies are potential human offspring that will have three genetic parents. The procedure is intended to prevent mitochondrial diseases including muscular dystrophy and some heart and liver conditions. It is the subject of considerable controversy in the field of bioethics. Scientists have already produced pregnancies in which the fetuses contain DNA from three parents, but none have yet been brought to term.

The process of producing a three-parent baby involves taking the nucleus of one egg and inserting it into the cytoplasm of another egg which has had its nucleus removed, but still contains mitochondrial DNA, and then fertilizing the hybrid egg with a sperm. The purpose of the procedure is to remove a nucleus from a cell with defective mitochondria and place it in a donor cell with healthy mitochondria, which after fertilization will contain a nucleus with genetic material from only the two parents.

Opposition against three parent baby

A group of 34 European politicians, including eight British MPs and peers, has signed a declaration attacking plans which will make the UK the first country in the world to permit the new IVF technique. Under legislation being drawn up by ministers the treatment will be offered to a handful of parents at high risk of having children with conditions such as muscular dystrophy, as early as next year.

The therapy can dramatically reduce the risk of children inheriting disorders of the heart, brain and muscle which are caused by faults in the mother's mitochondria, structures which supply power to cells. But it has proved controversial because it involves substituting a small fraction of the mother's damaged DNA with that of a healthy female donor. Doctors developing the treatment have emphasised that the DNA in question lies outside the nucleus of the cell and will have no bearing on the child's personality or appearance.

But a declaration made by members of the Council of Europe, a human rights and ethics organisation made up of politicians from across Europe, strongly condemned the decision to permit the technique. The declaration compared the technique to a "eugenic practice", and was signed by 34 members of the human rights organisation's 318-strong parliamentary assembly.

India - UK to jointly develop Bangalore - Mumbai Economic Corridor project

The proposed corridor will also connect Bangalore with other cities and towns across the southern state along the National Highway 4 and transform Tumkur, about 70 km from here, into a major industrial hub.

A decision on taking ahead the project, which had been outlined both by Prime Minister Manmohan Singh and British Prime Minister David Cameron in February this year, was taken during the recent meeting that Commerce and Industry Minister Anand Sharma had with UK's Secretary of State for Business, Innovation and Skill Vince Cable and UK's Minister for Government Policy in Cabinet office, Oliver Letwin during his recent visit to London. Mr. Cameron is keen on developing a new economic partnership with India and has been making efforts to enhance the trade and economic engagement and take it to a new level. In fact, it was Prime Minister, David Cameron who had halted the proposal for seeking cash bonds from Indian travellers seeking British visas on the grounds that it would hurt the relationship between the two countries and send a wrong signal at a time when two countries were engaged in expanding their ties.

The Joint Study group, working on forging a close relationship for the project, would work out the details of execution of this prestigious project. The Indian side has already sent to the British government broad guidelines for execution of the joint feasibility study. India has also offered to UK investment or partnership opportunities in the National Manufacturing and Investment Zones.

PRIDe Corridor

It is part of the Andhra Pradesh-Chennai-Bangalore-Mumbai business corridor, also called Peninsular Region Industrial Development Corridor (PRIDe corridor). PRIDe is an industrial corridor providing a potentially strong transport and industrial connectivity linking these states. Steel, cement, food processing, IT/BT, automobile zone, readymade garment zones, petroleum, chemicals and petrochemicals complex are some of the sector specific zones that are expected to in the business hub. Like NIMZ, the government has promises to develop Dharwad as special investment region (SIR).

The SIR will be an integrated development with an amalgamation of several types of industries which may be focused on both domestic and exports segment.

In Karnataka, the corridor includes road length of 550 km (23%), rail length 330 km (41%).

Industrial areas that would be covered: Vasanth Narasapura (Tumkur), Bharamasagara (Chitradurga), Shimoga, Savanur (Hubli), Haveri, Kushtagi-Gadag, Yelburga (Gadag), Belur (Dharwad), Hukeri (Belgaum), Navanagara (Bagalkot).

Malnutrition, tribals and Attappady tragedy

The third National Family Health Survey in 2005-2006 showed that at the all-India level, 46.6 per cent of tribal women and 41.1 per cent of Dalit women have a body mass index that is below normal. Of these, an alarming 21 per cent of tribal women and 18.5 per cent of Dalit women are moderate/ severely thin.

In Attappady, Palakkad district, Kerala, as in other parts of India, dispossession of tribals from their land by various methods of land grab has occurred. There is a consequent forced dependence of tribals on a new weakened public distribution system. In Attappady, once the child deaths became known and the UDF government was held accountable, it was announced that a minimum of 35 kg of food grains would be given to each family. But two months later, even those who hold a BPL card like Kavitha get only 25 to 28 kg of food grains a month. Two years ago, they used to get pulses, oil, salt at subsidised rates. Not

anymore. The mantra to cut subsidies implemented by the UDF government in the food, health and anganwadi sectors hits marginalised communities in a hard and cruel way.

In Attappady, the majority of infants who died were pre-term babies or babies with a very low birth weight. Of the 1,200 pregnant women who registered in the area last year, only 25 had institutional deliveries. One of the reasons women do not go to health institutions is the drastic cut in the facilities in the last two years. There is a Comprehensive Health Insurance Scheme (CHIS) for tribals, which is supposed to cover medicine and other expenses incurred by health institutions on tribal patients. For more than a year, not a single paisa has been released to the hospitals under CHIS.

A public interest litigation plea filed recently in the Kerala High Court paints a shocking picture of the state of anganwadis in Attappady. The food supply for anganwadis was handed over to private contractors by the present government, resulting in rampant corruption. Rotten, inedible food was supplied to children in most of the 172 anganwadis in the area. A Central government team found that the nutrition programme for pregnant women and adolescent girls was not implemented in the last two years. The State had also cut the nutritional requirements by half, cutting out eggs and fruit supplies to the anganwadis. It was only in April, after the furore over the deaths, that the responsibility for supplies was once again given to government agencies.

In the last year, in this area the average number of days of work provided under MGNREGS was only 63 days. With low levels of nutrition, women who comprise a large section of the MGNREGS workers in this area find it difficult to complete the tasks set for them. In this case, the piece rates are linked to a norm which requires a worker to dig or lift mud of around 1200 kg a day.

Although the Ministry of Rural Development in its operational guidelines for 2013 has specifically mentioned that in fixing SORs (schedule of rates), levels of nutrition should also be taken into account, this has not been translated into practice.

According to a recent World Bank study (*The State of the Poor: Where are the Poor and where are the Poorest*), India now accounts for one-third of the world's poorest people — that is those earning around 87 cents, less than Rs 50 a day. In 1981, one-fifth of the world's poorest people lived in India; in 2010, the numbers increased to one-third, around 400 million.

One of the major causes for malnutrition in India is gender inequality. Due to the low social status of Indian women, their diet often lacks in both quality and quantity. Women who suffer malnutrition are less likely to have healthy babies. In India, mothers generally lack proper knowledge in feeding children. Consequently, new born infants are unable to get adequate amount of nutrition from their mothers.

Deficiencies in nutrition inflict long-term damage to both individuals and society. Compared with their better-fed peers, nutrition-deficient individuals are more likely to have infectious diseases such as pneumonia and tuberculosis, which lead to a higher mortality rate. In addition, nutrition-deficient individuals are less productive at work. Low productivity not only gives them low pay that traps them in a vicious circle of under-nutrition, but also brings inefficiency to the society, especially in India where labour is a major input factor for economic production. On the other hand, over-nutrition also has severe consequences. In

India national obesity rates in 2010 were 14% for women and 18% for men with some urban areas having rates as high as 40%. Obesity causes several non-communicable diseases such as cardiovascular diseases, diabetes, cancers and chronic respiratory diseases.

Global Innovation Index 2013

Cornell University, INSEAD and the World Intellectual Property Organization (WIPO, a specialized agency of the United Nations) co-publish The Global Innovation Index (GII), now in its sixth edition. The GII recognizes the key role of innovation as a driver of economic growth and prosperity and acknowledges the need for a broad horizontal vision of innovation that is applicable to both developed and emerging economies, with the inclusion of indicators that go beyond the traditional measures of innovation (such as the level of research and development in a given country).

The Global Innovation Index 2013 (GII) relies on two sub-indices, the Innovation Input Sub-Index and the Innovation Output Sub-Index, each built around pillars.

Five input pillars capture elements of the national economy that enable innovative activities: (1) Institutions, (2) Human capital and research, (3) Infrastructure, (4) Market sophistication, and (5) Business sophistication. Two output pillars capture actual evidence of innovation outputs: (6) Knowledge and technology outputs and (7) Creative outputs.
Each pillar is divided into sub-pillars and each sub-pillar is composed of individual indicators (84 in total). Sub-pillar scores are calculated as the weighted average of individual indicators; pillar scores are calculated as the weighted average of sub-pillar scores.

The framework is revised every year in a transparent exercise to improve the way innovation is measured.

India has slipped two places in the Global Innovation Index 2013 to the 66th rank. Switzerland topped the 142-nation list, launched in Shenzhen, China. The host nation is ranked 35th, and other emerging economies Brazil and Russia are also ahead of India. India ranks third in the lower-middle income group category in the innovation survey.

In the first edition of the GII in 2008, India ranked 23 among 107 countries. After a dramatic slide of 18 positions in 2009, it has been falling less slowly, but steadily.

According to the findings of this year's edition, India fared relatively better on criteria such as gross capital formation (as a percentage of gross domestic product, or GDP) (rank 9), investment in new business (rank 20), industrial cluster development (rank 29), growth rate as a percentage of PPP GDP/worker (rank 14), computer and information services exports (rank 1), creative goods exports (rank 11).

However its low ranking in parameters such as political stability (rank 123), ease of starting business (rank 128), school life expectancy (rank 109), pupil-teacher ratio (rank 108) and knowledge absorption (rank 122) was instrumental in its downward journey.

This year's toppers in the GII were Switzerland and Sweden's followed by the UK, the Netherlands and the US in that order performance.

This year's report casts additional light on the local dynamics of innovation, an area which has remained under-measured globally. It shows the emergence of original innovation eco-

systems, and signals a needed shift from the usual tendency to try and duplicate previously successful initiatives. India ranked 1st in the Central and South Asia region followed by Kazakhstan and Sri Lanka, and 11th overall in innovation efficiency ratio. (Innovation efficiency reflects the innovation output per unit of innovation input in the economy).

DPP-2013

Against the backdrop of scams such as the VVIP chopper deal, a new defence procurement policy came into force which aims at enhancing transparency and probity in military purchases and gives first right of refusal to Indian vendors to promote indigenous industry.
The first major change that has been brought in relates to the introduction of the 'preferred categorisation' in the following order; Buy(Indian), Buy & Make(Indian), Make(Indian), Buy & Make, Buy(Global). While seeking the approval for Accord of Necessity (AoN) in a particular category, say, Buy (Global), it will now be necessary to give justification for not considering the other higher preference categories. This is expected to give a stronger impetus to indigenization.

Indigenous content requirements will now extend all the way to the lowest tier of the sub-vendor. Hence, import content in the products supplied by the sub-vendors will not qualify towards indigenous content'.

The requirement of the prescribed indigenous content, e.g. 30% in the Buy (Indian) category is to be achieved on the overall cost basis, as well as in the core components i.e. the basic equipment, manufacturers recommended spares, special tools and test equipments taken together. In addition, the basic equipment must also have minimum 30% indigenous content at all stages including the one offered at the trial stage. It has further been stipulated that an indigenization plan will be provided by the vendor.

In the Buy and Make (Indian) cases, there is no stipulation regarding the minimum indigenous content in the Buy component and the Indian vendor is given the elbow room to achieve the prescribed indigenous content in the overall delivery. This enables the Indian vendor the time to absorb ToT, set up manufacturing facility while concurrently meeting the service requirements.

A major set of changes aimed at making the procurement process speedier includes the stipulation to finalize the SQRs before seeking the accord for 'Acceptance of Necessity' and reducing the validity period of an AoN from 2 years to one year. This will bring down the processing time of individual cases significantly.

A method for assessment of indigenous content, based on self certification by vendors, has been given while keeping provision for audit by MoD or its nominated agency, if found necessary.

Procurement cases are also expected to be speeded up on account of enhanced delegation of powers of the Services Capital Acquisition Plan Categorization Higher Committee (SCAPCHC) from Rs 50 Crores to 150 Crores and the power of the DPB from 150 Crores to 300 crores.

The offset policy mandates that foreign firms winning major defence contracts should pump back at least 30 per cent of the contract value to the Indian defence manufacturing sector.

FDI in the defence sector

The FDI cap in defence is at 26% and proposals beyond that will be considered by the Cabinet Committee on Security (CCS) on case to case basis. Despite clamours for increasing the FDI cap to 49 percent, the government has not changed the limit. The rationale? An increase in the FDI cap is based on the assumption that higher investment would impinge upon national security, ruin domestic technological development and destroy the nascent indigenous industry. "FDI cap is 26% in defence sector, that stands like that. Any FDI proposal beyond 26% which brings state-of-the-art technology, that proposal would be considered by the CCS.". The definition of state-of-the-art technology would be determined by the defence ministry.

Between 2012 and 2020, India is expected to spend $150 billion to replace its outdated equipment and expand its military. By capping the limit the government is not only preventing foreign companies from sharing technologies with local partners but also allowing PSU defence companies an advantage over private players. According to experts, FDI in defence will not only bring capital, but also technology, skilled manpower, and employment since it will allow the transfer of resources that are required to kick start indigenous green field research, design and development projects. In fact, India is tipped to become the world's third-largest defence spender after the US and China by next year, and equipment spending is reckoned to be $80-100 billion in the next 5 years. But without tweaking the FDI norms large foreign suppliers of defence equipment will not be interested in putting up supply bases in India. Will indigenisation be fast enough for India to achieve its defence needs internally at a time when the country is anyway importing most of its defence needs? "The allocation for capital acquisitions had been growing significantly in the last ten to fifteen years, opening up good opportunities for the Indian private industry but there have not been many significant indigenous breakthroughs in research, design and development of new equipment and weapon systems. In fact, India has now become the largest importer of the defence wares.

Bio toilets in trains

Discharge on Railway tracks, besides leading corrosion of tracks and environmental issues creates problems for workmen on track also. Unlike traditional toilets which discharge waste on the railway tracks, the new toilet developed by DRDO treats the waste in a tank below the coaches. Bacteria in the tank convert the waste into harmless gas and water. The left over in the tank is free from harmful germs.

The particular type of bacteria, which is used in this bio-toilet, has been carefully collected and analysed by DRDO from Antarctica and the efficiency of this system has been tested by DRDO in extreme climates and conditions like those at Siachen Glacier. The anaerobic bacteria used in these bio-toilets can not only survive extreme cold and heat conditions but can also survive when subjected to commonly available disinfectants.

Now these odourless and hygienic bio toilets are fitted in the Kochuveli Bangalore Express running between Thiruvananthapuram and Bangalore, which has become the first train from the Kerala and in Southern Railways fitted with bio toilets.

Benefits of Bio toilet

- Environment Friendly
- Preventing damages to track due to corrosion
- Improved aesthetics at Railway Stations

Advantage of Bio toilets

- Require less maintenance
- Simple in design
- Easier retrofitment on existing coaches in service
- Can be in operation up to two years

The water passing through the chlorine tank is discharged as clean water and the gas escape into the atmosphere. The bacteria once charged will remain till next over hauling of the coach after two years, if managed properly by the passengers and the cleaning staff.

A total number of 1563 bio-toilets have been installed in coaches up to March 2013 for field trials. It is planned to convert all coach toilets over Indian Railways with these bio-toilets after success of the trials.

However, it is planned to induct all new coaches fitted only with environment friendly toilets/bio-toilets from 2016-17 onwards and cover the entire fleet of passenger coaches by 2021-22 provided that there is no technical or operational setback.

However, the railways also seek cooperation of passengers for the success of this project as disposing plastic bottles, paper cups, cloth rags, sanitary napkin, diapers, poly bags and 'gutka' pouches etc choke these toilets and makes them defunct.

Nirbhaya Fund

The Rs. 1,000 crore special Nirbhaya fund announced by the UPA government to bolster safety and security of women in Indian cities is named after the 23-year-old medical student, brutally gang raped in the capital last December who died a fortnight later. After the initial squabbling of administrative control over the corpus, the finance ministry had in June announced it would hold the purse strings directing other ministries, including home affairs, health, women and child development, social justice and empowerment and Planning Commission to prepare schemes.

The Union Ministry of Women & Child Welfare has drawn up a national plan under the Nirbhaya Fund to provide protection to vulnerable women. Titled *Shubh*, this is the Ministry's first programme undertaken with financial aid from the Rs.1,000-crore Nirbhaya Corpus Fund.

Shubh is aimed at mapping vulnerabilities and identifying areas and categories of women who need special protection measures such as women in prostitution or widowed women.
Hundred per cent financial assistance would be provided to State Governments/Union Territories for 2.6 years of this Plan period to implement the various components of the scheme in a public-private partnership model.

Quneitra Crossing, UNDOF and Indian peace keepers

The Quneitra Crossing is a ceasefire line crossing between Syrian controlled territory and the Israeli-occupied portion of the Golan Heights. Syrian Druze from the Golan Heights are permitted to cross through the passage to study, work and live in Syria.

The crossing is also used for the export of apples grown by Israeli Druze farmers under the auspices of the Red Cross. The only concrete guard post along the border is at the Quneitra crossing.

The opening of a crossing at Quneitra took place after the Yom Kippur War in 1973. From early March 1974, the situation in the Israel-Syria sector became increasingly unstable, and firing intensified. The United Nations Disengagement Observer Force (UNDOF) was established on 31 May 1974 by Security Council resolution 350 (1974), following the agreed disengagement of the Israeli and Syrian forces in the Golan Heights.

Since then, UNDOF has remained in the area to maintain the ceasefire between the Israeli and Syrian forces and to supervise the implementation of the disengagement agreement.
On 6 June 2013 the crossing was attacked by Syrian rebels and temporarily occupied. Syrian government forces were able to quickly retake the crossing. In the same month two UN peacekeepers were wounded when Syrian rebels captured a Golan border post, but were then driven out by Syrian troops. Rebels have detained peacekeepers on several different occasions before releasing them.

Japan and Croatia already have withdrawn troops from UNDOF due to the violence and Austria has started bringing home its contingent of some 380 troops. About 500 Fijian troops will fill the gap, while the United Nations is still in talks with various countries to find several hundred more troops to join the force.

The Philippines already has some 340 troops in UNDOF along with nearly 200 troops from India.

UN troops monitoring the 1974 disengagement agreement between Syria and Israel traditionally only carry small arms.

The UN Security Council renewed for six months in June-end a peacekeeping mission in the Golan Heights monitoring a decades-old truce between Israel and Syria that has been shaken by a spillover of violence from Syria's civil war.

The unanimously agreed resolution stresses the need for the peacekeepers, who currently just carry handguns, to boost their protection. Diplomats said troops would likely now get equipment such as flak jackets, armoured vehicles and machine guns. The United Nations also plans to increase the force, which is known as UNDOF and has been operating with about 900 troops, to its authorized strength of 1,250.

EC's "name and shame" policy on paid news

According to the EC, paid news is an advertisement under the grab of news promoting a particular candidate. The district media certification and monitoring committee headed by the district electoral officer is responsible for spotting instances of paid news.

The names of those indulging in paid news, including candidates and media houses, will be uploaded on the website of the EC. Paid news cases in the print media will be referred to the Press Council of India and those in the electronic media will be referred to the National Broadcasting Standards Authority. These measures will be enforced in Delhi for the first time. However, lack of proper investigation has been a major issue in identifying paid news items. Commission officials said CEOs have to ensure that a final decision on paid news is taken only after hearing to all sides of the story.

Forty per cent of all election expenditure of political parties relates to media. Once a news item is declared paid news, the Commission adds up its cost as election expenditure of the candidate sponsoring the news item.

However, the Commission believes that self-regulation of the media is the answer. the media to follow Section 126 of the Representation of the People Act, 1951 which 'prohibits displaying any election matter by means, inter alia, of television or similar apparatus, during the period of 48 hours before the hour fixed for conclusion of poll in a constituency.
The Election Commission has also decided to take up media reports about violations of the Model Code of Conduct. Any report that comes through from media about violations in Model Code of Conduct will be taken up *suo motu* as complaint.

As an electoral reform proposal, the Election Commission has also recommended that advertisements of political parties be stopped six months before elections are due in any State or in the country.

Restoration of Lake Pashan, Pune

Pashan Lake is an artificial lake near the suburb of Pashan, about 12 km from the city center of Pune, India. The lake was created by an ancient dam across Ramnadi, a tributary of the Mula river of Pune city. The main inlet of the lake is a small rivulet (*Ram Nadi*), which is even controlled by the barrage located to the north of the lake. Pashan lake has a total catchment area of 40 square kilometres, and serves as a source of water to the old Pashan village, and the Governor's residence, as well. Recent urbanisation around the lake has led to the fall in the quality of the water.

Recently, deforestation on nearby hills has caused heavy silt formation resulting in decrease in the depth of the lake. Ipomea weed is also cited as a major cause of lake's deterioration as it prohibits the growth of other plants. The water quality deteriorated fast as the quantity of sewage water and other effluents mixing in the water kept rising.

The Pune Municipal Corporation (PMC), working closely with the Institute of Environment Education and Research, Bharati Vidyapeeth University (BVIEER), funded by the Jawaharlal Nehru National Urban Renewal Mission (JNNURM), launched an eco-restoration project that has successfully brought Lake Pashan and its surrounding wetlands back to their original glory.

The lake was fully drained in May 2005 with a view to dredging and removing the silt. Recognising the need for scientific inputs, BVIEER was requested in 2006 to prepare a full-fledged eco-restoration project for Pashan. At a total cost of Rs 16.7 crore, the project was sanctioned under the JNNURM in 2006, and the contract for implementation was given to a private company, NERIL, based on competitive bidding. The government of India contributed 50 per cent of the funds, the government of Maharashtra 20 per cent, and the PMC, 30 per cent. The project has been completed in six years with a close partnership in continuous monitoring of progress by the PMC and BVIEER.

The desilting has been designed such that the lake would have open water, a shallow submerged shoreline with emergent floating vegetation, and banks covered with typha. Bamboo clumps have been planted to screen the water from external disturbances. A buffer is provided by planting 1,200 trees on the embankment. In addition, 350 indigenous fruit-

bearing trees have been planted around the lake and on the island, contributing to the terrestrial ecosystem.

Part of the silt was used to construct a 17-acre island within the lake. Of this, 10 acres are partially submerged when the lake is full. This provides roosting and feeding ground for birds preferring shallow water during the summer drawdown.

Changing nature of Indian SMEs

Small and medium enterprises in India are more aggressive than their global counterparts in using technology to expand their operations overseas and driving efficiency and innovation within the organisation.

Increasing global competition is the greatest issue affecting Indian small and midsize enterprises (SMEs), with 43 per cent citing it as a top concern (the global average is 26 per cent), the highest ranking among all countries featuring in a new study. Economic uncertainty (34 per cent) and shifting customer expectations (29 per cent) are distant second and third concerns. The study was conducted by SAP and Oxford Economics.

Global expansion is cited by 58 per cent as the key to growth, followed by innovation, cost reduction, and efficiencies (45 per cent) and expanding products and services (35 per cent). Eighty-three per cent say they now compete with larger firms to a greater extent than in the past.

Among other key findings, 57 per cent of Indian firms say they invest in new technology only when there is a clear return on investment (earlier, technology was not on their radar); 77 per cent are increasingly focused on new geographic markets; and 93 per cent have either completed, are in the process of, or are about to begin a significant business transformation. SMEs adopt new technology faster than even larger enterprises, it has been often seen. Some examples are the use of technology tools such as business management software, mobile technology, analytics and social media, in a bid to drive cost efficiencies, optimise the supply chain, improve product and service development, and improve innovation.

Indian SMEs are aggressively expanding their global reach, the study reveals. Only two per cent generate no revenue outside the country today, and this will fall to just one per cent in three years - the most "globalised" of all the countries surveyed. Nearly half (48 per cent) expect to be generating 21-40 per cent of their revenue globally in three years. A mere three per cent of Indian SMEs expect to be operating only in their home country in three years (down from 13 per cent today), and the number operating in six or more countries will rise from 24 per cent to 56 per cent (compared with a global level of 15 per cent and 35 per cent, respectively.

Low financial literacy among young urban working people

- Only about 19 per cent of the respondents understood the impact of inflation on the rate of return
- About 24 per cent of the respondents exhibited high financial knowledge
- About 87 per cent of the respondents reported they had attempted to carefully evaluate financial products
- About 68 per cent of the employed were classified as possessing positive financial behaviour

- Close to half of the respondents exhibited a positive attitude towards financial planning and did not show a very high propensity for consumption
- About 90 per cent of the responded were found to be strongly inclined to assess the affordability of items
- About 66 per cent of the respondents reported that they avoided borrowing by depending on their savings or assets during periods of financial difficulty

Despite the education levels of the respondents in the sample being high (a large proportion being graduate and post-graduate), that does not translate into adequate financial literacy. This is likely to be due to the absence of inputs relevant to financial literacy in the general education process. This can be easily corrected. Given the emphasis on education in India, it should be possible to enhance financial literacy among youngsters relatively quickly, through the inclusion of relevant material on financial literacy in the general education programme of schools and colleges, the study said.

Living in joint families negatively impacted the level of financial knowledge, the study showed. While post-graduation and marriage increased the odds of financial literacy, absence of budgeting decreased the odds. Financial decision-making without consultation also decreased the chances of good financial knowledge. According to the study conducted by IIM-A, understanding of inflation wasn't widespread.

The study showed the importance of contextual variables that might influence financial literacy. The influence of joint families and the consultative financial decision-making process, trends specific to India, confirm the importance of contextual variables.

While the significant positive relationship between financial knowledge and financial behaviour is, perhaps, to be expected, the significant negative relationship between financial attitude and financial behaviour is surprising. A plausible explanation for the latter result is likely to lie in the concept of locus of control. Despite having sensible attitude towards managing their finances, youngsters tend to behave in a profligate manner which gives rise to the observed negative association between attitude and behaviour, the study reported.

Most Indian cos lag behind in innovation, sustainable dev

Most companies in India are not engaged in developing "sustainable and inclusive innovations" as they do not identify with sustainable development or green growth, says a study by industry body CII.

According to the study, Indian companies are mainly focused on existing products which leads to complacency and lack of innovation. Moreover, their governance culture, too, does not encourage innovation, leading to the scenario.

According to the study, innovation in India continues to be plagued by quality shortfall in human capital, and less than required investments and infrastructure in research and development activities. However, tightening environmental legislations in India, demand for demonstration of better environmental footprint by international buyers, business risks arising due to environmental challenges and creation of new markets for green products are the primary reasons for companies to go green, the study said.

Apex court asks states to follow panel's directives on teachers

The Supreme Court has ordered the Centre and state governments to strictly follow the directives of a court-mandated panel in order to prevent deteriorating teachers' quality in the country.

The sub-committee was formed by the HRD ministry under court directives to ensure implementation of the Justice Verma Commission's recommendations. The nine-member commission, headed by ex-CJI J S Verma, was mandated to examine the entire gamut of issues which had a bearing on improving the quality of teacher education and the regulatory functions of the National Council for Teacher Education (NCTE).

While the Central Advisory Board on Education endorsed Justice Verma Commission's report, the SC order now makes the directions of its sub-committee binding on all the governments and hence permission to open a teacher training institution will now have to be subjected to the sub-committee's standards.

The Honourable Supreme Court had in May, 2011 appointed a High Powered Commission under the Chairmanship the former Chief Justice of India, Justice J.S. Verma to examine various aspects relating to the teacher education system, including the role and function of the National Council for Teacher Education (NCTE), and recommend measures for improvement. The Commission submitted its Report to Honourable Supreme Court on 29.08.2012 and made recommendations in four main categories as under:-

i. Quality of Pre-service Teacher Education
ii. Quality of In-service Teacher Education
iii. Teacher Performance and Teacher Audit
iv. Strengthening the Regulatory functions of the National Council for Teacher Education (NCTE)

Bringing teacher education under the higher education system, a policy framework for in-service teacher educators, enhancing duration of teacher education programmes, a teacher education assessment and accreditation centre and an organisational restructuring of the National Council for Teacher Education (NCTE) are some of the key reforms. The NCTE is the regulatory body for teacher education in the country.

The Government and the National Council for Teacher Education (NCTC) have taken several steps to improve the quality of teacher education. These include laying down teacher qualifications under the Right of Children to Free and Compulsory Education (RTE) Act, 2009; specifying passing the Teacher Eligibility Test (TET) as an essential qualification for being appointed as a teacher in classes I-VIII; the development of the National Curriculum Framework of Teacher Education, NCFTE (2009); the preparation of model syllabi for teacher education courses; the revision of the Centrally Sponsored Scheme of Teacher Education for the XII Plan, which entails the strengthening and expansion of existing institutional structures such as the District Institutes of Education and Training (DIETs), the College of Teacher Education (CTEs) and the Institutes of Advanced Studies in Education (IASEs), the strengthening of the State Councils for Education Research and Training (SCERTs), and the establishment of Block Institutes of Teacher Education (BITEs) in SC/ST/Minority concentration districts, etc.

Code of ethics in cricket as per ICC

The **ICC Cricket Code of Conduct** is a regulation regarding the conduct of professional players in the sport of cricket. Traditionally, cricket requires "gentlemanly" conduct from all players. The Code of Conduct is written and enforced by the International Cricket Council. Under the ICC regulations, players may be fined a percentage of the salary, banned for number of matches, or even banned for a number of years or life. The ICC appoints a match referee for each Test match, One Day International and Twenty20; the Referee has the power to set penalties for most offences, the exceptions being the more serious ones.

The following are the general categories of serious offences, carrying the highest penalties:

- Gambling on matches (betting).
- Failing to perform in a match in return for a benefit, such as money or goods (match fixing).
- Inducing a player to perform one of the above two actions.
- Failure to report certain incidents relating to match-fixing or gambling.
- Other related offences.

Other offences are categorized as Level 1, Level 2, Level 3, or Level 4 as follows:

Level 1

- Breach of the Logo Policy (except for a commercial logo or player's bat logo).
- Abuse of equipment clothing, or any part of the ground.
- Showing dissent at an umpire's decision by word or by action.
- Using language or a gesture that is obscene, offensive or insulting.
- Excessive appealing.
- Aggressive pointing towards the pavilion by a member of the fielding side upon the dismissal of a batsman.

Level 2

- Repeat of any Level 1 Offence within 12 months.
- Showing serious dissent at an umpire's decision by word or action.
- Breach of the Logo Policy relating to a commercial logo or a player's cricket bat logo.
- Public criticism of a match related incident or match official.
- Inappropriate and deliberate physical contact between players during play.
- Aggressively charging towards an umpire while appealing.
- Deliberate distraction or obstruction on the field.
- Throwing the cricket ball at a player, umpire or official in a dangerous manner.
- Using language or a gesture that is obscene, offensive or of a seriously insulting nature to another player, umpire, referee, team official or spectator.
- Changing the condition of the ball in breach of Law 42.3.
- Any attempt to manipulate a match in regard to the result (In a negative way), net run rate, bonus points or otherwise. (Example: Intentionally losing so that a team will face a weaker opponent in the Finals.)

Level 3

- Repeat of any Level 2 Offence within 12 months.
- Intimidation of an umpire or referee.
- Threat of assault on a player, team official, or spectator.
- Using language or gestures that offends race, religion, colour, descent or national or ethnic origin.

Level 4

- Repeat for any Level 3 Offence within 12 months.
- Threat of assault on an umpire or referee.
- Physical assault of another player, umpire, referee, official or spectator.
- Any act of violence during play.
- Using language or gestures that seriously offends race, religion, colour, descent or national or ethnic origin.

Penalties

The penalties available for each offence are based on the level. The penalties are as follows:

- Level 1: Fine of 0% to 50% of match fee.
- Level 2: Fine of 50% to 100% of match fee and/or ban for 1 Test or 2 ODIs.
- Level 3: Ban for 2 to 4 Tests or 4 to 8 ODIs.
- Level 4: Ban for 5 Tests to life or 20 ODIs to life.

Fines in Level 3 and 4 Offences are determined by the ICC without regard to match fee. Offences relating to gambling or match-fixing carry penalties of bans from 12 months to life, and unlimited fines.

If an offence occurred in a Test match, then the ban for a number of Tests applies; if an offence occurred in an ODI, then the ban for a number of ODIs applies.

IPL scandal, Gurunath Meiyappan and N Srinivasan

The ICC's constitution has a detailed documentation on the Code of Ethics for the custodians of the game in various countries and clauses which are considered as serious breach.

According to ICC's Code of Ethics, there is a specific clause pertaining to gambling, gaming and betting where a 'director' or equivalent and his family members cannot indulge in any activity pertaining to "betting business" but there is no specific mention of son-in-law in that particular clause.

The clause 7.2 (d) of ICC's Code of Ethics states: "It is not permitted and a director shall be in breach of this Code if a member of his immediate family (being a spouse, parent, sibling, son or daughter) has a controlling interest in a betting business, a substantial relationship with a betting business or is employed in the day to day operational control of a betting business."

If one goes by the clause, Meiyappan's arrest on charges of betting on IPL matches can't be called a breach of ICC code on Srinivasan's part.

Olympic charter

The Olympic Charter is a 96-page document that details the spirit, behavior and finer details of holding an Olympic Games. It is a guide which informs athletes and officials how they should approach the Olympic Games, and the significance of the Olympics throughout history. It is, in effect, akin to a constitution. It includes the

Chapter One

- The first chapter of the Charter outlines the basis for the document. It details bylaws which pertain to the mission and role of the IOC, Olympic Congress and Solidarity as well as dealing with issues of who holds the rights to the Games, symbols, flags, mottoes, anthems, emblems and the Olympic torch and flame.

Chapter Two

- Chapter two is the doctrine which summarizes the roles and responsibilities of the IOC. It details the member states, the executive, the president, commissions, ethics and the measures and sanctions available to the IOC. There is also a section on languages and a guide as to how the resources of the IOC should be disseminated.

Chapter Three

- The third chapter of the Charter is by far the shortest, at only one-and-a-half pages. It outlines the roles and responsibilities of International Federations. International Federations are each individual Olympic sport's governing body, and this chapter details the relationship and obligations held between the IOC and the International Federations.

Chapter Four

- The penultimate chapter regards the National Olympic Committees (NOCs.) The NOCs are each individual nations Olympic Games governing body, and the fourth chapter details the role of NOCs both in their domestic and global context, how NOCs must be composed to be valid for Olympic participation and guidelines that govern the flags, anthems, emblems and mottoes of each NOC.

Chapter Five

- The fifth and final chapter of the Charter is the longest. It details the many practicalities involved in organizing and hosting an Olympic Games, including how host nations are chosen, the location and venues that will specifically host Olympic events within the nation, and how national organizing committees should be composed.
- The fifth chapter also makes provisions regarding the Olympic Village, which hosts the athletes and officials during a Games, as well as restrictions on the age of athletes, anti-doping guidelines and sanctions, how media, advertising and propaganda should be handled by host nations, how official ceremonies should be administered and the rights of the host nation to use Olympic branding.

New desalination technique

Lockheed Martin, one of the world's largest military contractors, has developed a process that company officials say significantly reduces the amount of energy needed to desalinate water, an innovation that could help communities worldwide tackle the growing threat of water scarcity.

According to the U.S.-based company, the new process uses ultra-thin carbon membranes made up of graphene with holes large enough to allow water to pass through, but small enough to block the salt molecules in seawater, Reuters reports. Because the membranes have holes as thin as a single atom, the process would require far less energy than existing desalination technologies, which rely on reverse osmosis, the company says. It's 500 times thinner than the best filter on the market today and a thousand times stronger. The energy that's required and the pressure that's required to filter salt is approximately 100 times less.
A 2011 study found that desalination technology could be the cheapest approach to meeting the planet's growing water needs. to a U.S. government report, availability of fresh water supplies will not keep up with global population growth in the next three decades unless countries develop improved water resource management strategies.

Across the world, people use 25 trillion litres of water per day. That is about 9.1 quadrillion litres an year. India and China use 1.2 quadrillion litres an year, while the US uses 1.1 quadrillion litres an year.

India and Central Asia

Foreign policy is often guided by pragmatism and national interests often guide realpolitik and bilateral relations. While India has deep historical and cultural ties with Central Asia, the energy-rich region is now courting China like never before. Cash rich-China is all over five Central Asian states with energy deals, pipelines and road and railway projects.

After launching its 'Connect Central Asia' policy last year, Delhi is developing a strategy to partner countries like Germany and Turkey to get a share of the natural resources in the region. Besides oil and gas, energy-hungry India is eyeing imports of uranium from both Kazakhstan and Uzbekistan. Beyond natural resources, the strategy is to focus on education, IT, pharmaceuticals and medical tourism, amongst other sectors, where India has developed expertise over the years. Delhi, like, Beijing, is also eyeing large cultivable tracts of land in the Central Asian states for production of profitable crops with value addition.

In September, India held consultations with China on expanding its presence in the landlocked region. The dialogue took place in the backdrop of a snub to India when it tried to enhance its presence in the energy sector of the region's largest country. The Kazakh government awarded a stake in the Kashagan oilfield in the Caspian Sea to the Chinese state-run China National Petroleum Corporation (CNPC) after it blocked the sale of the stake of US firm ConocoPhillips to ONGC Videsh Ltd (OVL).

China's engagement with the region has progressed in phases and is centered on strengthening economic relationships, and addressing threats of security emanating from the region due to terrorism, extremism and Islamic radicalism. China has extended economic aid both through the mechanism of the Shanghai Cooperation Organisation (SCO) as well as on a bilateral basis by providing substantial loans to the five states. Other than oil, Beijing is keen on investing in precious resources like tungsten and uranium mines.

Central Asia is an area of vital importance to India because of the common challenges they face from extremism and terrorism. India considers the region as its extended neighbourhood and thus has strategic security and economic interests in the region. Instability in Afghanistan poses a serious threat to the security of India and the Central Asian states. According to the Connect Central Asia Policy, "India will strengthen its strategic and security cooperation. India already has strategic partnerships in place with some Central Asian countries. In focus will be military training, joint research, counter-terrorism coordination and close consultations on Afghanistan."

India's three pillars of strategic partnership with the region now are defence ties, counter-terror and stabilising Afghanistan. Away from the public glare, India's only military base abroad (the Ayni air base) is in Tajikistan. This is strategically located as it would assist Indian operations in Afghanistan if need be.

India is currently focusing on its strengths and is ready to extend cooperation by setting up civil hospitals and clinics in Central Asia. India is working on setting up a Central Asian e-network with its hub in India to deliver tele-education and tele-medicine connectivity, linking all the five Central Asian states.

The country's higher education system delivers at a fraction of the fees charged by Western universities. Keeping this in mind, India would like to assist in setting up a Central Asian University in Bishkek, the capital of Kyrgyzstan, which could come up as a centre of excellence to impart world-class education in areas like IT, management, philosophy and languages.

The government is also looking at opportunities for Indian companies to showcase their capability in the construction sector and build world-class structures at competitive rates. Central Asian countries, especially Kazakhstan, have almost limitless reserves of iron ore and coal, as well as abundant cheap electricity. India also plans to set up several medium-sized steel rolling mills, producing its requirement of specific products.

While India is accepted by all five Central Asian Republics, India's delivery mechanism is very slow. Indian private companies do not take enough interest in this region.

Absence of a viable banking infrastructure in the region is a major barrier to Indian trade and investment.

However, the biggest impediment for India is the absence of a direct land route to Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan. China, which shares a land boundary with some of these states, has a huge natural advantage over India in this regard. India must work out its smooth connectivity route to Central Asia through Iran to bolster its presence there. Central Asia will become geopolitically important after US troops withdraw from Afghanistan next year.

To address this India has reactivated the International North-South Transport Corridor (INSTC). The corridor is the ship, rail and road route for moving freight from South Asia to Europe through Central Asia, the Caucasus and Russia. The route primarily involves moving goods from India via ship to Iran. From Iran, the freight moves by ship across the Caspian Sea or by truck or rail to southern Russia. From there, the goods are transported by truck or rail along the Volga River through Moscow to northern Europe. The corridor will have its starting point from JNPT port in Mumbai, and via transhipment the goods will reach Bandar Abbas port (near Strait of Hormuz) in Iran; the plan for the corridor includes building a railway link between Iran, Turkmenistan, Kazakhstan and eventually Russia.

Simultaneously, the importance of a $7.6-billion Turkemenistan-Afghanistan-Pakistan-India gas pipeline project as a transit route between Central Asia and South Asia through Afghanistan cannot be undermined.

The Iranian port of Chabahar will serve as India's gateway to Afghanistan through the Zaranj-Delaram Roadway (ZDR) in Nimroz province, built with India's assistance. India will invest in the expansion of Chabahar port. The ZDR is connected to the Garland Highway, which links up with Central Asia. The port's expansion and connection with Afghanistan will deepen India's ties with energy-rich Iran; help it access Central Asian markets without relying on Pakistan; through the Iranian port of Bandar Anzali on the Caspian coast India will be able to get access to Russia; and most importantly ZDR will help India connect with Afghanistan and Central Asia, bypassing Pakistan.

India also wants step up multilateral engagement with Central Asian partners using the synergy of joint efforts through existing fora like the SCO, Eurasian Economic Community

(EEC) and the Customs Union. India has already proposed a Comprehensive Economic Cooperation Agreement to integrate its markets with the unifying Eurasian space. With Russian support, Delhi is pushing hard to become a member of SCO.

Revised Social Protection Index

The Social Protection Index (SPI) divides total expenditures on social protection by the total number of intended beneficiaries of all three social protection programs e.g., social insurance, social assistance, and labor market programs. The SPI can be disaggregated into the depth and breadth of coverage of social protection. Depth means the average size of benefits received by actual beneficiaries, and breadth means the proportion of intended beneficiaries who actually receive benefits. The SPI can also be disaggregated into its impact on the poor and the non-poor, as well as into its impact on women and men. In general, the SPI can be used to highlight the relative importance of those three major social protection programs.
Most countries in Asia and the Pacific have limited institutional and technical capacity to carry out regular monitoring and evaluation on their social protection programs. The SPI, developed by ADB in 2005 and updated in 2013, summarizes the extent of social protection in the region. The SPI is important to provide recent information on the use of social protection programs in Asia and the Pacific. Thus, the SPI helps in systematic and rigorous monitoring and impact assessment of social protection which is a prerequisite to improve the existing systems and developing new policies and programs.

The revised SPI is not a composite index and should not be used for ranking of country on social protection programs.

The SPI does not use national or international poverty lines as a basis for its calculation. Since calculating the revised SPI continues to rely on local currency units to express the expenditure data at the country level, it is necessary to identify a common means to normalize these expenditures by another monetary variable expressed in local currency units. The current indicator (expenditures per reference population) for the revised SPI is expressed in per capita terms; therefore, corresponding per capita normalization variable is needed. The revised SPI uses a simpler and more transparent solution: a relative poverty line for each country that approximate the average of national poverty lines across 27 countries in Asia and the Pacific for which social protection data are available. The regional average for the 27 national poverty lines is about 28% of GDP per capita. Hence, a poverty line for each country that is 25% of its GDP per capita is used for the revised SPI. This poverty line is expressed in per capita terms since it denotes the threshold of total expenditures that each person needs to exceed to be considered non-poor. The choice of a uniform percentage of GDP per capita mitigates the problem that some countries set their national poverty lines very low while others set them very high.

The Social Protection Index: Assessing Results for Asia and the Pacific (2013) produced a wide range of results for the SPI across Asia and the Pacific as a whole. The SPI varies between 0.416 for Japan and 0.005 for Papua New Guinea. Thus, Japan's social protection spending represents about 42% of poverty-line expenditures while Papua New Guinea's represents a mere 0.5%. These percentages are equivalent to 10.5% and 0.125% GDP per capita respectively.

In 2009, Asia and the Pacific already have seven upper-middle-income countries and 19 lower-middle-income countries out of the SPI sample of 35 countries. But the average SPI of the former group, 0.122, is well below 0.200. Also, it is not substantially higher than the

average SPI of the latter larger group, 0.096. The average SPI for all 35 countries is 0.110 (11% of poverty –line expenditure or 2.6% of its GDP per capita). Only four countries have SPIs of 0.200 (or higher) representing 20% (or more) of poverty-line expenditures, or 5% of GDP per capita. Two of the four, Japan and the Republic of Korea, are high-income countries; the other two, Mongolia and Uzbekistan, are post-soviet transition economies which historically has comprehensive social protection systems.

There are many vulnerable groups, including women and informal sector workers, who can't access unemployment, health or other social insurance but are also not poor enough to be eligible for social assistance such as cash transfers. Government social protection programmes need to be expanded to cover this unprotected 'missing middle,' who are at risk of falling into poverty in the case of an economic, environmental, or health shock of some kind.

India ranks 23rd in the Asian Development Bank's Social Protection Index (SPI) – a ranking of 35 countries spanning across Central and West Asia to East Asia and the Pacific region. Even among the 19 countries of the same income level – the lower middle-income group – India ranks 12th, below Philippines and Sri Lanka.

India spent 1.7% of its GDP on protecting the vulnerable. According to the report, despite steep GDP gains in recent decades, the majority of countries in Asia and the Pacific, particularly those that have graduated to middle-income status, have not correspondingly strengthened their systems of social protection. "They need to scale up and broaden these systems by spending that corresponds to 20% of poverty-line expenditures or 5% of its GDP per capita," it said, citing the example of the Republic of Korea.

India's rural jobs programme, Mahatma Gandhi National Rural Employment Guarantee, accounted for 38% of all social protection spending, the report found. The study noted, "India stands out: it has an SPI for labour market programs of 0.250, which is far higher than its social insurance and social assistance SPIs."

India's three labour market programmes take up 40 per cent of its total spending on social protection the MGNREGS accounting for 38 per cent of all such spending and covering 52.5 million beneficiaries.

"The programme appears to have a decent targeting record, providing work for a significant number of poor rural workers and even encouraging women's participation in local labor markets," it said.

However, India scored low on assistance to the disabled, and social insurance such as pensions, insurance and disaster relief.

However, the report does not conclusively prove that higher social protection spending leads to better outcomes on poverty. It doesn't relate the spending figures to the poverty indicators of the countries in the index.

The report observes, though, that the proportion of the extremely poor population in all the countries has become "progressively smaller" and that poverty reduction programmes have been targeting "an ever-smaller share of the population".

CSR funding tech incubators

Clause 470 of the new Companies Act makes it mandatory for companies clocking an average profit of at least Rs 5 crore or with a net worth exceeding Rs 500 crore, or turnover exceeding Rs 1,000 crore in the last three years, to spend two per cent of the net profit on CSR (corporate social responsibility).

In the Budget 2013-14, Finance Minister P Chidambaram said funds provided to technology incubators located within academic institutions and approved by the ministry of science and technology or ministry of micro, small and medium enterprises will qualify as CSR expenditure.

According to a report by SMC Global Securities Limited, during FY13, the combined net profit of listed companies in India stood at Rs 4.37 lakh crore. At two per cent of this, the CSR amount would be around Rs 8,700 crore.

There are four types of incubators — business incubators, technology incubators, technology innovation centres and technology business incubators.

According to a study by the Department of Science and Technology (DST) in 2010, the success rate of incubated companies in India stood at 60-70 per cent, which is comparable to that in the US. The status report stated 20 to 30 per cent of incubated companies make it big. The survey was based on the responses of 28 incubators supported by the DST.

WHAT IT MEANS

For companies

- Fund research in areas they want
- Avail of tax exemptions

For institutions

- Avail of funding, commercial knowledge and mentoring
- Can have their alumni fund started
- Start-ups located in remote areas can also seek funding

Next Generation Sequencing

Next-generation sequencing (also known as massively parallel sequencing) technologies are revolutionising our ability to characterise cancers at the genomic, transcriptomic and epigenetic levels. Cataloguing all mutations, copy number aberrations and somatic rearrangements in an entire cancer genome at base pair resolution can now be performed in a matter of weeks. Further- more, massively parallel sequencing can be used as a means for unbiased transcriptomic analysis of mRNAs, small RNAs and noncoding RNAs, genome-wide methylation assays and high-throughput chromatin immunoprecipitation as says.

The high demand for low-cost sequencing has driven the development of high-throughput sequencing (or next-generation sequencing) technologies that parallelize the sequencing process, producing thousands or millions of sequences concurrently. High-throughput sequencing technologies are intended to lower the cost of DNA sequencing beyond what is possible with standard dye-terminator methods. In ultra-high-throughput sequencing as many as 500,000 sequencing-by-synthesis operations may be run in parallel.

Using different approaches, massively parallel sequencing methods overcome the limited scalability of traditional Sanger sequencing by either creating micro-reactors and/or attaching

the DNA molecules to be sequenced to solid surfaces or beads, allowing for millions of sequencing reactions to happen in parallel.

While the latest high-throughput sequencing instruments are capable of massive data output, NGS technology is highly scalable. The same underlying chemistry can be used for lower output volumes for targeted studies or smaller genomes.

NGS provides a high degree of flexibility for the level of resolution required for a given experiment. A sequencing run can be tailored to produce more or less data, zoom in with high resolution on particular regions of the genome, or provide a more expansive view with lower resolution.

Next-generation methods

- Massively parallel signature sequencing (MPSS)
- Polony sequencing
- 454 pyrosequencing
- Illumina (Solexa) sequencing
- SOLiD sequencing
- Ion Torrent semiconductor sequencing
- DNA nanoball sequencing
- Heliscope single molecule sequencing
- Single molecule real time (SMRT) sequencing

Connor Levy

Connor Levy arrived on May 18 after his parents were offered the use of "next-generation sequencing" -- an in vitro fertilization technique that guarantees the chromosomal integrity of an embryo before it is returned to the mother.

IVF has created more than 5 million babies since it was first used in 1978, and yet it is a procedure with few guarantees. Currently, one in three embryos resulting from IVF have chromosomal abnormalities that prevent the development into a full-term pregnancy. NGS helps to improve those odds.

The new technique could dramatically increase the pregnancy rate from IVF, by using only the most viable embryos. Until now, the quality of an embryo was educated guesswork, leading doctors to transfer two and three at a time, and contributing to a demographic spike in the births of twins and triplets.

The news also raises potential questions -- ones that arise with nearly every advance in assisted reproductive technology -- about what limits society wants to place on how and why embryos are screened. If it is acceptable to only transfer embryos that are prescreened for viability, what about those that are determined not to carry certain diseases (a process that is currently possible, and often done)? Or those that are determined to have certain eye color, height or intelligence (screenings that have different degrees of possibility, but not yet being done)?

DNA databases and privacy

Countries around the world are collecting genetic material from millions of citizens in the name of fighting crime and terrorism, and, according to critics, heading into uncharted ethical terrain.

Leaders include the US, where the supreme court recently backed the collection of DNA swabs from suspects on arrest, and Britain, where police held samples of almost 7 million people, more than 10% of the population, until a court-ordered about face saw the incineration of a chunk of the database.

Recent leaks about US surveillance programmes by former NSA systems analyst Edward Snowden have made people realize their online information and electronic communications may not be as secure as they thought.

Could the same be true of the information we hold within our genes DNA samples that can help solve robberies and murders could also, in theory, be used to track down our relatives, scan us for susceptibility to disease, or monitor our movements.

Critics of DNA databases warn that the various uses of the technology can pose a threat to individual civil liberties. Personal information included in genetic material, such as markers that identify various genetic diseases and behavioral traits, could be used for discriminatory profiling and its collection may constitute an invasion of privacy.

Earlier this year Yaniv Erlich, published a paper in the journal Science describing how he was able to identify individuals, and their families, from anonymous DNA data in a research project. All it took was a computer algorithm, a genetic genealogy website and searches of publicly available internet records.

He says DNA databases have enormous positive power, both for fighting crime and in scientific research, but, our work shows there are privacy limitations.

Civil rights advocates have warned that demographically unbalanced forensic DNA data banks could "create a feedback loop." Because samples are stored and compared against DNA collected at future crime scenes, police will be more likely to pursue crimes committed by members of overrepresented groups, while underrepresented groups can more easily evade detection.

Advocates of DNA databases say that a DNA swab doesn't capture the entire DNA strand, but instead just a profile of 13 markers isolated from some 3 billion. "Those 13 markers were specifically selected by genetic scientists because they have no potential of revealing anything private about you."

The US Supreme Court in July 2013 passed down a ruling stating that it is legal to take DNA swabs from arrestees without a warrant on the grounds that "a DNA cheek swab [was similar] to other common jailhouse procedures like fingerprinting."

Organs made to order

Producing fully functional human organs using induced pluripotent stem cells (iPS cells) will, in the foreseeable future, cease to remain in the realm of science fiction. A team of Japanese scientists led by Takanori Takebe from the Yokohama City University Graduate School of Medicine has taken a giant step by providing proof-of-concept demonstration of a "functional" miniature human liver that produced blood proteins and broke down drugs when transplanted into a mouse. This is the first time a rudimentary functional human organ has

been produced using iPS cells. The same technique can be used to grow other organs like kidneys and pancreas.

Mr. Takebe's team adopted a novel approach to produce in lab three-dimensional liver buds with blood vessels. Unlike others who used only cell lines of the organ they wanted to grow, the Japanese team closely mimicked the conditions that exist during the very early stages of organ development. For this, cell lines from liver buds — a primitive, condensed liver mass that starts forming on the third or fourth week of gestation — were mixed with a few other essential cell lines. While reprogrammed adult stem cells are capable of becoming specialised cells, this study has highlighted that functional organs cannot be grown using the iPS cells alone. The presence of other cells that are normally found during the early stages of organ formation is essential.

In 2011, surgeons working at Karolinska University Hospital in Sweden had taken a huge step forward for regenerative medicine by successfully executing the world's first synthetic organ transplant. The donor-less transplant saved the life of a 36-year-old cancer patient, who is doing well now after having received a new windpipe grown from his own stem cells.

Caste and marriage

While many young Indians are showing an interest in marrying across caste, indications are that not many actually go ahead and cross caste boundaries.

Recent research by Amit Ahuja, assistant professor in the Department of Political Science at the University of California — Santa Barbara, and Susan L. Ostermann, a Ph.D. candidate in the Department of Political Science at the University of California — Berkeley, showed that more than half of the prospective brides contacted by the researchers through matrimonial websites expressed an interest in potential partners belonging to caste groups other than their own. Responding to an expression of interest from three men — one upper caste, one backward caste (BC) and one scheduled caste (SC) but with otherwise nearly identical profiles — 54% of upper caste women and 72% of scheduled caste women expressed an interest in a man outside their own caste. But nearly all the women who responded, including those who showed an interest in men of other castes, expressed an interest in men of their own caste. Their research, which relies upon matrimonial ad-based experiments, shows that a desire for upward mobility within the middle class is driving many to cross the very caste barriers that have divided Indian society for centuries.

When individuals and their families choose marriage partners from their own caste, they perpetuate caste divisions. This is why social reformers viewed intermarriage as a solution to caste divisions in our society.

Since liberalisation, the urban middle class, historically made up of upper castes, has become more diverse. Although the lower castes are still underrepresented, their numbers have increased gradually. The same economic opportunities that have allowed for the financial success of lower castes have opened the door to increasing social integration through intermarriage.

Mr. Ahuja and Ms. Ostermann found that preference for "boundary-crossing" was higher among less affluent upper caste women and more affluent scheduled caste women, and conclude that "[t]he...findings point to the fact that in the urban, Indian, middle-class marriage market, a significant proportion of participants and their families is willing to

consider crossing caste boundaries if it allows them to upgrade their caste or SE [socio-economic] status."

Contrary to popular belief, 62 per cent of 1,070 Dalit and upper caste participants were willing to look beyond their own caste category while responding to matrimonial interests. Their interviews with women in the marriage market indicate that this willingness might be even greater if prospective brides could make decisions independent of their families. These findings reflect a trend found in newspaper matrimonial ads placed in dailies published in Delhi, Mumbai, Chennai and Kolkata: whereas in the 1980s, 28 per cent of ads contained a specific request for a partner of a particular caste, by 2010, only 19 per cent of ads contained such a request.

Why are people willing to cross caste boundaries in the marriage market? In a highly status-conscious society, many people approached the marriage market with a view to upgrade either their economic class or caste status. But, like any other market, the marriage market works on the principle of exchange; to get something, one has to be able to offer something. An upper caste, middle class woman could use her high caste status to upgrade her economic status by marrying a wealthier lower caste man. Similarly, a Dalit woman from a wealthy family could aspire to a caste status upgrade through marriage by leveraging her class status. Although an expression of matrimonial interest does not necessarily translate into a marriage, even considering an inter-caste match represents social change. After all, to consider someone as a life partner, one has to acknowledge the person and their family as respectable.

Even though interest in intermarriage is high among their respondents, not surprisingly, upper castes are more reluctant to intermarry than Dalits; 71 per cent of Dalit and only 54 per cent of upper caste women responded to expressions of interest from outside their own caste. They also found that the shadow of caste-related stigma persists; the Dalit profile was the least likely to elicit a response from potential brides, reminding that social transformation takes time. But there is no denying that today, a fierce desire to move up the status ladder is challenging the significance of caste.

But there is a distinct gap between stated preference and action, said Mr. Rakshit, who takes a keen interest in shaadi.com's data trends; people who say 'caste no bar' are looking at those within their own castes as well as others, their number show. Moreover, while the option to not state one's own caste exists on shaadi.com, just about 10% of users choose not to state their own castes.

This is consistent with both micro and macro data that seems to indicate that inter-caste marriage isn't growing in India. Inter-caste marriages remained fairly constant at around 10% according to the last National Family Health Survey; the proportion is highest among Muslims. In 2009, MIT economist Abhijit Banerjee led a study of 783 families who had placed matrimonial advertisements in Bengali newspapers which showed that "the bride's side would be willing to trade off the difference between no education and a masters degree in the prospective husband to avoid marrying outside their caste." The Centre for the Study of Developing Society's 2009 National Election Study of over 30,000 respondents showed that those who believed inter-caste marriage should be banned outnumbered those who supported it.

It also isn't yet apparent that the hierarchy of the caste system has changed. In Mr. Ahuja and Ms. Ostermann's study, the scheduled caste man was least likely to be contacted, despite all

other variables — including educational qualifications, salary and even skin colour being nearly the same. These findings are strikingly similar to a 2010 labour market study by economist Sukhadeo Thorat, who is now chairman of the Indian Council of Social Science Research, and sociologist Paul Attewell, who posted fictitious resumes in response to job advertisements for private sector companies, and found that the fictitious applicant with a scheduled caste last name was by far the least likely to be called for an interview, despite being qualified. While Mr. Thorat hadn't studied the marriage market, his work in rural Maharashtra had shown nearly no change in intercaste marriage rates, Mr. Thorat said.

Small positive signs as well

According to figures available with the Centre, the number of people tying the knot with dalits is constantly going up, touching 9,623 in 2012 from 7,617 in 2011 and 7,148 in 2010. While the national statistics are on the up, Maharashtra, Andhra Pradesh and Kerala appear to be the top examples in the phenomenon long suggested by social reformers as the best tool to weaken the barriers of caste segregation. To encourage the trend, the Centre pays up to Rs 50,000 to each inter-caste couple that has one spouse as dalit.

Agriculture Biosecurity Bill, 2013

The Agriculture Biosecurity Bill, 2013 that provides for the establishment of an integrated national biosecurity system, covering plant, animal, marine and farm microorganisms to combat threats of bioterrorism from pests and weeds. An agriculture biosecurity authority is proposed to be set up for prevention, control, eradication and management of pests and diseases of plants and animals and unwanted organisms.

The Biosecurity Bill that was introduced in the Lok Sabha in March is also meant to meet India's international obligations to facilitate import and export of plants, plant products, animals, animal products, aquatic organisms and regulation of agriculturally important microorganisms. The proposed Authority will regulate the export and import of plants, animals and related products, prevent entry of quarantine pests from outside India and take steps for post-entry quarantine measures. The Bill repeals the Destructive Insects and Pests Act and the Livestock Importation Act of 1898.

With the liberalisation of global trade in agriculture there is an increased risk of introduction of exotic pests and weeds in the country that can cause serious economic loss. Genetically modified organisms also require proper risk assessment and management. Climate change too has the potential to alter the habitat of known pests and even introduce new pests.

The emergence and spread of trans-boundary diseases such as avian influenza, the Ug-99 wheat stem rust fungus pose new threats to human, animal and plant safety.

The proposed autonomous Authority is meant to improve safety, efficiency, transparency and compliance of quarantine and pest management regulations and respond swiftly to contain biosecurity problems. It will also ensure the conduct of bio-secure international trade in agriculture.

Systems have been developed and put in place over the years for separately protecting plant, animal and marine health, but the emerging challenges that have been highlighted makes agricultural biosecurity an urgent issue. This requires policies and technological capabilities to prevent, detect, and respond to such threats. Thus an integrated approach towards agricultural biosecurity would help to protect human health, agricultural production and

livelihood, safeguard the environment, and protect against uncertain technologies and products. It will also equip the country to meet obligations under international trade and sanitary and phyto-sanitary agreements in food and agricultural products.

China-Myanmar gas pipeline operational

The project, stretching more than 2,500 kilometres, runs from Kyaukpyu on the west coast of Myanmar and will deliver gas to Myanmar and China's energy-deprived southwest, including Yunnan, Guizhou, Chongqing and Guangxi. The pipeline is part of an ambitious $2.5 billion oil and gas pipeline project between the two countries. The pipeline also passes through the Chinese border town of Ruili, where fighting erupted earlier this year between Myanmar government forces and the rebel Kachin Independence Army.

The added delivery of 12 billion cubic metres (420 billion cubic feet) a year will cut gas prices and reduce coal use in China, while limits on industrial gas consumption will be raised. The pipeline will help China diversify its energy imports.

The opening of the gas pipeline had "substantially changed the strategic map of China's energy supply channels" by alleviating what officials have described as the "Malacca dilemma" of being dependant on an energy route through the narrow straits. At present, as many as 80 per cent of China's oil imports depend on the supply line going through the Malacca and Singapore straits, while the maritime route is patrolled by fleets headed by the U.S. navy.

This project is part of a larger Chinese program to lay a road connecting the country's Yunnan province to the Indian border through Myanmar although New Delhi has not yet accepted the road connectivity plan. China also plans to transport crude oil across the Myanmar border and complete an irrigation project in Myanmar which Naypyitaw has stalled.

As a 'four-nation six-party' joint venture, the beneficiaries of the China-Myanmar gas pipeline are not only China and Myanmar. It will also bring huge benefits to South Korean and Indian companies involved in investment. Myanmar will not only collect a 'toll', it can also withdraw a certain amount of natural gas within its territory to ease the pressure of energy shortages, Chinese media has stated.
It comes as close political ties between the two nations have weakened, after Myanmar's quasi-civilian regime took office in 2011 and brought in sweeping reforms that have led to the scrapping of most Western sanctions.

In terms of business competition, the project signals a major headway for China which is increasing winning major contracts in Myanmar at the expense of companies from India and other countries. But China is also facing business resistance from western countries which have moved in since the country began liberalizing the markets last year.

The pipeline is criticized as being unfair for Myanmar. In particular, the project was seen to have caused land confiscation and environmental damage in the region.

World's fastest switch

US department of energy's (DOE) SLAC National Accelerator Laboratory have clocked the fastest-possible electrical switching in magnetite, a naturally magnetic mineral. Their results could drive innovations in the tiny transistors that control the flow of electricity across silicon

chips, enabling faster, more powerful computing devices. It is about 1000 times faster than those in use today.

The study shows how such conducting and non-conducting states can co-exist and create electrical pathways in next-generation transistors. Scientists first hit each sample with a visiblelight laser, which fragmented the material's electronic structure at an atomic scale, rearranging it to form the islands. The laser blast was followed closely by an ultra bright, ultra short X-ray pulse that allowed researchers to study, for the first time, the timing and details of changes in the sample excited by the initial laser strike.

By slightly adjusting the interval of the X-ray pulses, they precisely measured how long it took the material to shift from a non-conducting to an electrically conducting state, and observed the structural changes during this switch.
The magnetite had to be cooled to minus 190 degrees Celsius to lock its electrical charges in place, so the next step is to study more complex materials and room-temperature applications.

MERS and India's disaster management system

The latest threat in this category is from Middle East respiratory syndrome, or MERS, a new affliction caused by a virus similar to, but deadlier than, the dreaded severe acute respiratory syndrome (SARS) virus. The present disaster management system is incapable of preventing the entry of such infections, of checking their spread within the country, or of ensuring their post-epidemic management. There is no biosecurity policy worth its name. Recently, the Agricultural Biosecurity Bill, 2013, was brought before Parliament, but its scope is limited only to safeguarding crops and livestock. There is, however, no such sharply focused statute to protect human health.

The Cabinet Committee on Economic Affairs a few weeks ago cleared the health ministry's proposal to set up a network of laboratories to manage epidemics and outbreaks, to take pressure off the National Centre for Disease Control in Delhi and the National Institute of Virology in Pune, the only two such laboratories at present. In addition, 150 laboratories in 80 medical colleges across the country are supposed to be upgraded to deal with disease control and research. The two proposals together will cost almost Rs 1,100 crore, and may well serve to at least reduce the time between an outbreak and its discovery, as well as help synthesise a vaccine if possible. But there is no proposal to establish a specific nodal agency with the capacity to co-ordinate.

MERS vaccine

A strain of the Middle East Respiratory Syndrome Coronavirus (MERS-CoV) has been created by scientists that could be used as a vaccine against the disease. The lab-engineered MERS virus has a mutation in its envelope protein that makes it capable of infecting a cell and replicating its genetic material, but deprives it of the ability to spread to other tissues and cause disease . The authors say once additional safe guards are engineered into the deadly virus it will be used to create a safe and effective live-attenuated vaccine against MERS.

India-US Joint Research

A dialogue that had begun quietly seven years ago has recently blossomed into a substantial research collaboration involving roughly 100 institutions and nearly 1,000 scientists, according to officials in the Department of Science and Technology. The committed funding from the two countries has also risen from only $2 million five years ago to $220 million.

Nearly half of the funding goes to developing a clean energy development centre, which functions within existing Indian and US institutions.

The prominent US partners are the National Renewable Energy Laboratory, Lawrence Berkeley National Laboratory, Massachusetts Institute of Technology, Stanford University, University of Florida, and private companies like General Electric, Autodesk, Cookson Electronics, and Honeywell. They are trying to develop next-generation technologies in solar energy, biofuels and green buildings.

There are also partnerships in weather forecasting, healthcare and creating open government data platforms. The monsoon mission of the government of India, a .`400-crore project to improve forecasts of the south-west monsoon, funds several collaborations; one of them is a monsoon desk at the National Centers for Environmental Prediction in Maryland, a US government organisation that provides weather forecasts and analyses to agencies around the world.

India is a scientific partner in the $1.2-billion telescope coming up in Hawaii, which will the most powerful so far in the world.

The motivation for the collaboration stems from the fact that the two countries have many common problems that will benefit from joint research. Although the US is scientifically advanced, some contemporary problems require research inputs from multiple perspectives. The US could provide advanced scientific inputs to India, while India with its large scientific establishment and unique traditions could help US look at things from a different perspective. In the early stages of the programme, the decision of what to work on was left to the scientists, but now this is decided at the government level.

The Joint Clean Energy Research and Development Centre (JCERDC) is now developing next generation energy and building technologies. The most significant project in this is on solar energy, where a large team - 15 laboratories from each country - from both countries is trying to develop some very ambitious technologies.

The aim of the solar energy project is develop disruptive technologies in three areas: photovoltaics, solar thermal and integration. The photovoltaic part includes developing print-jet technology, organic polymer cells, and solar cells with silicon-like efficiency with nontoxic and abundant materials. In solar thermal, which generates electricity by focusing the sun's heat rather than light, scientists are developing new kinds of reflectors and coating materials. One of its aims is to increase the efficiency and decrease the amount of land, always a constraint for implementing large solar energy projects.

In biofuels, the clean energy centre is developing technology to utilise high-biomass plants like sorghum, bamboo and pearl millet, which grow easily in Indian conditions. These plants can withstand salt and dry periods. Bamboo is a special plant as it can absorb and sequester 30% more carbon dioxide than other forest plants. Current research on the so-called second-generation biofuels focuses on ethanol from cellulose.

India has started blending petrol with ethanol, whose share can rise up to 20% in four or five years. In green buildings, the aims are slightly different for the two countries.

Since India is yet to construct a large number of the buildings it needs in the next few decades, its focus is on producing new green buildings. Since the US already has a large base of buildings, it focuses substantially on retrofitting for reducing energy use.

In all projects, it is a case of mutual benefit. India has to offer something back to the US as well. In green buildings, much of the knowledge from India could be on methods of passive cooling, by not using air conditioning, as buildings in the US always use air-conditioning for cooling.

In solar energy, this could be domestic expertise in software technologies; modern solar energy systems use a high amount of software. In any case, if the project expands as it has in recent times, the energy sector of both countries could see some breakthrough in the next few years.

Project Roshni

More than 95% of administrative blocks in districts worst hit by left-wing extremism have no training institutes or higher education opportunities.

Roshni is part of National Rural Livelihoods Mission, Aajeevika. It was announced in June for the worst affected among the 82 Integrated Action Plan districts as a placement-linked training scheme. This comes in the backdrop of escalating conflict in Naxal districts and is part of the Centre's 'development' strategy in these areas. The 27 districts have been picked from Andhra Pradesh, Bihar, Chhattisgarh, Jharkhand, Madhya Pradesh, Maharashtra, Orissa, Uttar Pradesh and West Bengal.

The scheme will focus on empowering women. The ministry has emphasised "career progression" rather than "training" under the scheme. In the next three years, the Centre plans to train and place over 50,000 youths (18-35y old) under Roshni at a cost of Rs 100 crore. The fund would be shared on a 75:25 ratio between the Centre and the state.

The scheme will be implemented through training partners from the private and public sectors as well as non-profit organisations. The scheme will provide training for youth from identified districts for employment in the organized sector. In particular it provides for training programs over different time periods. Currently these are for 3, 6, 9 and 12 months. In the 12 month format besides the normal, skill, IT and soft skill training, trainees are also provided National Institute of Open Schooling (NIOS) certification depending on the standard at which they dropped out of the formal school structure.

The training providers will ensure 75 per cent placement defined as continuous employment for three months at higher than minimum wages. It basically means that 75% will be placed in the organised sector.

Work is underway to build 1,500 new industrial training institutes (ITIs) and 5,000 skill development centres (SDC) across the country using the public-private partnership model, but this does not include Naxal-hit areas, as the private sector is reluctant to venture there.
To remedy this, the new plan wants to set up at least one ITI and three SDCs in every block of these 34 districts. That translates to 228 ITIs and 927 SDCs, and until they come up over the next couple of years, the Centre will sponsor school dropouts and unemployed youth in these districts to train at existing institutes outside.

Panel to boost MSMEs exports

According to the ministry of MSME, several product groups exported by MSMEs reported declines in 2012-13 - gems and jewellery (by 3.5 per cent), electronics (9.27 per cent), ready-made garments (5.76 per cent) and engineering goods (3.1 per cent).

An inter-ministerial committee set up to suggest ways to boost exports of India's micro, small, and medium enterprise (MSME) sector has recommended more credit for the sector at competitive rates, extension of foreign currency credit and marketing support. It was headed by the Finance Secretary R S Gujral.

The committee also recommended an increase in capital investment limits for the purpose of defining MSMEs, and leveraging of defence offsets to support MSME exports.

Availability and cost of credit at internationally competitive rates is a major issue facing Indian MSMEs, the report noted, with interest rates of 14-16 per cent, limited access to equity capital, and banks insisting on collateral requirements. The committee has recommended an additional interest subvention of two per cent for exporters who repay on a timely basis; reduction of the spread of foreign currency credit to London Interbank Offered Rate (Libor) + 2 per cent; and automatic increase in foreign currency limits due to the depreciation of the rupee through setting credit limits in US dollars wherever possible. It also said export credit must comprise at least 40 per cent of overall bank credit to MSMEs, and banks must increase the number of their MSME borrowers by 10 per cent annually until 2017.

Marketing is one of the critical areas where MSMEs face problems, the report said, adding that there are also challenges in product differentiation, brand-building, customised services, clientele-building and after-sales servicing. Many entrepreneurs are not entering the field of exports due to lack of market knowledge, availability of a growing domestic market and the complexities of international trade. The committee also recommended a larger budget for market development assistance and market access initiative schemes, greater focus on brand-building and trade fairs, income tax deduction for marketing expenses, support for e-commerce and a focus on Asia.

Modifications in labour laws to facilitate more overtime hours and employment of women in night shifts with necessary safety, enhancement of technology upgradation schemes with both capital subsidy and interest subvention; setting up of research/resource/product development centres and linkages with the technical institutions and CSIR laboratories have also been recommended.

The committee has recommended setting up round-the-clock facilities for export consignments at major air cargo and sea port complexes, enhancement of the ASIDE (Assistance to States for Development of Export Infrastructure & Allied Activities) scheme and development of MSME clusters near highways and rail corridors.

The committee has said a differential corporate tax regime for MSME exporters, separate ECGC policy for MSMEs to reduce costs, and removal of service tax on conversion of export proceeds remittances will reduce transaction costs in exports.

The constitution of a standing committee of secretaries to resolve policy- and implementation-related issues and greater coordination at the ground level between customs and DGFT offices has also been recommended.

The committee recommended a cess of 0.1 per cent on the production of chemicals and plastics, to create a technology upgradation fund for the two sectors; additional budgetary support for the handicrafts sector; enhanced support for the Integrated Leather Development Scheme; amendment of APMC Acts to enable direct purchase of horticulture/vegetable items from farmers by exporters; and greater infrastructure support (testing, labs, packaging houses) for processed agriculture exports.

The committee said tax-related incentives were necessary in view of the imperative need to boost exports and reduce the current account deficit, but could be extended for only five years in order not to increase budgetary expenditures or reduce tax revenue.

The government, meanwhile, has hiked the interest subsidy to 3 per cent from 2 per cent - still a percentage point lower than the panel's suggestion - to encourage exports.

Bhutan PM's visit to India

Bhutan has assured India that the security of the two countries is entwined and during its Prime Minister Tshering Tobgay's first overseas visit after wining the elections, reiterated Thimphu's desire to continue with the cooperation, as in the past, on matters relating to core national interests. Continuing with the pattern of high level exchanges, President Pranab Mukherjee will visit Bhutan in October.

Bhutan's assurance about commonality in security interests comes against the backdrop of the previous government's dalliance with the Chinese, which did not go down well in the Indian strategic community. India's withholding of subsidy on gas and subsidy to Bhutan on the eve of its second round of general elections was seen as an attempt to undermine the electoral prospects of the Druk Phuensum Tshogpa (DPT), which was in power at that time. The voting pattern in the two rounds of polling showed there was no sharp fall in votes gathered by the DPT in the second round. This proved the decision had no impact on the then ruling party's electoral fortunes. Rather, the index of opposition unity had approved in the second round and this increased votes polled by Mr. Tobgay's party, claimed the MEA.

India announced an aid of Rs. 5,000 crore to help the neighbouring state for its social and economic development. The aid also included funds for the Bhutanese Eleventh Plan (Rs. 4,500 crores) and a special package of Rs. 500 crore.

Ties between the Indian and Bhutan armies are crucial. There is Chinese activity in the Chumbi Valley region and the country has laid stake on the Doklam Platuea in Bhutan. The plateau practically overlooks the 'chicken-neck' corridor that connects India's northeast to the remaining part of the country. If China were to go ahead unhindered, the People's Liberation Army could be patrolling the northern boundary of the Siliguri or 'chicken-neck' corridor. This would jeopardize India's military movement in that area.

China and Bhutan have agreed to hold a joint technical field survey of the Tibetan region where the borders of China, Bhutan and India meet. China has made an offer of giving Bhutan 485 square km to Bhutan in return for a 269 square km from it. Though such proposals are part of any winding boundary talks, and take a long while to get into the final shape, this particular offer is of strategic consequence to India. This would make the buffer zone between the Siliguri corridor and the Sino-Indian border in Chumbi valley area much too narrow for Delhi's comfort.

Both sides have planned to evacuate 10,000 mw of electricity from Bhutan's four major river systems — Torsa, Wangchu, Sankosh and Manas — but have been struggling with seven projects after a smooth start to three projects, the last one over six years back. Another sore point has been the no forward movement on the revised funding pattern for several hydel projects due to shortage of funds. One of the largest projects on the drawing board — Punatsangchhu Stage-I (1,200 MW) — is facing fund constraints as the cost has jumped to nearly Rs. 10,000 crores from Rs. 3,515 crores. Four projects — Kholongchhu, Wangchu, Bhunakha and Chamkharchhu — would have a revised equity holding format in which the market forces would play a greater role. On the other hand, the earlier projects came up on the easier grant-cum-debt model.

Regional parties in India

Since 1984 not a single national party has formed government on its own. The 1980s and '90s witnessed the electoral boom of regional political parties. Regional parties have been expanding both in number as well as in vote share.

In fact, the number of national parties has come down. In the first Lok Sabha election in 1952, of the 55 parties that contested 18 were regional parties. The number went up to 36 in the 2004 election. In the 1984 general election the regional parties got 11.2 per cent of the votes; in 2009, their share went up to 28.4 per cent. In the past 20 years the share of regional parties in total votes has consistently increased. For the next elections in 2014, analysts estimate regional parties will contest in 150-180 seats where the two national parties may not be significant players. This, according to political pundits, is because the national parties have not been able to address regional "aspirations".

The rise of regional parties was sharp in the late 1980s and '90s when the country saw acute polarisation of voters in terms of socio-economic groups. During this period voters from the disadvantaged sections took greater part in voting. Many regional parties used this to carve out their political identity. They promised development and social and economic equity in face of economic liberalisation. Regional disparity was stark and livelihood crisis was severe at that point of time. So regional parties did emerge using developmental aspirations of millions of people.

More recently, regional parties have flagged off the issue of federalism prominently in the face of an overarching Central government. Political analysts call their emergence democratisation of politics, where the focus shifted from national parties to local ones, allowing local issues to be reflected in national agenda. This also created many regional leaders for the country that had got used to a couple of top leaders from national parties leading and giving identity to the country.

However, the change in political landscape notwithstanding, the regional parties don't have much to show in terms of redefining developmental policies that reflect regional aspirations. Whether it is relatively developed Tamil Nadu that elects regional parties for a long period or Odisha, India's poorest state with a regional party in power for more than a decade, they do not have different economic policies to boast. Rather, there is a rush to adopt economic liberalisation,-a national economic policy initiated by the Congress and supported by the other national party, the BJP.

However, India's long experiment with regional parties offers little evidence to suggest that regional parties performed differently than national parties. They may have fuelled regional

pride but in terms of regional development their performance hardly differed from that of national parties. Rather, regional parties now adopt and implement policies of national parties more aggressively at the state level.

The India TV-Times Now-C Voter survey showed the National Democratic Alliance (NDA) gaining a winning edge over the ruling United Progressive Alliance (UPA). Regional parties, it said, were expected to get as many as 240 of the 543 Lok Sabha seats in 2014. The survey projected 35 percent vote share for the NDA against 27 percent for the UPA and 38 percent for the regional parties. Regional parties will thus hold the key to government formation in New Delhi.

Marriage Laws (Amendment) Bill, 2013

It was passed by the RS recently. As per the statement of objects and reasons of the bill, Hindu Marriage Act and the Special Marriage Act have proved to be inadequate to deal with the issue where there has been irretrievable breakdown of marriage and therefore the need was felt for the amendments. Supreme Court too had pointed out the necessity to introduce irretrievable breakdown of marriage and mutual consent as grounds for grant of divorce in all cases.

Though the Marriage Laws (Amendment) Bill, 2010, passed by the Rajya Sabha last week, granting some women a limited right in their husband's property, is a step in the right direction, it falls short of expectations. The right has been extended only to Hindu women and those who marry under the Special Marriage Act and whose husbands have filed for divorce on the ground of marriage breakdown. What was needed was a separate statute (like the Protection of Women from Domestic Violence Act) to protect the economic rights of all married women and not just of a privileged few, and that too through convoluted clauses. The Marriage Laws (Amendment) Bill is aimed at addressing two different concerns — making divorce easy and protecting the economic rights of women.

The Bill allows both parties to file for divorce on the ground of "irretrievable breakdown" of marriage. Both parties have to live apart for at least three years before filing for such a petition.

Provisions have been made to restrict grant of a decree of divorce on ground of "irretrievable breakdown" of marriage if the court is satisfied that adequate provision for maintenance of children has not been made consistently with financial capacity of the parties to the marriage. Also, the wife has the right to oppose the grant of a divorce on the ground that the dissolution could result in grave financial hardship. The Bill also provides that a court can take an ex parte decision on granting divorce if one of the two parties refuse to move a joint application. It is "a historic piece of legislation" in a patriarchal society like India where women, who constitute 50 per cent of the population, own only two per cent of the assets.

Shale Exploration Policy

Shale gas is a natural gas present in the shale rocks under the ground. India has an estimated 63 trillion cubic feet (tcf) of recoverable shale gas reserves, equivalent to about 26 years of the country's gas demand, according to the US Energy Information Administration.

China is estimated to have the world's largest shale gas reserves. A study by the Baker Institute of Public Policy at Rice University concluded that increased shale gas production in

the US and Canada could help prevent Russia and Persian Gulf countries from dictating higher prices for the gas they export to European countries.

The Union Ministry of Petroleum and Natural Gas has identified six basins as potentially shale gas-bearing. These are Cambay in Gujarat, Assam-Arakan in the Northeast, Gondwana in central India, Krishna-Godavari in Andhra Pradesh, Cauvery in southern India and the Indo-Gangetic plains.

Earlier, the oil ministry had said all existing operators could be permitted to explore shale resources, along with conventional oil and gas. But later the government decided to have a separate policy later to deal with exploration of shale resources in blocks awarded to private firms for conventional oil and gas and coal bed methane after the department of economic affairs questioned extending oil and gas contracts of private companies' to also exploit shale recourses, without giving equal opportunities to new entrants.

The policy bars exploration of shale oil and gas in 254 blocks, awarded to several public and private sector energy firms in nine rounds under the new exploration licensing policy (Nelp) regime in last 15 years. Even pre-Nelp blocks such as Cairn-operated Rajasthan oilfields and coal bed methane (CBM) blocks are kept out of its preview. The government's policy initially permits state-run Oil and Natural Gas Corp (ONGC) and Oil India Ltd (OIL) to explore shale resources from onland blocks that were allotted to them on a nomination basis before the advent of the New Exploration Licensing Policy in 1999 - under which exploration blocks are offered on a bidding basis. In the second phase, the government will offer shale oil and gas blocks to other companies through another Cabinet approval that is likely in next few weeks.
Industry-friendly regulations, a favourable pricing regime, a developed onshore oilfield services (OFS) sector, an extensive gas distribution network and market-driven gas pricing are needed to make shale gas a success in India, states a report, Shale gas-global exploration and key learning by Ernst and Young.

The ministry of environment and forest had said exploitation of shale resources could lead to water crisis in India. "Each well would require 3-4 million gallons of water. Although the note does not specifically say so, as per the US experience in shale gas exploration and exploitation, the water used for fracking is fresh water," it said.

The ministry of environment had also raised concerns related to availability of water, safety of aquifers and ensuring regulatory framework for environmental safety, officials said.
The process of extracting shale gas has many possible environmental and geophysical types of fallout, which has led to several protests against exploitation of this resource.

ONGC plans to start drilling for shale gas in Gujarat during October 2013 and expects commercial production by 2014. The chairman said the company is getting technological support from ConocoPhillips as it drills its first shale gas well in the Cambay basin in Gujarat.

Healthcare in India

Low on cost, high on quality of care and with a wide range of treatments available — the Indian healthcare system draws over 1.3 million patients from abroad each year. The sector is expected to generate $3 billion by the end of 2013. In Harvard Business Review's November issue, a study by authors Vijay Govindarajan and Ravi Ramamurti gave private hospitals in India a thumbs-up for "delivering world-class health care, affordably".

Yet, 99% of India's population cannot afford these services, shows World Bank data. Each year, 39 million people are pushed into poverty by out-of-pocket payments for healthcare, with households on average devoting 5.8% of their expenditures to medical care, the data reveals.

Under NRHM, more than Rs. 96,000 crores have been released to the 35 State Governments and UTs. Nearly 50,000 New Health Infrastructure has been created, including new construction and up-gradation works to improve health facilities. Nearly 70,000 beds have been increased in government health institutions for provision of essential and emergency services across the country. Addition of nearly 1.6 lakh human resources such as Specialists, Doctors, Nurses, ANMs and Para-medics has been made. Over 8 lakh 60 thousand Community Health Workers called ASHAs have been appointed in villages to facilitate interface between the communities and health system. The "Rashtriya Bal Swasthya Karyakram" was launched on 6th February, 2013 from a tribal block of Thane District in Maharashtra by Smt. Sonia Gandhi, Chairperson, UPA. This national programme is for Universal Screening of Children for Disorders, Diseases, Deficiencies and Disabilities from birth up to 18 years. The programme will cover 27 crore children across the country, including 17 crore school going children.

The availability of MBBS seats has gone up from 33,567 to 51,979 now. The number of PG seats has increased from 13,838 to 23,931. 97 new medical colleges including six new AIIMS, have been established within the same period raising the number of Medical Colleges from 290 to 387. To further strengthen tertiary Healthcare delivery in the government sector, the Health Ministry took up 19 state governments owned medical colleges for up-gradation under the Pradhan Mantri Swasthya Suraksha Yojana in different parts of the country. To overcome the shortage of Nurses and ANMs, his Ministry has approved 269 nursing schools in the last two years, mostly in remote, inaccessible and under-served districts. With an estimated outlay of Rs. 2,030 crores, these institutions will give approximately additional 20,000 nurses annually. In order to boost the para-medical education and scale up the availability of para-medics, the Health Ministry has sanctioned a National Institute of Paramedical Sciences (NIPS) at Delhi and 8 Regional Institutes of Paramedical Sciences (RIPS). A total of 10,760 paramedic professionals are expected to be trained annually when these institutes of excellence are fully functional.

Various Departments of the Health Ministry are conducting numerous trainings for skill development and improvement in the form of short and long term specialized trainings. For instance, the Indian Council of Medical Research (ICMR) provides training to doctors, medical teachers, bio-medical scientists and other categories of workers involved in National Health Programmes. These include newer methods of diagnostics and management for medical doctors, laboratory technicians and other healthcare workers working in National Programmes like Tuberculosis, Leprosy and different Vector borne diseases like Malaria, Blood Disorders and Reproductive Health. The National Centre for Diseases Control (NCDC) also conducts various Skills based Training and Orientation programmes.

The constitution of Healthcare Sector Skill Council by the National Skills Development Corporation and CII as an apex body will develop standards for allied healthcare. It will also actively participate in the development of curriculum, assessment and certification process. The Council has responded to the needs of the community by choosing Community Related Job-roles such as Diabetic Educator and Front-line Health Workers on priority basis. The

work of the Healthcare Sector Skill Council will be useful in developing better Training Modules to impart requisite skills among those working in the Allied Health sector.

The Indian healthcare sector will need a total capital investment of Rs 1,62,500 crore to provide accessible and affordable healthcare during the 12th Plan period. The Indian healthcare sector will need a total capital investment of Rs 1,62,500 crore to provide accessible and affordable healthcare during the 12th Plan period. Elaborating on the requirements, the report said based on the publicly announced government plans approximately 1,30,000 beds will be put up in the government or the public sector. "This will necessitate the addition of nearly 5,20,000 beds by the private healthcare providers implying a capital investment of around Rs 1,30,000 crore over the next four years," it added.

The first step in this direction can be by creating healthcare infrastructure by the government through the establishment of a healthcare infrastructure.fund (HIF) with an initial corpus of 15,000 crore, the report said. Another step can be allowing business trusts and real estate investment trusts (REITS) in healthcare, it added. Establishment of a nodal agency for healthcare to spur the growth of the sector and creation of healthcare infrastructure was another important step for increasing the access, it suggested.

On the cost to patients, the report said a transparent and viable pricing formula for reimbursement is another key factor, while suggesting establishment of a central government Health Scheme (CGHS) pricing formula similar to the one used for the power sector.
Scaling up public-private partnerships (PPPs) in the creation of healthcare infrastructure and enhancing financial access through Universal Health Coverage for every citizen will be other important factors as per the report.

Foreign universities in India

The HRD ministry's most reform legislation, including the Foreign Education Providers Bill, has remained stuck in Parliament for nearly three years now. With legislative approval unlikely, the ministry has, since late last year, been working on routing the proposal to allow foreign universities in India through UGC regulations. As per the powers vested with the central government to make rules under the UGC AcT, the ministry is in the process of finalizing the UGC (Established and Operation of Campuses of Foreign Educational Institutions) Rules by which foreign universities can set up campus in India and issue foreign degrees.

The government has decided to allow foreign universities to operate independently in India, set up campuses and offer degrees without having a local partner—a move that finally opens the gates for foreign educational institutions seeking to establish a presence in the country. To foreign universities, the move presents an opportunity to tap a country with a population of 1.2 billion. To Indians (at least those who can afford it), it is an opportunity to receive quality education without leaving India (and without paying in dollars). And to India, it could mean significant foreign direct investment.

The top 400 universities on Times Higher Education, Quacquarelli Symonds (QS) or the Academic Ranking of World Universities (ARWU) by Shanghai Jiao Tong University will be eligible to set up campuses in India once they are notified as Foreign Education Providers (FEPs) by the University Grants Commission.

The institutions must be not-for-profit legal entities that have been in existence for at least 20 years, and accredited by an agency of that country, or by an internationally accepted system of accreditation. To be notified as an FEP, the institution must maintain a corpus of at least Rs 25 crore. The FEPs must offer programmes of quality comparable to those at their main campuses. Any FEP that violates rules would be liable to be fined between Rs 50 lakh and to Rs 1 crore, and the forfeiture of the corpus fund. Degrees awarded by the FEPs would be treated as foreign degrees, and would be subject to the equivalence accorded by the Association of Indian Universities (AIU) as per their system, say the rules.

For now, many foreign universities have a presence in India either via partnerships with local universities or companies, or through local representative offices meant to promote their universities to Indian students.

Several foreign universities have been keen to enter India to tap a higher educational market that is worth Rs.46,200 crore and expanding by 18% every year, according to *40 million by 2020*, a report from audit and consulting firm EY.

Challenges

For one thing, many universities are wary of having to abide with the layers of bureaucracy and rules associated with doing business in India, which is both costly and bothersome.

The government order sets a caveat - foreign universities will have to operate as 'Section 25' companies or a not-for-profit entities, and will not be allowed to repatriate their earnings. Also, they need to deposit Rs 25 crore with the HRD ministry which they could forfeit in case of any violation of rules. Many argue the incentive for foreign universities to set up establishments in India would have to be more than just the love of educating Indians.

Many top U.S. universities would prefer to be connected to India through cheaper or less complicated means, such as a tie-up with a local university. The University of Chicago, for instance, is considering the possibility of setting up a center for research in India but has no plans for a degree-awarding campus, according to a spokeswoman for that university.

Reforms triggered by Delhi gangrape

REFORMS

6 fast-track courts set up in trial courts to exclusively deal with cases related to sexual offences against women. A judicial committee headed by JS Verma, a former Chief Justice of India, appointed by the central government to suggest amendments to criminal law to sternly deal with sexual assault cases of the society and age groups, reach India Gate, holding placards and raising slogans, and demand action. A one-person commission of inquiry headed by a former Delhi high court judge, Usha Mehra, set up to identify lapses and determine responsibility in relation to the Dec 16 incident Criminal Law (Amendment) Bill comes into effect, bringing in changes in IPC, Indian Evidence Act and CrPC and laws related to sexual offences; Provides punishment for acid attacks, voyeurism and stalking Rape becomes punishable with death in certain cases Sexual Harassment of Women at Workplace (Prevention, Prohibition and Redressal) Bill comes into effect Sensitization of Delhi Police in dealing with survivors of rape cases

Other impacts of the incident

1. Awareness — inside and outside India. After this rape and the many other stories that followed, the world, and the media, were horrified that these tragic events seemed commonplace in the country that was once dubbed as one of the world's greatest emerging

markets and democracy. When India was discussed, people conveyed severe caution, and friends, family members, and strangers proclaimed fears of visiting the country.

The thing is, violence toward women isn't a new trend in India. For years, women have faced harassment, heckling, and assaults. Factors like a lopsided men-women ratio (more men than women, especially in cities, due to factors like infanticide) and women becoming more career-oriented have propelled this problem, but it's nothing new. What has changed is an open discussion of the treatment of women, and a public shame over rape. It took media attention, and mass protests for the country to realize how bad of a problem it was, and that it could no longer be tolerated.

2. The power of the people. The reaction to the Delhi gang rape was India's "Arab Spring." People banded together– students, housewives, men, women, all stood together and loudly voiced their disdain. Mass demonstrations to this extent, with the world watching, aren't new to India. (Hi, Gandhi!) But a protest with virtually every person from every segment of society joining? That was new. And it seems the momentum has continued — from continued protests against gender inequality to the anti-corruption movement, the people of India have found their voice.

3. Change can happen. As a direct result to the mass protests, the government changed its age-old definition of rape and passed strict anti-rape laws. These reforms probably came as a surprise for many Indians, where the government is viewed as corrupt, and real change doesn't seem feasible.

4. The government isn't always to blame. It's usually a default reaction to blame the government for any mishaps in India (and usually, they're right). But the heckling of women riding the bus or walking the street isn't completely the government's fault.
Of course, the government is far from clean on this matter. Officials should and are being held accountable. But so should the society as a whole. A popular poster during the demonstrations read "Don't tell your daughter not to go out, tell your son to behave properly." The conversation is changing, and silent factions of society have found their voice.

5. Fall in productivity: ITeS-BPO companies have registered a significant decline in work productivity during the last fortnight as one in three female workers have either reduced working hours after sunset or quit jobs after the Delhi bus rape incident, says a quick random survey undertaken by Assocham Social Development Foundation (ASDF). In Delhi-NCR alone, BPO-ITeS have been affected to the extent of 40 per cent.

6. More equality at home that has come since December 16 starts at homes across India. It comes from fathers and mothers who are learning to treat their children equally, who are realizing the adverse effects of educating a son over a daughter. It comes from teaching sons that women deserve respect. Never before has there been a universal outcry to stop catcalls of women walking down the street, and to stop the slaughter of baby girls. Earlier this year, infanticide was called an "unspoken evil." Slowly, society is forcing itself to talk about it.

Coal bed methane policy in India

Oil minister Veerappa Moily has rejected a draft note for the Cabinet proposing exploration of coal-bed methane (CBM) rights to state-run Coal India without auction and directed bureaucrats to re-draft it to encourage competition and efficiency. Moily rejected the proposal saying Coal India should not get automatic rights of over CBM exploration only because

most of coal blocks are held by the public sector firm, which is the single largest coal producing company in the world.

World Intellectual Property Organization Marrakesh Treaty to Facilitate Access to Published Works for Persons Who Are Blind, Visually Impaired or Otherwise Print Disabled

On the final day of the World Intellectual Property Organization diplomatic conference, held from 17-28 June, fifty-one countries signed the treaty. A large number of developing countries, notably from Africa and Latin America, signed the treaty. A few developed countries signed the treaty, such as Switzerland and the United Kingdom.

India, on behalf of the Asian Group, remarked that the title of the treaty had changed and asked when this was discussed in main Committee 1. Khalfi said the issue had been examined in the Steering Committee, that after consultations in regional groups it appeared that the title should reflect the content and goals of the treaty. The title was amended, he said, in order to facilitate the ratification of the treaty, facilitate the communication regarding the treaty, and in order to gain support for it.

The Indian delegate said as Asian Group coordinator that she was not consulted on the issue, but India had no intention of breaking the consensus and would accept the new title if everyone else agreed with it. She also proposed that the word "improve" in the title be replaced by "facilitate," which was agreed to by Egypt and the United States. The treaty was thus adopted to much cheering.

Twenty ratifications are necessary for the entry into force of the treaty.

Contracting member states will need to introduce provisions in their national laws that exempt the non-commercial copying – including online – of books into formats accessible to people with visual disabilities. The treaty will also permit such copies to be shared across international borders.

WIPO director general Francis Gurry has already said a treaty would "alleviate the book famine that causes over 300 million visually impaired persons, the majority of them in developing countries, to be excluded from access to over 90 percent of published works".
There are an estimated 314 million blind and visually impaired people in the world, 90 percent of whom live in developing countries. According to the WBU, of the million or so books published each year, less than 5 percent are made available in formats available to the visually impaired.

The draft treaty says it recognises the need to maintain a balance between the "larger public interest" – particularly education, research and access to information – and copyright protection. The treaty does allow countries to restrict copyright exemptions to books that are not commercially available, therefore potentially protecting publishers' markets.

Tougher norms for private universities recommended

An expert committee chaired by P N Tandon and co-chaired by M Anandakrishnan to revisit the UGC (Establishment of and Maintenance of Standards in Private Universities) Regulations, 2003 has recommended to legally vest all their movable and immovable properties in the name of the university; utilise their incomes and property only for their

growth and development and maintain accounts in the name of the university (not in the name of the sponsoring body/trust) by following standards set by the Institute of Chartered Accountants of India and the ministry of human resource development. Other rules being incorporated include conditions for establishing private universities, infrastructure, academic departments and faculty, maintenance of standards and accreditation from National Assessment and Accreditation Council and the National Board of Accreditation.

Currently, India has about 150 private universities across 20 states. The committee formed to revisit the UGC (Establishment of and Maintenance of Standards in Private Universities) Regulations, 2003, has only two state representatives.

Private entities, however, say they weren't consulted before the regulations were framed. Private universities say according to the UGC Act, 1956, the commission can only govern and regulate universities receiving aid from the UGC; private/unaided universities are out of its domain.

Private education entities said as the Higher Education and Research Bill, 2011, which sought to subsume the UGC and the All India Council for Technical Education was already in the final stages of being passed. The issues being included in the new regulations were already covered under that Bill. As such, framing these regulations to include additional matters of universities under the control of UGC could be considered a covert attempt to undermine the supremacy of Parliament.

India-Bangladesh power trade

In Bherama, a remote Bangladeshi village bordering Murshidabad district of West Bengal, Bangladesh Prime Minister Sheikh Hasina will inaugurate electricity trade between the two countries. NTPC will start exporting 250 MW of electricity to Bangladesh, at a fixed tariff. Bangladesh has the option to buy another 250 MW from the open electricity market in India. Early last year, NTPC Vidyut Vyapar Nigam Ltd, the trading arm of power producer NTPC, and Bangladesh Power Development Board (BPDB) had inked an electricity purchase pact. The transmission line would link India's eastern power grid with the western electricity grid of Bangladesh.

For Bangladesh, this help comes at a critical time when power outages are resulting in a loss of annual industrial output worth $1 billion. The move will also be a boon to Indian power generation companies, including NTPC, that are suffering from excess capacities and low demand load.

The interconnection on the Bangladesh side comprises 500 MW High Voltage Direct Current (HVDC) substation at Bheramara, about 27 kilometers in 400 kilovolt transmission lines from Bheramara to the Indian border and a link to the Bangladesh electricity grid.

ADB helped finance the USD 199 million interconnection facilities in Bangladesh with a USD 112 million loan. State-owned transmission utility Power Grid Corp built and financed the infrastructure on the Indian side.

The cooperation will not stop at power trade. NTPC Ltd and Bangladesh Power Development Board will enter into a joint venture agreement for Bangladesh India Friendship Power Company Private Ltd for setting up a 1,320 MW Maitri Thermal Power Project at Bheramara.

National Vocational Education Qualifications Framework (NVEQF)

The NVEQF would set common principles and guidelines for a nationally recognized qualification system, covering schools, vocational education institutes and institutes of higher education with qualifications ranging from secondary to doctorate level, leading to international recognition of national standards. Students would have the scope for vertical and horizontal mobility with multiple entry and exits. This would be especially useful to promote the creative genius of every child including children with special needs. The corner stone of the NVEQF would be the close partnership and collaboration with the industry/ potential employers at all stages starting from identification of courses, content development, training and provision of resource persons, assessment, accreditation, certification and placement. The Scheme envisages Seven certificate levels with each certificate level with approximately 1000 hours each certificate, with each 1000 hours being made of certain number of hours for vocational competency based skill modules and the rest for general learning simultaneously integrated and providing a Diploma for vocational education after the certificate level five or leading to a Degree for vocational education after level seven in the university system, subject to their statutory approval, is highlight of the scheme.

A student can choose to avail of competency based skill learning along with general education in this scheme without losing the possibility of changing course and moving at any certificate level into a formal system of education and vice versa. This would ultimately provide a full multi-entry exist system between vocational education, general education and the job market.

NVEQF is a descriptive framework that organizes qualifications according to a series of levels of knowledge along with skills. These levels are defined in terms of learning outcomes i.e., the competencies which the learners must possess regardless of whether they were acquired through formal, non-formal or informal education and training. Qualifications are made up of occupational standards for specific areas of learning units. This would provide the stakeholders such as the learners, education and skill training providers and employers to gain information about the broad equivalence of qualifications across specific skill sectors. It is, therefore, a nationally integrated education and competency based skill framework that will provide for multiple pathways both within vocational education and between general and vocational education to link one level of learning to another higher level and enable learners to progress to higher levels from any starting point in the education and/or skill system. The key elements of the NVEQF are to provide

a) national principles for providing Vocational Education (VE) leading to international equivalency,
b) multiple entry and exit between VE, general education and job markets,
c) progression within VE,
d) transfer between VE and general education, and
e) partnership with industry/employers

The National Vocational Education Qualifications Framework (NVEQF) would be assimilated into the National Skills Qualification Framework , once that framework is notified for the country.

This is expected to cater to at least 5 million students for vocational degree and diploma every year, which can provide self-employment or being meaningfully employed if even 1/3 of the institutions are approved to conduct these programmes.

Salient features:

- The scheme addresses lack of uniformity in qualifications across institutions and no formal recognition of informal (prior) learning
- Helps students exit education system and enter job market as and when they desire. They can come back to education later
- Scheme to have seven certificate levels with each certificate level having approximately 1,000 hours each
- Each 1,000 hours to be made of certain number of hours for vocational competency-based skill modules
- Rest will be for general learning simultaneously integrated and providing a diploma for vocational education after the certificate level five or leading to a degree for vocational education after level seven in the university system (subject to their statutory approval)
- Colleges can become community colleges to offer courses under NVEQF
- Sector skill councils to set the occupational standards
- AICTE partners with American Association of Community Colleges for collaborating with community colleges in the US

Nipah virus

Nipah virus (NiV) infection is a newly emerging zoonosis that causes severe disease in both animals and humans. The natural host of the virus are fruit bats of the Pteropodidae Family, Pteropus genus.

NiV was first identified during an outbreak of disease that took place in Kampung Sungai Nipah, Malaysia in 1998. On this occasion, pigs were the intermediate hosts. However, in subsequent NiV outbreaks, there were no intermediate hosts. In Bangladesh in 2004, humans became infected with NiV as a result of consuming date palm sap that had been contaminated by infected fruit bats. Human-to-human transmission has also been documented, including in a hospital setting in India.

NiV infection in humans has a range of clinical presentations, from asymptomatic infection to acute respiratory syndrome and fatal encephalitis. NiV is also capable of causing disease in pigs and other domestic animals. There is no vaccine for either humans or animals. The primary treatment for human cases is intensive supportive care.

This disease has caused a few deaths this year in Bangladesh, and the risk of its cross-border transmission is high. It is essential for India to realise this threat and set up surveillance accordingly.

Benefits of being a part of global value chains (GBVs)

Analysis of trade in value added (TiVA), a statistical estimation of value added in producing goods and services, indicates that between 1995 and 2009 the domestic content in share of exports decreased in most G20 economies, though the extent varies due to factors such as the size of the country, economic structure, and composition of export basket.

The share of services in export-value added has been increasing, including of manufactured goods. Average services content of exports for G20 economies has increased to 42% in 2009, and is about 50% for US, UK, India, and EU as a whole. Value created by services as intermediate inputs is over 30% of the total value added in manufactured goods.

The income derived from foreign final demand (or exports of value added) has increased by 106% between 1995 and 2009, with a key redistribution towards emerging economies. Their share in world exports of value added has increased from 21% in 1995 to 34% in 2009. In China, it has multiplied by 6, in India by 5, and in Brazil by about 3.

The income derived from foreign final demand (or exports of value added) has increased by 106% between 1995 and 2009, with a key redistribution towards emerging economies. Their share in world exports of value added has increased from 21% in 1995 to 34% in 2009. In China, it has multiplied by 6, in India by 5, and in Brazil by about 3.

What all this means is that in the long term, a trade-led growth strategy with increased participation in GVCs will help. Globally, value chains are more spread in electronics and electrical equipment sectors, transport equipment sector etc. Also, the share of imported inputs and intermediate goods in exports is higher in mining, textiles, machinery, and services sectors such as distribution, transport and telecom. We need to identify segments of these sectors with higher value addition as well as low entry barriers in global markets, to achieve quicker export success.

In the 'Global Competitiveness Report (GCR) 2013', on the global index of 'trade tariffs (tradeweighted average tariff rate)' India ranks 128, and on 'prevalence of trade barriers' (health and product standards, technical and labelling requirements etc), India ranks 61, among 148 countries. Thus, there is a need to improve in these areas.

GVC participation leads to job creation in developing countries, provided it occurs with increased and high-skill based value addition. So, to gain a part of GVCs, we need an education system based on skilldevelopment. As well as a competition policy enhancing rivalry, and a tax system and intellectual property laws encouraging investment.

India, Bangladesh "Motor Vehicles Agreement"

India and Bangladesh are set to sign a historic deal to allow cargo trucks from both sides to ply within each other's territories. This will be for the first time India enters such an agreement with any of its neighbouring countries. The agreement, known as the 'Motor Vehicles Agreement', had been pending for quite some time. The ministry of commerce and industry had presented the draft proposal to Bangladesh earlier this year. While Dhaka is still "examining the proposal", the deal is expected to inked before India heads for elections next year.

At present, trucks from both sides are allowed to enter 150 km within each side of the border where they unload and pick up the cargo. However, under the proposed deal, trucks from Bangladesh will get permission to drive till their destinations where it will unload the cargo. Similarly, Indian trucks will be allowed to move inside Bangladesh to unload and pickup the items required. This will not only help reduce the heavy congestion on the border, but will also address the inadequate infrastructure problems that create hassles for exporters on both sides.

There is a possibility that Bangladesh might delay signing the deal as it is facing severe infrastructure problems and inking the deal will entail major infrastructure overhaul for which the country may not be ready at the moment.

Other recent developments in India Bhutan relationship

With relations between the two countries getting better and better, India too is looking at hitherto unexplored avenues, such as transporting foodgrain to the Northeast via Bangladesh. As of now, Food Corporation of India transports foodgrain from Punjab and Haryana for public distribution by rail. The route via Bangladesh's Ashuganj port would be a useful alternative.

During the prime minister's 2010 visit to Bangladesh, although the Teesta waters agreement could not be signed, he announced that all 46 textiles lines which are of interest to Bangladesh would be taken off India's negative list, thereby reducing the applicable duty rate to zero.

Some of the major items that India exports to Bangladesh are cotton, vegetables, automobiles, iron and steel, mineral fuels, cereal and organic chemicals. On the other hand, India imports from Bangladesh paper yarn and woven fabrics, fish, cement, copper and copper-related products, inorganic chemicals, raw hides and fertilisers.

Bangladesh is now India's largest trading partner in South Asia and twelfth largest in the world, with bilateral trade reaching $5.14 billion in 2012-13 from $3.78 billion in 2011-12 and $3.24 billion in 2010-2011.

India and Bangladesh have also vowed to undertake several initiatives in freeing up trade through the land ports. As a result, India has built a state-of-the-art modern integrated check-post at Agartala, which is expected to become operational by the end of the month or early November. It is also building another integrated check-post at the Petrapole border which will be launched by the middle of next year. Both sides are also jointly working towards opening up the sea-route and waterways for a cheaper way of sending goods and reducing congestion at the borders. The two sides are also contemplating reviving railway connectivity for transaction of goods.

Earlier this year, commerce and industry minister Anand Sharma met his Bangladesh counterpart Ghulam Muhammad Quader to grant multiple entry visas to reciprocate India's gesture to Bangladesh businessmen.

Ever since Bangladesh came into being in 1971, there has been a struggle over the land that borders India and Bangladesh. As a result, around 200 enclaves have developed, essentially islands within the boundaries of another country. The people of these areas struggle for identity and, due to a lack of citizenship, often find they have land but are stateless.

India is required to seek parliamentary ratification for a permanent solution to this problem. This is in the form of the Land Boundary Bill, which calls for India to exchange 111 of its enclaves in Bangladesh in return for 51 Bangladesh enclaves in India. Under the agreement, India would give up claims for just over 17,000 acres of land which will be transferred to Bangladesh. In turn, Bangladesh would cede around 7,000 acres, which would then join Indian territory. A land swap agreement would also give citizenship rights to close to 52,000 people: 37,000 on the Bangladesh side and close to 15,000 on the Indian side.

This deal could particularly benefit the Northeast and Assam. Resolving the land issues would enable borders in these areas to be secured. India would be able to talk officially about the issue of migrating Bangladeshis, a thorny problem for Assam for nearly three decades that will only grow.

SEBI (Foreign Portfolio Investors) Regulations, 2013

India's securities market regulator has eased entry rules for foreign portfolio investors (FPIs) in an attempt to attract more overseas money into the country. These rules have been framed after considering the provisions of the existing rules for foreign institutional investors, qualified foreign investors and also based on the recommendations of the KM Chandrasekhar committee. The capital markets regulator, in its latest regulations, has shortened the list of eligible FPIs, making it more difficult for the riskier categories to enter the country.

The regulator has simplified the investment process by delegating registrations to depository participants. Custodians of securities will now be required to carry out the necessary due diligence and obtain appropriate declarations and undertakings from overseas investors before registering them. Sebi has clubbed current foreign institutional investors, sub-accounts and qualified foreign investors into a new investor class called FPIs.

It has segregated FPIs into three categories: the first includes government-related entities like foreign central banks, sovereign wealth funds and multilateral organisations; the second relates to regulated broad-based funds such as university funds, endowments and pension funds among others; the third category covers charitable trusts, corporate bodies and individuals. Sebi said KYC requirements would be determined based on the risk profile of the investors. Sebi has proposed grant of registration to them within 10 days of application under the new Foreign Portfolio Investor (FPI) regime.

The registration process for government-related entities would be the simplest. It would be most stringent for charitable trusts and individuals.

SEBI has now ruled that all foreign investors (barring foreign individuals) registering as FPIs have to be incorporated entities that are regulated by their respective country's stock market, banking or any other relevant regulators.

This rule would make many foreign investors currently registered as 'sub-accounts' ineligible to register as FPIs.

Under the older rules, SEBI allowed even unregulated entities to register as sub-accounts – investors on whose behalf foreign institutional investors (FIIs) trade, but who were virtually treated on par with them.

The regulator has also corrected the anomaly that existed in FII regulations, under which the riskier category of investors (sub-accounts) had to submit to lax KYC (know-your-customer) rules while the relatively safer class — FIIs — had tighter compliance rules. The new rules also give the banks, which now have the onus of registering the new FPIs, the power to reject applications found unsuitable.

The effect of these changes is already being felt. The number of FIIs registered with SEBI was 1,753 on September 2, this year. This declined to 1,746 by October 25. Foreign investors registered as sub-accounts declined more sharply from 6,416 to 6,365 in this period.

Another data-set that points towards impending change is the participatory notes (PN) issuances. The outstanding amount of such notes, offshore derivative instruments issued by FIIs to overseas entities who wish to invest in Indian markets without registering themselves with SEBI, jumped to Rs 1,71,154 crore towards the end of September, a 10-month high. PNs are opaque instruments where the end-owners of the assets aren't easy to trace, making them a potential conduit for money launderers. In October 2007, SEBI clamped down on issue of PNs and at the same time made the norms for registering as sub-accounts easier; thus giving the users of PNs the invitation to register with SEBI and invest in Indian stocks directly.
But this could be just the beginning. The number of foreign investors investing into India through the sub-account route is expected to decline further even as inflows through PNs increase. While this move is expected to sanitise the foreign investor channel, there could be temporary pain as some investors choose to move out of India.

The overall flow of foreign portfolio flows might, however, not be all that greatly affected. There are enough authentic foreign investors who will be willing to invest into Indian equity. Inflow of around $15 billion in Indian stock market so far this year is a testimony to that.
Foreign investors have also received a blow with the notification of the General Anti Avoidance Rules this September. The rules come into force from FY 16. So all tax benefits earned from April 2015 from arrangements made with the intention of saving tax can come under the taxman's lens. The greater worry is that the rules have exempted only benefits earned prior to August 2010 from scrutiny. The rules have also retained the clause that tax residency certificates are necessary but not sufficient for claiming tax benefit under double tax treaties. These rules could be another reason why FIIs or sub-accounts might now want to shut down the current arrangement and look up alternate route to investing into Indian equity.

India-Israel relations

The governments of India and Israel have agreed on joint initiatives in investment, research and development (R&D), security and farming, among others.

The countries would jointly set up a research and development (R&D) fund and promote investments in security, cyber security, energy, water recycling and solid waste management, agriculture and post-harvest management. The size of the fund has not been decided.

Israel also proposes to increase the number of model farms from 20 to 100 across the country, helping farmers increase production. The countries also plan to increase investment flow in defence and homeland security, to tackle global terrorism.

India and Israel are working to finalise a free trade agreement and a free talent deal. The annual bilateral trade has increased to $6 billion from $180 million in 1992.

Malaria vaccine

Malaria kills 660,000 people a year, mostly children living in sub-Saharan Africa.

The latest trial result showed that over 18 months of follow-up, GSK's candidate malaria vaccine RTS,S reduced cases of clinical malaria by 46% in young children aged 5-17 months after first vaccination, compared with children immunized with a control vaccine. Babies aged 6-12 weeks after first vaccination had 27% fewer cases of clinical malaria.

Comparing the 28-month results with the trial's results at 12 months, shows that the vaccine's overall efficacy declines with time. At the 12-month point, the efficacy was 56% reduction in cases in the 5-17 month age group and 31% in the 6-12 week age group.

The vaccine is continuing to show an "an acceptable safety and tolerability profile" during the 18-month follow-up, says GSK.

RTS,S works by triggering the immune system to defend against the malaria parasite when it first enters the human bloodstream, or when it infects liver cells.

The result is the parasite stops infecting, maturing and multiplying in the liver, thus preventing the next stage where it leaves the liver and goes back into the bloodstream to infect red blood cells, causing disease.

In the Phase III trial, the vaccine has been delivered in three doses, 1 month apart.
Next year, the trial investigators expect to reveal more data from 32 months of follow-up, plus the impact of a fourth booster dose that is given 18 months after the initial three doses of RTS,S.

Another vaccine

The PfSPZ vaccine is unusual in that it does not use a handful of parasite proteins to provoke a immune response but live weakened forms of the whole, immature, "sporozoite" phase of the parasite.

The results showed that higher dosages of the intravenous vaccine were linked to protection against malaria. All six participants who received five doses remained free of malaria, while five of the six unvaccinated participants were infected, as were three of the nine who received only four doses of the vaccine.

Negatives of the 5/20 rule

The 5/20 rules mandates that a domestic airline must have been in operation for five years and have 20 aircraft before flying abroad. This need to scrap this rule is growing more urgent by the day - especially since a number of foreign start-ups, such as Air Arabia, Tiger Airways and AirAsia, have been allowed to fly into India. Since these airlines are outside the purview of these restrictions, they enjoy an unfair advantage over domestic airlines that are hobbled by them.

In January last year, a study commissioned by the ministry of corporate affairs unequivocally said the barriers to international operations were anti-competitive because they limited the number or range of suppliers and reduced their ability and incentive to compete. As the report pointed out, fleet size requirements incur a large start-up cost for domestic airlines and the policy also left domestic operators worse off at a time when foreign operators' services to and from India were steadily expanding. Most importantly, the report said, the policy "biases the market towards big airlines which already have economies of scale. Furthermore, this rule incentivises mergers". The report suggests that a better criterion to set would be financial viability - a sensible idea, as passengers stranded overseas when Kingfisher abruptly closed operations will testify. Global safety norms should be the other benchmark, and it is worth remembering that it is state-owned Air India, with extensive overseas operations, that has been lax in this regard, not domestic private airlines.

Seoul Framework for and Commitment to Open and Secure Cyberspace

The 'Seoul Framework' offers guidelines for governments and international organisations on coping with cybercrime and cyber war. It highlights the importance of boosting internet access, particularly for developing countries, for education, development and to ensure freedom of information and expression.

The annual conference on cyberspace aims to establish international cyber-norms and guidelines. The Seoul conference followed previous gatherings in London and Budapest. It will likely become a bi-annual event, with the next conference set for the Netherlands in 2015.

Seoul added a new agenda focused on capacity building in order to provide constructive advice to developing countries on ways to create a more vibrant Internet economy as well as to prevent and respond to a growing number of cyber threats that present a risk to the benefits of the digital revolution.

Internal migrants in India

Migrants are often given the toughest, most hazardous or socially-looked-down-on jobs: work on construction sites, clearing waste or working as lowly-paid domestic help or security guards. Yet, their contribution to the economy and growth is immense. Estimates of remittances sent back home range from Rs 70,000 crore to Rs 1,20,000 crore every year. A state like Bihar gets 10% of its state GDP from remittances sent by its large migrant labour force. Uttar Pradesh, India's biggest state and home to 200 million people and source of large-scale migration, could get as much as 4% of its GDP from its migrants.

In 2011, India had 400 million internal migrants, a full third of its population, according to an estimate cited in a recent UN report, Social Inclusion of Internal Migrants in India. This represents mobility for the sake of livelihood, often seasonal. Reports say that 70-80% of migrants are women — marriage transfers them from the father's home to the husband's — likely to face harsh conditions and exploitation at work. Mobility has its advantages —the promise of finding opportunities in a city as opposed to stagnating in the rural economy — but there are associated risks. The most important is the loss of identity without appropriate paperwork, which could lead to exclusion of social, medical and other state-given benefits. To resolve this problem, the government must roll out its Aadhaar scheme, which gives a biometrically established identity to all residents, faster. Armed with an Aadhaar identity, migrants would be free to go anywhere in India in search of better jobs and incomes. Once physical subsidies are replaced by direct cash transfers, in combination with Aadhaar, migrants would be entitled to their full entitlement anywhere in the country.

India, UNHRC and child marriage

India's refusal to co-sponsor a United Nations Human Rights Council (UNHRC) resolution recognising child, early and forced marriage as a human rights violation has put the spotlight once again on the prevalence in the country of this terrible social practice. India did support the UNHRC resolution which was unanimously adopted, but the country was shown in a poor light when it refused to join more than a 100 countries in co-sponsoring the resolution. For the first time in history, the United Nations Human Rights Council adopted a resolution dedicated to ending the blight of child marriage.

The historic proposal recognizes child marriage as a human rights violation and specifically calls for the elimination of child, early and forced marriage to be considered part of the development agenda after 2015. It recognizes child, early and forced marriage as involving violations of human rights which "prevents individuals form living their lives free from all forms of violence and that has adverse consequences on the enjoyment of human rights, such as the right to education, the right to the highest attainable standard of health including sexual and reproductive health." Further, it recognizes that "the elimination of child, early and force marriage should be considered in the discussion of the post-2015 development agenda."
The underlying reasons are many: poverty, the low or even no value accorded to female education and health, the worry about having to pay a larger dowry if the girl is in her 20s, the fear of social disapproval if a daughter is not married, and, most significantly, the desire to control female sexuality. What adds to this mix is the support that fundamentalists (of different religious hues) express for child marriage.

According to the National Family Health Survey (2005-06), as much as 46% of women in the 18-29-year age group were married before they turned 18, in spite of many laws on the statute books, including the most recent one, the Prohibition of Child Marriage Act (2006) which bans marriage of girls below 18 years.

Child marriages perpetrate violence on children and lead to more violence as the girl grows into womanhood. The under-age bride is vulnerable to domestic and sexual abuse, her health suffers irreparable damage because she bears children when her body is not prepared for pregnancy, she is more likely to die at childbirth than women who are married after 18 and give birth in their 20s, and the children she gives birth to are more likely to suffer from low birth weight. The Ministry of Health's *Family Welfare Statistics* 2011 showed that almost all states had registered a decline in underaged brides between 2005 and 2009. But too little is happening and what is happening is taking place too slowly, for it is estimated that India still has the largest number of child brides in the world.

A study over two years in Bihar and Jharkhand by a human rights organisation, Breakthrough, came up with two significant findings: One, fathers (the main decision-makers in this regard) looked upon child marriage as guaranteeing their daughters' safety and, two, the practice was driven by a strong fear of female sexual promiscuity and the ensuing "dishonour".

Street Vendors (Protection of Livelihood and Regulation of Street Vending) Bill

Street vendors constitute an integral part of our urban economy. Street vending is not only a source of self-employment to the poor in cities and towns but also a means to provide 'affordable' as well as 'convenient' services to a majority of the urban population, especially the common man. Street vendors are often those who are unable to get regular jobs in the remunerative formal sector on account of their low level of education and skills. They try to solve their livelihoods issues through their own meagre financial resources and sweat equity.
Considering the significant contribution made by street vendors to the urban society, and to enable them to earn a decent livelihood through creation of conditions for decent work, without causing obstruction to the public and to reflect the spirit of the Constitution of India on the right of citizens to equal protection before the law as well as their right to practice any profession, occupation, trade or business, the Government of India revised the National Policy on Urban Street Vendors, 2004 and brought out the National Policy on Urban Street Vendors, 2009.

Given the pace of urbanization and the opportunities presented through the development of urban areas, the growth of street vendors' population is likely to have an upward trend.

- The Bill aims to protect the livelihood rights of street vendors as well as regulate street vending through demarcation of vending zones, conditions for and restrictions on street vending.
- Any person intending to undertake street vending needs to register with the Town Vending Committee (TVC). He may then apply for a vending certificate that will be issued based on various criteria.
- In order to ensure participatory decision making, the TVC is required to have representation of officials and non-officials and street vendors, including women vendors with due representation from SC, ST, OBC, Minorities and persons with disabilities. It has been provided that 40% members of the TVC will be from amongst street vendors to be selected through election, of which one-third shall be women.
- The state government shall frame a scheme for street vendors. The local authority shall, in consultation with the planning authority, frame a street vending plan once every five years.
- To avoid arbitrariness of authorities, the Bill provides for a survey of all existing street vendors, and subsequent survey at-least once in every five years, and issue of certificate of vending to all the street vendors identified in the survey, with preference to SC, ST, OBC, women, persons with disabilities, minorities etc.
- The TVC comprises of the municipal commissioner, representatives of street vendors, local authority, planning authority, local police, resident welfare association and other traders associations.
- All existing street vendors, identified in the survey, will be accommodated in the vending zones subject to a norm conforming to 2.5% of the population of the ward or zone or town or city.
- The thrust of the Bill is on "natural market", which has been defined under the Bill. The entire planning exercise has to ensure that the provision of space or area for street vending is reasonable and consistent with existing natural markets. Thus, natural locations where there is a constant congregation of buyers and sellers will be protected under the Bill.
- The Bill provides for time period for release of seized goods, for both perishable and non-perishable goods. In case of non-perishable goods, the local authority is required to release the goods within two working days and incase of perishable goods, the goods shall be released the same day, of the claim being made.
- The Bill also provides for promotional measures to be undertaken by the Government, towards availability of credit, insurance and other welfare schemes of social security, capacity building programmes, research, education and training programme etc. for street vendors.
- Section 29 of the Bill provides for protection of street vendors from harassment by police and other authorities and provides for an overriding clause to ensure they carry on their business without the fear of harassment by the authorities under any other law.
- This Bill shall not apply to Railways land, premises and trains.

Key Issues and Analysis

- Currently, street vending is regulated under municipal laws enacted by state legislatures. Parliament's competence to legislate on this issue depends on whether

the Bill is interpreted as substantively addressing rights and obligations of street vendors (Concurrent List) or relating to municipal zoning (State List).

- The Bill does not specify principles to be followed by governments in issuing vending certificates, allocating vending zones and the number of vendors per zone. Absence of such norms could defeat the purpose of enacting a law to ensure uniformity in the legal framework.
- The Bill does not require the stakeholders to be consulted in the formulation of the street vending plan. This could lead to a lack of safeguards in ensuring that plan is determined in a fair manner.
- The central law will have overriding effect on state laws that are inconsistent with the Bill. Current state laws differ with the Bill in terms of powers of the TVC, and mechanism for dispute resolution.
- The Standing Committee suggests making the Bill applicable to the Railways, incorporating specific provisions of the scheme in the Bill, and consultation with the TVC on the vending plan.

'Reforming the Regulatory Environment for doing Business in India': Damodaran Panel report

A committee headed by former Sebi chairman M Damodaran has recommended scrapping of 'retrospective taxation' as a chief measure to make India an attractive destination to do business. The committee also recommended a system of advance ruling for all organisations tasked with framing regulations, encouraging arbitration to resolve contractual disputes and setting up of an overarching body to enable policy and process coordination of medium and small scale enterprises (MSMEs). The panel also suggested simpler drafting of rules to avoid room for interpretations, while recommending greater autonomy to regulators, transparency in selection of heads for regulatory bodies, incentives for states undertaking key reforms and faster resolution of disputes through arbitration and consent settlements.

The Damodaran committee in its report noted that even though the legal powers of the government extend to giving retrospective effect to taxation proposals, it might not pass the test of certainty and continuity.

The Damodaran panel, which was set up in August last year after India ranked a lowly 132 in World Bank's ease of doing business list among 183 countries, has made as many as 20 recommendations. These are classified in five broad categories – legal reforms, regulatory architecture, boosting efficacy of regulatory process, enabling MSMEs, and addressing state level issues.

Obama-Singh 21st Century Knowledge Initiative

Under the signature Obama-Singh 21st Century Knowledge Initiative, announced in 2009, each side has committed $5 million apiece over five years to facilitate partnerships between institutions of higher education in the two countries. It aims to strengthen collaboration and build partnerships between American and Indian institutions of higher education. Some of the program's goals are encouraging mutual understanding, facilitating educational reform, fostering economic development, and engaging civil society through academic cooperation. Exchange activities may include but are not limited to curriculum design, research collaboration, team teaching, focused series of exchanges, seminars, among other activities. Activities should be designed to develop expertise, advance scholarship and teaching, and promote long-term ties between partner institutions. The quality of institutions that have

already become part of initiative, and the scope of their partnership, speaks volumes of its potential.

From the US side, in the first year, it attracted heavyweights such as Rutgers, University of Montana, Cornell University, University of Michigan, Brown University, Duke University, Plymouth State University, University of Pittsburgh, Virginia Tech and Drexel University. In the second year, the initiative roped in Harvard School of Public Health, Ohio State University, University of Massachusetts (Amherst), University of North Carolina (Chapel Hill), Tennessee Technological University, Washington State University, University of Minnesota (Minneapolis) and University of Nevada (Las Vegas).

The Indian partners include Tata Institute of Social Sciences in Mumbai, Mahatma Gandhi University, Banaras Hindu University, IIT-Kanpur, IIT-Delhi, Indian Institute of Management in Bangalore, University of Pune, Aligarh Muslim University and Annamalai University. Together they are doing research in a number of cutting-edge areas including renewable energy, sustainable development and agriculture, and food security, among others. Ohio State is teaming up with Aligarh Muslim University to train faculty members in the fields of science, technology, engineering and mathematics (STEM). Montgomery College, a community college just outside of Washington, DC, is helping India set up 200 community colleges in the country.

With their emphasis on skills training, no doubt, these colleges have the potential to change the educational landscape in India. Of course, Montgomery College will not be the first American school to help set up quality educational institutions in India.

Two similar previous experiments had stunning successes in India: the IIT system received a lot of help and encouragement from the MIT during its founding days; Wharton School of Business was involved in the setting up of the IIM. If Montgomery College's initiative is half as successful as that of its two illustrious predecessors it would be a remarkable accomplishment.

Cabinet clears RAY and NULM

The Union Cabinet cleared RAY and NULM on September 3rd, 2013.

Rajiv Awas Yojna (RAY)

The Rajiv Awas Yojana is a scheme for the slum dwellers and the urban poor on the lines of the Indira Awas Yojana for the rural poor. The schemes for affordable housing through partnership and the scheme for interest subsidy for urban housing would be dovetailed into the Rajiv Awas Yojana which would extend support under JNNURM to States that are willing to assign property rights to people living in slum areas. The Government's effort would be to create a slum free India in five years through the Rajiv Awas Yojana. The Planning Commission has allocated Rs. 32,230 crore for implementation of RAY during 12th Five Year Plan.

RAY will cover all cities and towns, the selection of which will be made by the States in consultation with the Centre. States would required to include cities with religious/historic/culture/heritage and tourist importance and other cities taking into account the criterion of pace of growth of the city/slums within the city; predominance of SC/ST /minority population where property rights already stand assigned. The concerned state would

give priority to towns with larger number of people living in slums. RAY will also be applicable to "Urbanised villages" inside the planning area of the city.
The launch of the implementation of RAY with AHP will benefit 25 percent of slum dwellers through access to decent shelter, civic and social amenities and creation of affordable housing stock.

Objectives
Rajiv Awas Yojana envisages a '***Slum-Free India***' with inclusive and equitable cities with every citizen having access to basic social and civic services
The Scheme focusing on:

- Bringing the slums within the formal system and providing same amenities as the rest of the city
- Redressing the failures of the formal system that lie behind the creation of slums
- Tackling the shortages of urban land and housing

RAY based on learnings from JnNURM :

- The strategy for implementation for RAY is based on the learnings from JNNURM

RAY proposes:

- Flexibility to the states and ULBs to plan their pace of implementation and models for arranging land, resources, housing and partnerships.
- A 'whole city', 'all slums' "whole slum" approach Slum is defined as "a compact settlement of at least 20 households (10-15 for North Eastern and Special Category States) with a collection of poorly built tenements, mostly of temporary nature, crowded together usually with inadequate sanitary and drinking water facilities in unhygienic conditions"

Phasing of the Scheme :

- RAY is proposed to be launched in two phases:
- Phase I – covering innovative and pilot projects and initial set of cities ready with City –wide plans
- Phase II – for the remaining period of the Twelfth Five Year Plan (2013-2017)
- The selection of cities would be made by the States according to their aspirations and resource raising capacities (in consultation with the Centre)
- About 250 cities, mainly Class I cities, are expected to be covered by the end of the 12th Five Year Plan.

NULM
The Cabinet Committee on Economic Affairs has approved the proposal for restructuring of the centrally sponsored Scheme of Swarna Jayanti Shahari Rozgar Yojana (SJSRY) in the 12th Plan and as the National Urban Livelihoods Mission (NULM) with an allocation of approximately Rs. 6,405 crore.

The Mission of NULM is to reduce poverty and vulnerability of the urban poor households by enabling them to access gainful self-employment and skilled wage employment opportunities, resulting in an appreciable improvement in their livelihoods on a sustainable basis, through building strong grassroots level institutions of the poor. The mission would also aim at providing shelter equipped with essential services to the urban homeless in a phased manner. In addition, the Mission would also address livelihood concerns of the urban

street vendors also by facilitating access to suitable spaces, institutional credit, social security and skills to the urban street vendors for accessing emerging market opportunities.

NULM will rest on the foundation of community mobilization and women empowerment. NULM envisages universal mobilisation of urban poor households into thrift and credit-based Self-Help Groups (SHGs) and their federations/collectives. These groups will serve as a" support system for the poor, to meet their financial and social need.

Under the Mission, City Livelihood Centres (CLCs) will be established in Mission cities to provide a platform whereby the urban poor can market their services and access information on self-employment, skill training and other benefits.

NULM will target the urban poor who are occupationally vulnerable for Employment through Skills Training & Placement (EST&P). The Mission will focus on providing assistance for development / upgrading of the skills of the urban poor so as to enhance their capacity for self-employment and salaried employment. It intends to provide training to the urban poor as per the skill demand from the market, so that they can set up self-employment ventures or secure salaried employment.

Through the Self-Employment Programme (SEP), NULM will provide financial assistance to individuals and groups of urban poor to set up gainful self-employment / micro-enterprise ventures. The Support to Urban Street Vendors (USV) component will cover a socio-economic survey of street vendors, development of pro-vending urban planning and vendors' markets, credit enablement of vendors, skill development and micro-enterprise development and convergence under various schemes of the Government.

NULM would aim at providing shelter for the urban homeless equipped with essential services. The shelters should be permanent all-weather 24 x 7 shelters for the urban homeless. For every one lakh urban population, provisions will be made for permanent community shelters for a minimum of one hundred persons. Depending upon local conditions each shelter could cater to between 50 and 100 persons.

A mission mode approach in the form of the National Urban Livelihoods Mission (NULM) is considered necessary to organize urban poor in Self Help Groups, creating opportunities for skill development leading to market-based employment and helping them to set up self-employment ventures by ensuring easy access to credit. This will result in the empowerment and dignity of life of the urban poor. The approval of the National Urban Livelihoods Mission (NULM) represents a strategic shift in the Government's commitment to urban poverty alleviation.

The implementation of NULM in a Mission mode is essential as it will:

a) Shift focus from the present allocation-based strategy and distribution of funds to a demand-driven paradigm that provides flexibility to States to formulate their own livelihoods-based State urban poverty reduction strategies and city/town action plans for poverty reduction;
b) Address livelihoods concerns of the urban poor in convergence with programmes to tackle the multiple vulnerabilities of the urban poor: occupational, residential and social;
c) Make States and cities/towns focus on tangible outcomes, time-bound targets and monitor the achievement of such targets so linked to specific poverty outcomes;

d) Facilitate the building of key institutions of the poor and their capacity so that they can implement programmes by themselves with support provided by Government, civil society, the private sector and other partners;
e) Address the key structural deficiencies observed in the implementation of the present SJSRY, specially the lack of dedicated manpower and professionalism in implementation at the Central, State and City/Town levels; and
f) Enable steady movement to the ultimate objective that the urban poor drive their own agenda to come out of the clutches of poverty and sustain their own livelihoods.

NULM will have the following components:

A. Social Mobilisation and Institution Development (SM&ID) with sub-components:

i. Building Community Institutions -SHGs and their Federations;
ii. Universal Financial Inclusion;
iii. Revolving Fund Support to SHGs and their Federations;
iv. Community Investment Fund (CIF); and
v. Credit Guarantee Fund (CGF) for Micro-enterprises.

B. Capacity Building and Training (CB&T) with sub-components:

i. Technical Support at National, State, District and City/Town Levels;
ii. Service Centres/Livelihood Centre at City/Town Level;and
iii. Training and Other Capacity Building Support.

C. Employment through Skills Training and Placement (EST&P)

iv. Skills Training for Micro Enterprise Development/Self-Employment;
v. Skills Training & Placement for Salaried/Wage Employment;
vi. Upgrading Skills of Specially Vulnerable Groups
vii. Innovative & Special Projects.

D. Self-employment Programme (SEP):

i. Individual Enterprises (SEP-I);
ii. Group Enterprises (SEP-G); and
iii. Credit Card for enterprise development
iv. Technology, Marketing and Other Support.

The NULM will be implemented in two phases: Phase I (2013-2017) and Phase II (2017-2022). In Phase I, NULM will target all cities with a population of one lakh or more and district headquarter towns with a population of less than one lakh as per Census of India 2011. However, other towns may be allowed in exceptional cases on the request of the States. Funding will be shared between the Centre and the States in the ratio of 75:25. For North Eastern and Special Category States (Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim, Tripura, Jammu & Kashmir, Himachal Pradesh and Uttarakhand), this ratio will be 90:10.

NSA surveillance and India

PRISM is a clandestine mass electronic surveillance data mining program known to have been operated by the United States National Security Agency (NSA) since 2007. *PRISM* is a government code name for a data-collection effort known officially by the SIGAD **US-984XN**. The Prism program collects stored Internet communications based on demands made to Internet companies such as Google Inc. under Section 702 of the FISA Amendments Act of 2008. The NSA can use these Prism requests to target communications that were encrypted when they travelled across the Internet backbone, to focus on stored data that telecommunication filtering systems discarded earlier, and to get data that is easier to handle,

among other things. PRISM is "the number one source of raw intelligence used for NSA analytic reports", and it accounts for 91% of the NSA's Internet traffic acquired under FISA section 702 authority."

XKeyscore (XKS) is a formerly secret computer system used by the United States National Security Agency for searching and analyzing Internet data about foreign nationals across the world. The program is run jointly with other agencies including Australia's Defence Signals Directorate, and New Zealand's Government Communications Security Bureau. XKeyscore is an NSA data-retrieval system which consists of a series of user interfaces, backend databases, servers and software that selects certain types of metadata that the NSA has already collected using other methods. The tool has the ability to query, in real time, "strong selectors", such as email, or "soft selectors", such as content. The tool also gives the analyst the abilities to look for "anomalies"; without any specific person attached, it lists the example of a German speaker in Pakistan as an example of such. It also has the ability to detect encrypted activity such as "all PGP usage in Iran." Under US law, the NSA is required to obtain an individualized Fisa warrant only if the target of their surveillance is a 'US person', though no such warrant is required for intercepting the communications of Americans with foreign targets. But XKeyscore provides the technological capability, if not the legal authority, to target even US persons for extensive electronic surveillance without a warrant provided that some identifying information, such as their email or IP address, is known to the analyst.
The XKeyscore system is continuously collecting so much internet data that it can be stored only for short periods of time. Content remains on the system for only three to five days, while metadata is stored for 30 days. One document explains: "At some sites, the amount of data we receive per day (20+ terabytes) can only be stored for as little as 24 hours."

To solve this problem, the NSA has created a multi-tiered system that allows analysts to store "interesting" content in other databases, such as one named Pinwale which can store material for up to five years.

Boundless Informant is a big data analysis and data visualization system used by the United States National Security Agency (NSA) to give NSA managers summaries of the NSA's world wide data collection activities. Data analyzed by Boundless Informant includes electronic surveillance program records (DNI) and telephone call metadata records (DNR) stored in an NSA data archive called GM-PLACE. The tool, according to a factsheet *The Guardian* obtained, "allows users to select a country on a map and view the metadata volume and select details about the collections against that country." It was designed, per one document, "to give NSA officials answers to questions like, 'What type of coverage do we have on country X' in 'near real-time by asking the SIGINT [signals intelligence] infrastructure.'" The metadata includes information the NSA has collected from both computer and telephone networks. The country where the largest amount of intelligence was gathered was, unsurprisingly, Iran: Boundless Informant shows more than 14 billion reports in that period. The second-largest collection came from Pakistan, with 13.5 billion reports. Jordan -- which is, yes, one of America's closest Arab allies -- had 12.7 billion reports. Egypt came in fourth (7.6 billion reports), and India in fifth with 6.3 billion. The point seems to be (again) pattern recognition and social network identification rather than direct eavesdropping.

Fairview: A mass surveillance program directed at foreign mobile phone users.

Magic Lantern: A keystroke logging software deployed by the FBI in the form of an e-mail attachment. When activated, it acts as a trojan horse and allows the FBI to decrypt user communications

Carnivore: A system implemented by the Federal Bureau of Investigation that was designed to monitor email and electronic communications. Apparently replaced by commercial software such as Narus Insight.

Special Source Operations is a division in the American National Security Agency which is responsible for all programs aimed at monitoring U.S. communications systems through corporate partnerships. Its existence was revealed through documents provided by Edward Snowden to news publications in 2013. Known programs include:

- PRISM

The **Special Collection Service** (SCS) is a highly classified joint U.S. Central Intelligence Agency-National Security Agency program charged with inserting eavesdropping equipment in difficult-to-reach places, such a foreign embassies, communications centers, and foreign government installations. According to Der Spiegel, many of their operations are a direct violation of at least 3 signed treaties: "The Convention on the Privileges and Immunities of the United Nations of 1946, the Vienna Convention on Diplomatic Relations of 1961, and a signed an agreement in 1947 that rules out all undercover operations.

Tempora, as exposed by *The Guardian* newspaper, is a clandestine security electronic surveillance program tested in 2008, established in 2011 and operated by the British Government Communications Headquarters (GCHQ). Tempora uses intercepts on the fibre-optic cables that make up the backbone of the internet to gain access to large amounts of internet users' personal data. The intercepts are placed in the United Kingdom and overseas, with the knowledge of companies owning either the cables or landing stations. The two principal components of Tempora are called "Mastering the Internet" and "Global Telecoms Exploitation". Mastering the Internet (MTI) is a GCHQ project that will include thousands of deep packet inspection probes inside communications providers' networks, as well as massive computing power at the intelligence agency's Cheltenham base, "the concrete doughnut". MTI is a core piece of the government's Interception Modernisation Programme (IMP). *The Guardian* claims that no distinction is made in the gathering of data between private citizens and targeted suspects. Tempora is said to include recordings of telephone calls, the content of email messages, Facebook entries and the personal internet history of users. This appears to have been done with the secret co-operation, voluntary or forced, of the companies that operate the cables, potentially giving GCHQ access to 10 gigabits of data a second, or 21 petabytes a day. They use a technique called Massive Volume Reduction (MVR). Peer-to-peer downloads, for example, are classed as "high-volume, low-value traffic" and discarded by an initial filter. This reduces the volume of data by 30 percent. They use specific searches, which can relate to trigger words, email addresses of interest, or targeted persons and phone numbers. GCHQ and the NSA have identified 40,000 and 30,000 triggers respectively.
It's possible that the UK and US intelligence agencies co-operate in order to bypass domestic restrictions on intelligence gathering -- the NSA isn't bound by UK restrictions on surveillance of UK citizens and GCHQ isn't bound by US restrictions on surveillance of US citizens.

Indian angle

At its core, the issue of digital privacy is about reconciling three somewhat contradictory objectives. The first is the government's responsibility to ensure the security of the state and its citizenry. The second is individuals' right to privacy and opportunity. And the third is the preservation of a conducive business climate, in this case, for internet firms that often provide services to users for free.

Thus, gathering vital intelligence might impinge on individuals' privacy, ensuring citizens' rights may mean sacrificing business interests, promoting internet access could necessitate concessions on security, and so forth. Each state has to find its own balance between security, privacy and a favourable business climate based on the nature and severity of the security threats it faces, its legal regime and system of governance, and its economic landscape. Unfortunately, on each measure - security, privacy and business climate - India's efforts can be said to have fallen short.

Take security. All states, especially those facing major security threats, must at times conduct surveillance on individuals to gather critical intelligence, including electronic surveillance, in a world where information is increasingly becoming digital. In fact, a state that does not have adequate electronic surveillance capabilities is failing in its security duties.

While details about India's surveillance capabilities are not all public, it appears to be lagging in this respect. Its shortcomings were deeply exposed during the 26/11 attacks in Mumbai, when the perpetrators used voice over internet protocol (VoIP).

India also falls short on the matter of data privacy. Whereas the US makes strict legal divisions between spying on individuals in the US and those abroad, the distinction in India is less clear, meaning there is greater leeway for the state invading - and possibly abusing - the privacy of individuals it is supposed to protect.

The Information Technology Act - specifically Section 69 and its attendant clauses - is extraordinarily wide-ranging, empowering both central and state governments to "exercise powers of interception".

Finally, the Indian government's relationship with private internet companies has been contentious, to the detriment of the broader business environment. Telecom licences disadvantage the private sector vis-a-vis government. And while representatives of internet companies argue that they regularly comply with court orders, they bristle at seemingly arbitrary requests to interfere with online data. Such tussles have placed the government at loggerheads with many major digital service providers, so much so that a view in official circles is that digital communication is a nuisance, rather than a crucial resource for a fast-developing, services-oriented economy.

The Indian security agencies knew that US National Security Agency's (NSA) surveillance systems had been snooping, intercepting and reading emails and other supposedly secure cyber data on a regular basis since 2005-06 but could not take counter-measures due to lack of an alternative to systems like Gmail.

India has turned out to be the fifth most targeted country by the US, data revealed by whistleblower Edward Snowden showed. Snowden was a contractor for the NSA.

The U.S. National Security Agency snooped on the Indian embassy and considered it a "target" along with 37 other embassies and missions. The NSA used "an extraordinary range of spying methods" against the Indian and other diplomatic posts in the U.S., deploying everything from bugs implanted in electronic communications gear to taps into cables to the collection of transmissions with specialised antennae. The Guardian exposé on the spying methods used against embassies said a key method was code-named 'Dropmire,' which, according to a 2007 document, is "implanted on the Cryptofax." This is said to be a reference to a bug placed in a commercially available encrypted fax machine used at missions such as that of the European Union. It is unclear whether the Indian embassy uses such a device.
In addition to India, nations friendly with the U.S. were placed under surveillance, according to the NSA documentation, and these included the EU missions and the French, Italian and Greek embassies, as well as a number of other American allies, including Japan, Mexico, South Korea, and Turkey. "Traditional ideological adversaries and sensitive Middle Eastern countries" were also on the list of targets, the report noted.

US President Barack Obama and his team have defended the actions referring to the arrests and convictions of David Headley (for his plotting and recce of the 2008 Mumbai attacks) and Najibullah Zazi, who was arrested in 2009 as part of the 2009 US al-Qaeda group accused of planning suicide bombings on the New York City subway system.

India has largely finished rolling out a revamped cyber security structure for the country, covering not only surveillance but also duller aspects like laws and administration.

India's cyber security programmes also use metadata-based systems like the recently exposed US National Security Agency's PRISM system. Such programmes do not snoop into the contents of electronic communication. They search for patterns in the manner emails, phone calls and SMSes are sent and delivered. India's metadata system's name and technical specifics are unknown. But it is much simpler than the US one. It does not store and analyse communications in anything as detailed a fashion as PRISM. It is run by the telecom department and the Computer Emergency Response Team, not the intelligence agencies.
In India, there are concerns around the provisions for authorisation of interception in Section 5(2) of the Indian Telegraph Act, 1885, read with Rule 419 (A) of the Indian Telegraph Rules, 1951, as well as in Section 69 of the Information Amendment Technology Act, 2008 (IT Act), read with the Information Technology (Directions for Interception or Monitoring or Decryption of Information) Rules, 2009.

The Supreme Court, in its order of December 18, 1996, had upheld the constitutional validity of interceptions and monitoring under Section 5(2) of the Indian Telegraph Act, but added that telephone tapping would infringe the Right to Life and Right to Freedom of Speech and Expression enshrined in Articles 21 and 19(1)(a), respectively, of the Constitution, unless it was undertaken in the procedures established by law. While the Rules under the IT Act have laid down the guidelines for such monitoring, there is still a trust deficit among the law enforcement agencies and the civil society.

There are no laws that allow for *mass* surveillance in India. The two laws covering interception are the Indian Telegraph Act of 1885 and the Information Technology Act of 2000, as amended in 2008, and they restrict lawful interception to time-limited and targeted interception.The targeted interception both these laws allow ordinarily requires case-by-case authorization by either the home secretary or the secretary of the department of information technology.

There are many laws that cover recorded metadata, all of which have far lower standards. Under the Code of Criminal Procedure, no court order is required unless the entity is seen to be a "postal or telegraph authority" — and generally e-mail providers and social networking sites are not seen as such.

Unauthorized access to communications data is not punishable per se, which is why a private detective who gained access to the cellphone records of Arun Jaitley, a Bharatiya Janata Party leader, has been charged under the weak provision on fraud, rather than invasion of privacy. While there is a provision in the Telegraph Act to punish unlawful interception, it carries a far lesser penalty (up to three years of imprisonment) than for a citizen's failure to assist an agency that wishes to intercept or monitor or decrypt (up to seven years of imprisonment).
In the licenses that the Department of Telecommunications grants Internet service providers, cellular providers and telecoms, there are provisions that require them to provide direct access to all communications data and content even without a warrant, which is not permitted by the existing laws on interception. The licenses also force cellular providers to have 'bulk encryption' of less than 40 bits. (Since G.S.M. network encryption systems like A5/1, A5/2, and A5/3 have a fixed encryption bit length of 64 bits, providers in India have been known use A5/0, that is, no encryption, thus meaning any person — not just the government — can use off-the-air interception techniques to listen to your calls.)

The Directorate of Forensic Sciences in the Ministry of Home Affairs (MHA) is set to purchase a range of equipment and software that will allow it to conduct deep search, surveillance and monitoring of voice calls, SMS, email, video, Internet, chat, browsing and Skype sessions on an unprecedented scale.

Efforts to have a privacy law are on and the Justice AP Shah-chaired Group of Experts on Privacy has submitted its report last year. It is currently being discussed by the stakeholders. The report has emphasised on self-regulation with legal sanctity and hopefully the final touches to the legislation will take place in the next couple of months.

Likewise, the government is likely to announce the cyber security policy that has been cleared by the Cabinet Committee on Security. This policy will also be an indicator of the recent thinking within the government as to what extent the balance between security requirements and privacy concerns have been harmonised. Notably, the new structure does not include regulations limiting what India can do in the cyber realm outside its borders.

CMS (Central Monitoring System)

Eight-nine thousand calls are intercepted at any point. CMS will generate electronic records of each intercepted call, its duration, and check whether undesired call recordings are deleted. Emergency requests, a loophole often used for illegal tapping, will be monitored. Once implemented, the CMS will enhance the government's surveillance and interception capabilities far beyond 'meta-data,' data mining, and the original expectation of "instant" and secure interception of phone conversations.

The interception flow diagram, hitherto under wraps, reveals that the CMS being set up by C-DoT — an obscure government enterprise located on the outskirts of New Delhi — will have the capability to monitor and deliver Intercept Relating Information (IRI) across 900 million mobile (GSM and CDMA) and fixed (PSTN) lines as well as 160 million Internet users, on a 'real time' basis through secure ethernet leased lines.

The CMS will have unfettered access to the existing Lawful Interception Systems (LIS), currently installed in the network of every fixed and mobile operator, ISP, and International Long Distance service provider. Mobile and long distance operators, who were required to ensure interception only after they were in receipt of the "authorisation," will no longer be in the picture. With CMS, all authorisations remain secret within government departments.
This means that government agencies can access in real time any mobile and fixed line phone conversation, SMS, fax, web-site visit, social media usage, Internet search and email, including partially written emails in draft folders, of "targeted numbers."

NATGRID

Though NATGRID will not store information, it will act like a Google search for agencies looking for real time information of a person's call data records, travel, banking and credit card, property and income tax, etc. Twenty-one sets of data will be sourced through NATGRID. If authorised, it will profile suspects and generate trends about suspicious activities.

CCTNS

The system will connect all the police stations in the country

IVFRT (Immigration, visa and foreigner's registration and tracking)

It tracks people entering or leaving India. It generates alerts and trends of suspicious travel.

NCCC (National Cyber Coordination centre)

NCCC will scan and analyse traffic moving on the internet. Though the government claims that NCCC won't snoop on content of the e-mail or tweet handle, it will generate alerts about irregular activities such as sudden rise in traffic on one web site or in a particular region.

UIDAI/NPR

Both agencies collect biometric details of citizens. NPR collects additional information like present address, qualification, occupation, place of birth, etc.

Infamous cases of infringement of privacy

The infamous Niira Radia tapes having private conversations with industrialists like Ratan Tata, politicians and journalists were leaked. CMS might prevent such leakages
A senior executive of a telecom company had allegedly tipped off a joint secretary in the Union home ministry about the latter's phone being intercepted. CMS will stop such practices
A Delhi Police constable allegedly tried to get call record details of Leader of Opposition Arun Jaitley by fraudulent means. NATGRID will ensure checks
Former SP leader Amar Singh's alleged conversations with politicians, celebrities and industrialists were leaked in 2011. Singh had denied it.

Why all the hue and cry over surveillance and invasion of privacy?

In a New York Review of Books article, James Bamford, the author of noted books on the NSA, quotes Senator Frank Church who, way back in 1975, was already worried about the dangers of absolute surveillance [emphasis added]:
*"That capability at any time **could be turned around on the American people** and no American would have any privacy left, such [is] the capability to monitor everything: telephone conversations, telegrams, it doesn't matter. There would be no place to hide. If this government ever became a tyranny, if a dictator ever took charge in this country, **the***

technological capacity that the intelligence community has given the government could enable it to impose total tyranny, *and there would be no way to fight back, because the most careful effort to combine together in resistance to the government, no matter how privately it was done, is within the reach of the government to know. Such is the capability of this technology ... I don't want to see this country ever go across the bridge. I know the capacity that is there to make tyranny total in America, and we must see to it that this agency and all agencies that possess this technology operate within the law and under proper supervision, so that we never cross over that abyss.* ***That is the abyss from which there is no return.***

Right to Privacy in India

The Black's Law Dictionary refers to privacy as "the right to be let alone; the right of a person to be free from unwarranted publicity; and the right to live without unwarranted interference by the public in matters with which the public is not necessarily concerned."Therefore, the right to privacy, notwithstanding its differing connotations, remains a private right of an individual.

Privacy as a concept involves what privacy entails and how it is to be valued. Privacy as a right involves the extent to which privacy is (and should be legally protected). " The law does not determine what privacy is, but only what situations of privacy will be afforded legal protection." It is interesting to note that the common law does not know a general right of privacy and the Indian Parliament has so far been reluctant to enact one.

The right to Privacy is the hallmark of a cultured existence, as in the words of Louise Brandeis, J "the right most valued by civilized men". At the international level, the International Covenant on Civil and Political Rights (of which India is a signatory), and more recently, the European Convention of Human Rights recognizes this right.

The Indian Constitution, in comparison, fails to expressly recognize the Right to Privacy. Judicial activism has brought the Right to Privacy within the realm of Fundamental Rights. Article 141 of the Constitution states that "the law declared by the Supreme Court shall be binding on all courts within the territory of India." Therefore, the decisions of The Supreme Court of India become the Law of the Land. The Supreme Court of India has come to the rescue of common citizen, time and again by construing "right to privacy" as a part of the Fundamental Right to "protection of life and personal liberty" under Article 21 of the Constitution, which states "no person shall be deprived of his life or personal liberty except according to procedures established by law". In the context of personal liberty, the Supreme Court has observed "those who feel called upon to deprive other persons of their personal liberty in the discharge of what they conceive to be their duty must strictly and scrupulously observe the forms and rules of the law."

If one follows the judgments given by the Hon'ble Supreme Court, three themes emerge:

1. that the individual's right to privacy exists and any unlawful invasion of privacy would make the 'offender' liable for the consequences in accordance with law;
2. that there is constitutional recognition given to the right of privacy which protects personal privacy against unlawful governmental invasion;
3. that the person's "right to be let alone" is not an absolute right and may be lawfully restricted for the prevention of crime, disorder or protection of health or morals or protection of rights and freedom of others;

On the basis of a dispassionate perusal of the aforementioned judicial rulings, it is evident that there is an implied, unenumerated, but judicially- evolved and recognized right to privacy under the Indian Constitution. The shift in judicial interpretation is most notably observed following the Maneka Gandhi case, wherein this right is recognized, subject to legal restrictions satisfying the requirements as laid down in the Maneka Gandhi case. However, if the courts were to address the issue of right to privacy under Article 21 afresh, there is little doubt that it would conclude that there does exist a right to privacy. On a harmonious interpretation of the legal principles as laid down by the Supreme Court at different points of time, it is sufficient to conclude the existence of right to privacy under Part III of the Constitution. Privacy is also a feature of the dignity of an individual that the preamble to the Constitution assures every individual. Thus the right is not merely a negative mandate upon the state not to encroach upon the private space of the individual but is also a positive affirmation on the state to create adequate institutions that would enable one to effectively protect his private life. Thus the right to privacy has a strong constitutional edifice.
This, however, does not mean that the government need not enact a specific law ensuring right to privacy. The need for right to privacy law has never been more than in the digitalised, globalised world that we currently live in.

Sports leagues in India

Indian Badminton League is a franchise league by Badminton Association of India (BAI). The inaugural edition of the Indian Badminton League is held in India from August 14,2013 to August 31, 2013. The players' auction for the first IBL(2013 Indian Badminton League) was held in Delhi on 22 July 2013. The league has 6 franchises representing the Indian cities of Delhi, Mumbai, Bangalore, Pune, Hyderabad and Lucknow and the matches will be played in two legs, home and away.

The league kicked off at Delhi with a gala ceremony on 14 August 2013. The Finals were played at Mumbai on 31 August 2013. Semi finals were held at Hyderabad 28th Aug 2013 and Bangalore on 29th Aug 2013. Hyderabad Hotshots won the inaugural IBL title at Mumbai on 31 August 2013.

The Teams in the inaugural IBL were Mumbai Masters, Pune Pistons, Banga Beats, Hyderabad HotShots, Delhi Smashers and Awadhe Warriors.

IBL is based on the Sudirman Cup format. But IBL's major difference would be an additional men's singles match instead of the women's doubles. So a typical face-off would have two men's, one women's singles, one men's doubles and one mixed doubles matches played back-to-back. The entire engagement is expected to last about three hours. In the group stage, all five matches in a contest must be completed, even if a team wins the first three. In the knockout phase, the team winning the first three advances to the next stage and need not play the remaining two. In a round-robin format, each team plays the other in a league spread across six cities.

Hockey India League, abbreviated as **HIL**, is a professional league for field hockey competition in India. It is organised by Hockey India. The tournament is contested among five franchisee-based teams (originally planned as six) consisting of players from India and around the world. The entire event takes place on home and away basis culminating into multi header playoffs. The International Hockey Federation (FIH) has sanctioned the event and also provides a 30-day window at the beginning of a year so that all top players can

participate. It is currently sponsored by two-wheeler manufacturer Hero MotoCorp, and is therefore officially known as **Hero Hockey India League** or **HHIL**.

The first season of HIL was played from 14 January to 10 February 2013, and was contested among five teams out of which Ranchi Rhinos became champions after defeating Delhi Waveriders 2–1 in the final. The second edition of the Hockey India League will be played from January 23 to February 23 next year. A new team will be added to make it a six franchise based tournament

The **Indian Super League** is the name of a new, proposed football league in India by IMG-Reliance (a combo of IMG and Reliance Industries) and the All India Football Federation which is set to kick-off in 2014. Keeping in view various key factors, including scheduling conflicts with the (national) I-League, it has been decided to launch the Indian Super League on a permanent window of September to November starting from year 2014. The league is expected to be ran along the lines of the Indian Premier League of cricket and Major League Soccer of the United States

The league is expected to be competed between eight franchises with each team featuring one major marquee player. So far the names already confirmed to be auctioned in November are Dwight Yorke, Fredrik Ljungberg, Robert Pirès, Louis Saha, and Hernán Crespo. It has also already been confirmed that 59 Indian players had already been signed up for the league as well

The eight cities and/or states which were selected to host teams are Bangalore, Chennai, Delhi, Goa, Kochi, Kolkata, Mumbai, and Pune with Guwahati and Hyderabad being on the reserve list. Each team would have a roster of 22 players each which would contain 10 foreigners, 8 domestic Indian players, and 4 local Indian players.

The trickle-down effect of the new league will ensure that many more youngsters take up football, making the game an attractive proposition for corporate sponsorship. Besides, it will also invigorate the I-League, forcing the latter to raise its standards. It's unfortunate that I-League teams have hitherto refused to release their players for the new league. Instead of looking upon the latter as an existential threat, the I-League would do well to innovate and adopt best practices. Together the two leagues can revolutionise Indian football.

The limited success Indian football achieved in the 1950s and 60s in the Asian Games and Olympics has now become distant memory. Even the limited popularity the game enjoyed during the early years was generally confined to a few states and urban centres which contributed most of the players. The growing popularity of games like cricket and the lack of basic facilities and infrastructure for football have only edged out this once popular game to the margins. To compound problems, the hostility of I-League clubs and exclusion of their popular players from the new tournament would reduce local flavour and ground support for the new venture.

Placing too much emphasis on foreign players is unlikely to extend the game's popularity. The inability of top Indian clubs to make any major breakthroughs in their fan base, despite having a liberal sprinkling of foreign players on their rolls, only confirms this belief. The All India Football Federation, the national soccer body, has neither the vision nor resources to pull up its socks. What Indian football really needs is a string of football academies and

international coaches that will train and inspire a new generation of school-going children, already besotted by giant European football clubs and their top players.

The made-for-television event, sold to Rupert Murdoch-owned Star TV network, had already run into trouble over fierce opposition from India's top clubs. The clubs declined to release their players for the tournament, saying it would ruin the national I-League competition.

New leagues v/s IPL

Indian Badminton League (IBL) was able to attract as many as 21.7 million viewers on Star Sports during the 18-day tournament (August 14 to 31). And, the Hero Hockey India League (HHIL) recorded a viewership of 41.4 million (January 14 to February 10; in CS4 + all-Indian market). That the two together accounted for a third of the viewership garnered by the Indian Premier League in its sixth edition (about 190 million over two months) could be seen as a decent beginning.

The figures for the badminton and hockey leagues seem to look even more attractive if one takes into account the average number of viewers per day. The latter had an average viewership of 1.59 million a day in the 26-day tournament, while the former clocked an average 1.2 million viewership. In comparison, the average viewership of IPL-6 was 3.5 million per day.

In terms of the money broadcasters made, according to analysts, the badminton and hockey leagues together saw around Rs 170 crore of revenues rustling. That might be just a fifth of IPL's earnings but looks quite good, given that the two non-cricket leagues earned their advertising revenues over 44 days, while IPL was a 54-day event.

Many factors contributed to the relative success of the leagues. These include Indian viewers' cricket fatigue due to over-exposure to the sport, thrust by broadcasting partners and players' popularity. A big thrust for IBL came from the popularity of players like Saina Nehwal and P V Sindhu and their appeal among the youth. Though there was a controversy surrounding Jwala Gutta, media planners believe, with badminton players becoming popular among the public, advertisers are getting more confident about putting their money in these events. In the first year, IBL and HHIL — 2013 was the inaugural year for both — roped in 10 advertisers (including on-ground sponsor Vodafone) and six (including four on-ground sponsors — Airtel, Hero, NTPC and Videocon), respectively.

IBL, despite its less reach than that of HHIL, earned higher ad revenues. Badminton viewership is slightly more skewed towards the SEC A (Socio Economic Classification - A) audience. So, the spend on the property by brands could have been higher. Also, hockey is more male-skewed and doesn't have a pan-Indian appeal when compared to badminton. Besides, the availability of content in both English and Hindi also helped generate interest in the leagues.

Li-Fi

Li-Fi, an alternative to Wi-Fi that transmits data using the spectrum of visible light, has achieved a new breakthrough, with UK scientists reporting transmission speeds of 10Gbit/s – more than 250 times faster than 'superfast' broadband.

The term Li-Fi was coined by Edinburgh University's Prof Harald Haas though the technology is also known as visible light communications (VLC).

Many experts claim that Li-Fi represents the future of mobile internet thanks to its reduced costs and greater efficiency compared to traditional Wi-Fi.

Both Wi-Fi and Li-Fi transmit data over the electromagnetic spectrum, but whereas Wi-Fi utilises radio waves, Li-Fi uses visible light. This is a distinct advantage in that the visible light is far more plentiful than the radio spectrum (10,000 times more in fact) and can achieve far greater data density. Li-Fi signals work by switching bulbs on and off incredibly quickly – too quickly to be noticed by the human eye. This most recent breakthrough builds upon this by using tiny micro-LED bulbs to stream several lines of data in parallel. Another advantage is that evenly spaced LED transmitters could provide much more localised and consistent internet connectivity throughout buildings. Li-fi promises to be cheaper and more energy-efficient than existing wireless radio systems.

Existing LED light bulbs could be converted to transmit Li-Fi signals with a single microchip, and the technology would also be of use in situations where radio frequencies cannot be used for fear of interfering with electronic circuitry. Using a digital modulation technique called Orthogonal Frequency Divisional Multiplexing (OFDM), researchers enabled micro-LED light bulbs to handle millions of changes in light intensity per second, effectively behaving like an extremely fast on/off switch.

And although Li-Fi bulbs would have to be kept on to transmit data, the bulbs could be dimmed to the point that they were not visible to humans and yet still functional. One drawback is that the data receiver would have to be in sight of the transmitter-bulb as visible light does not penetrate solid materials. The makers of Li-Fi note that this quality might actually be an advantage in some scenarios, making Li-Fi more secure than Wi-Fi with hackers unable to access unsecured internet connections from out of sight of the transmitter.

Lake burst and Uttarakhand disaster

A **glacial lake outburst flood** (GLOF) is a type of outburst flood that occurs when the dam containing a glacial lake fails. The dam can consist of glacier ice or a terminal moraine. Failure can happen due to erosion, a build up of water pressure, an avalanche of rock or heavy snow, an earthquake or cryoseism, volcanic eruptions under the ice, or if a large enough portion of a glacier breaks off and massively displaces the waters in a glacial lake at its base.

The extreme rains of June 16 this year lead to a disaster of unprecedented proportions in the Himalayan state of Uttarakhand. It is believed that a massive landslide occurred upstream in the north-east region of the Kedar valley. Heavy rainfall occurred at the same time formed a small lake in the north-west of the valley. Under normal circumstances, the water would have flowed away. But a block formed by debris led to the accumulation of water. When extreme pressure caused a breach in the boundary of the lake, a large amount of water gushed out, forcing another rock to flow away. This created a new stream, in addition to the two streams that existed already. The amount of water, moraines and debris was high enough to increase the level of the biggest stream in the west, create a new stream in between, and increase water level substantially in the eastern stream. The debris from the landslide and water from the lake travelled down the slope, channelled into the glacier, and came down to Kedarnath town.

National Cyber Security Policy

With an aim to monitor and protect information and strengthen defences from cyber attacks, the National Cyber Security Policy 2013 was released on July 2, 2013 by the Government of

India. The purpose of this framework document is to ensure a secure and resilient cyberspace for citizens, businesses and the government.

The Cyber Security Policy aims at protection of information infrastructure in cyberspace, reduce vulnerabilities, build capabilities to prevent and respond to cyber threats and minimize damage from cyber incidents through a combination of institutional structures, people, process, technology and cooperation. The objective of this policy in broad terms is to create a secure cyberspace ecosystem and strengthen the regulatory framework. A National and sectoral 24X7 mechanism has been envisaged to deal with cyber threats through National Critical Information Infrastructure Protection Centre (NCIIPC). Computer Emergency Response Team (CERT-In) has been designated to act as a nodal agency for coordination of crisis management efforts. CERT-In will also act as umbrella organization for coordination actions and operationalization of sectoral CERTs. A mechanism is proposed to be evolved for obtaining strategic information regarding threats to information and communication technology (ICT) infrastructure, creating scenarios of response, resolution and crisis management through effective predictive, prevention, response and recovery action.

It plans to establish a mechanism for sharing information, identifying and responding to cyber security incidents and for cooperation in restoration efforts.

The policy lays out 14 objectives which include creation of a cyber ecosystem in the country, providing fiscal benefits to businesses for adoption of standard security practices and processes, developing effective public private partnerships and collaborative engagements through technical and operational cooperation.

The policy calls for effective public and private partnership and collaborative engagements through technical and operational cooperation. The stress on public-private partnership is critical to tackling cyber threats through proactive measures and adoption of best practices besides creating a think tank for cyber security evolution in future.

Another strategy which has been emphasized is the promotion of research and development in cyber security. Research and development of trustworthy systems and their testing, collaboration with industry and academia, setting up of 'Centre of Excellence' in areas of strategic importance from the point of view of cyber and R&D on cutting edge security technologies, are the hallmarks of this strategy laid down in the policy.

The policy also calls for developing human resource through education and training programmes, establishing cyber security training infrastructure through public private partnership and to establish institutional mechanisms for capacity building for law enforcement agencies. Creating a workforce of 500,000 professionals trained in cyber security in the next 5 years is also envisaged in the policy through skill development and training. The policy plans to promote and launch a comprehensive national awareness programme on security of cyberspace through cyber security workshops, seminars and certifications with a view to develop awareness of the challenges of cyber security amongst citizens.

The policy document aims at encouraging all organizations whether public or private to designate a person to serve as Chief Information Security Officer (CISO) who will be responsible for cyber security initiatives.

The provisions to take care security risks emanating due to use of new technologies e.g. Cloud Computing, has not been addressed. Another area which is left untouched by this policy is tackling the risks arising due to increased use of social networking sites by criminals and anti-national elements. There is also a need to incorporate cyber crime tracking, cyber forensic capacity building and creation of a platform for sharing and analysis of information between public and private sectors on continuous basis.

The policy is nothing but a collation of policy statements and lofty objectives without any accompanying plan of action. It seems to be incomplete as it is not accompanied by a national cyber security action plan. The policy does not contain parameters for effective implantation. The policy also does not mention the Information Technology Act of 2000 which is significant in the event of a conflict. In case of a conflict, the IT Act shall prevail because it was passed by Parliament and the policy is an executive decision. Further, the policy does not speak about how the data will be collected, how it would be processed and how it will be used. It has no checks and balances to ensure that activities meant for protecting online information are not abused. The policy is silent about Central Monitoring System, snooping surveillance interception, monitoring and scrutiny activities by other nations.

Indian Armed forces are in the process of establishing a cyber command as a part of strengthening the cyber security of defence network and installations. Creation of cyber command will entail a parallel hierarchical structure and being one of the most important stakeholders, it will be prudent to address the jurisdiction issues right at the beginning of policy implementation. The global debate on national security versus right to privacy and civil liberties is going on for long. Although, one of the objectives of this policy aims at safeguarding privacy of citizen data however, no specific strategy has been outlined to achieve this objective.

Google Glass

Google Glass is a wearable computer with an optical head-mounted display (OHMD) that is being developed by Google in the **Project Glass** research and development project, with a mission of producing a mass-market ubiquitous computer. Google Glass displays information in a smartphone-like hands-free format, that can communicate with the Internet via natural language voice commands.

While the frames do not currently have lenses fitted to them, Google is considering partnerships with sunglass retailers such as Ray-Ban or Warby Parker, and may also open retail stores to allow customers to try on the device. The Explorer Edition cannot be used by people who wear prescription glasses, but Google has confirmed that Glass will eventually work with frames and lenses that match the wearer's prescription; the glasses will be modular and therefore possibly attachable to normal prescription glasses. Glass is being developed by Google X, which has worked on other futuristic technologies such as driverless cars.

Google Glass applications are free applications built by third-party developers. Glass also uses many existing Google applications, such as Google Now, Google Maps, Google+, and Gmail.

Third-party applications announced at South by Southwest (SXSW) include Evernote, Skitch, The New York Times, and Path.

On April 15, 2013, Google released the Mirror API, allowing developers to start making apps for Glass. In the terms of service, it is stated that developers may not put ads in their apps or charge fees; a Google representative told The Verge that this might change in the future.
Many developers and companies have built applications for Glass, including news apps, facial recognition, photo manipulation, and sharing to social networks, such as Facebook and Twitter.

On May 16, 2013, Google announced the release of seven new apps, including reminders from Evernote, fashion news from *Elle*, and news alerts from CNN. Following Google's XE7 Glass Explorer Edition update in early July 2013, evidence of a "Glass Boutique", a store that will allow synchronization to Glass of Glassware and APKs, was noted.

Version XE8 made a debut for Google Glass on August 12, 2013. It brings an integrated video player with playback controls, the ability to post an update to Path, and lets users save notes to Evernote. Several other minute improvements include volume controls, improved voice recognition, and several new Google Now cards.

Concerns have been raised by various sources regarding the intrusion of privacy, and the etiquette and ethics of using the device in public and recording people without their permission. There is controversy that Google Glass would violate privacy rights due to security problems and others.

Privacy advocates are concerned that people wearing such eyewear may be able to identify strangers in public using facial recognition, or surreptitiously record and broadcast private conversations.

Concerns were also raised for the privacy and security of the Glass user in the event that the device is stolen or lost, an issue that was raised by a US congressional committee. As part of its response to the governmental committee, Google stated in early July that is working on a locking system and raised awareness of the ability of users to remotely reset Glass from the web interface in the event of loss.

Concerns have also been raised in regards to operating motor vehicles while wearing the device.

Under the Google Glass terms of service for the Glass Explorer pre-public release program, it specifically states, "you may not resell, loan, transfer, or give your device to any other person. If you resell, loan, transfer, or give your device to any other person without Google's authorization, Google reserves the right to deactivate the device, and neither you nor the unauthorized person using the device will be entitled to any refund, product support, or product warranty." *Wired* commented on this policy of a company claiming ownership of its product after it had been sold, saying: "Welcome to the New World, one in which companies are retaining control of their products even after consumers purchase them."

Autonomous Car

An **autonomous car**, also known as a **driverless car**, **self-driving car** or **robot car**, is an autonomous vehicle capable of fulfilling the human transportation capabilities of a traditional car. As an autonomous vehicle, it is capable of sensing its environment and navigating without human input.

Autonomous vehicles sense their surroundings with such techniques as radar, lidar, GPS, and computer vision. Advanced control systems interpret sensory information to identify appropriate navigation paths, as well as obstacles and relevant signage. Some autonomous vehicles update their maps based on sensory input, allowing the vehicles to keep track of their position even when conditions change or when they enter uncharted environments.

The **Google driverless car** is a project by Google that involves developing technology for autonomous cars. The software powering Google's cars is called Google Chauffeur.
An increase in the use of autonomous cars would make possible such benefits as:

- Fewer traffic collisions, due to an autonomous system's increased reliability and faster reaction time compared to human drivers.
- Increased roadway capacity and reduced traffic congestion (due to reduced need for safety gaps), and the ability to better manage traffic flow.
- Relief of vehicle occupants from driving and navigation chores.
- Higher speed limit for autonomous cars.
- Removal of constraints on occupants' state – in an autonomous car, it would not matter if the occupants were under age, over age, blind, distracted, intoxicated, or otherwise impaired.
- Alleviation of parking scarcity, as cars could drop off passengers, park far away where space is not scarce, and return as needed to pick up passengers.
- Elimination of redundant passengers – humans are not required to take the car anywhere, as the robotic car can drive independently to wherever it is required, such as to pick up passengers or to go in for maintenance. This would be especially relevant to trucks, taxis and car-sharing services.
- Increased practicality of local delivery services. Automatic vehicles could be dispatched from grocery stores, retailers, or other businesses in an efficiently networked system. Coupled with online or app-enabled ordering systems, traffic for daily errands could be reduced.
- Reduction of space required for vehicle parking.
- Reduction in the need for traffic police and vehicle insurance.
- Reduction of physical road signage – autonomous cars could receive necessary communication electronically (although physical signs may still be required for any human drivers).
- Improved fuel efficiency.
- Reduced air pollution as a result of less emissions and traffic congestion.

Challenges
In spite of the various benefits to increased vehicle automation, some foreseeable challenges persist:

- Liability for damage.
- Resistance for individuals to forfeit control of their cars.
- A car's computer could potentially be compromised, as could a communication system between cars.

Internet balloons and Project Loon

Project Loon is a research and development project being developed by Google with the mission of providing Internet access to rural and remote areas. The project uses high-altitude balloons placed in the stratosphere at an altitude of about 20 km (12 mi) to create an aerial wireless network with up to 3G-like speeds.

The balloons are manoeuvred by adjusting their altitude to float to a wind layer after identifying the wind layer with the desired speed and direction using wind data from the National Oceanic and Atmospheric Administration (NOAA). Users of the service connect to the balloon network using a special Internet antenna attached to their building. The signal travels through the balloon network from balloon to balloon, then to a ground-based station connected to an Internet service provider (ISP), then onto the global Internet. The system aims to bring Internet access to remote and rural areas poorly served by existing provisions, and to improve communication during natural disasters to affected regions.

The technology designed in the project could allow countries to avoid using expensive fibre cable that would have to be installed underground to allow users to connect to the Internet. Google feels this will greatly increase Internet usage in developing countries in regions such as Africa and Southeast Asia that can't afford to lay underground fibre cable. The high-altitude balloons fly twice as high as airplanes, but below the range of satellites. Each balloon provides Internet service in a 20 km (12 mi) radius covering an area of about 1,256 km^2.

Andamans, Lakshwadeep declared 'hope spots' by IUCN

Andaman and Nicobar Islands and Lakshadweep islands have recently been named as the new "hope spots" by the International Union for Conservation of Nature (IUCN) and Mission Blue, an organization involved in the study of oceans.

A hope spot is an area of an ocean that needs special protection because of its wildlife and significant underwater habitats.

The two group of islands, considered extremely rich in marine biodiversity, are the first places in India to have been added in the list of 50 global 'hope spots'. Earlier, 19 hope spots had been identified all around the world. The additional list of 31 new hope spots was released by IUCN and Mission Blue on October 23.

About 12 per cent of land around the world is under some form of protection (as national parks, world heritage sites, monuments) while less than one per cent of the oceans is protected. By identifying such hope spots, IUCN wants to "scale up the marine protection necessary for sustainable development of the ocean".

Andaman & Nicobar have 556 islets with unique flora and fauna. There are around 270 species and sub-species of birds in these two islands of which around 106 have been declared endemic. The Andaman Wood Pigeon, Andaman Padauk and Dugong have been declared the state bird, the state tree and the state animal respectively. There are about 96 wildlife sanctuaries, nine national parks and one biosphere reserve in the islands.

Out of total 4,947 sq km area of Andaman and Nicobar Islands, 1,510 sq km is protected under India's Wildlife Protection Act, 1972. There are 105 protected areas in the islands, of which about 100 are marine protected areas (MPAs). These cover more than 30 per cent of terrestrial areas of islands and protect more than 40 per cent of the available coastal habitats of the islands. However, in Lakshadweep group of islands, Pitti (0.01 square kilometer) is the only island that has MPA tag.

Indian firms most transparent in BRICS, Tata tops list

The anti-corruption watchdog Transparency International has admonished Chinese companies for their opaque business practices while praising relatively high standards of Indian firms, specially Tata Group firms, in a survey of emerging market multinationals. China got the lowest rating of the BRICS economies (Brazil, Russia, India, China and South Africa), whose companies made up three quarters of the total sample in the survey of 100 of the fastest-growing multinationals in 16 emerging economies.

Marked on how transparently they present measures to combat corruption, how they report on their organisations and how they disclose data like revenue, expenditure and taxes, three quarters of the companies scored less than five out of 10. Widespread shortcomings included the failure of about 60 per cent of all the companies surveyed to disclose information about their political contributions. Eight of the 10 worst-performing companies were Chinese, such as state-owned Chery Automobile Co Ltd, which along with Mexico's privately-owned consumer goods group Mabe scored zero points.

Transparency said Indian firms perform best in the BRICS with a result of 54 percent and several occupy the top positions in the overall index, attributing this to laws in India about how multinationals must report on subsidiaries.

Top of the class overall came India's Tata Communications Ltd, which also topped the anti-corruption programmes category with 92 percent, followed by three more Tata companies.
In a sub-index ranking just the BRICS nations, which the watchdog said account for 20 percent of global economic output and 15 percent of world trade, the companies from first-placed India were followed by South Africa, Russia, Brazil, then China.

There was an interesting side note disclosed by TI which read: "Transparency International has not undertaken to verify whether information disclosed on (company) websites or in (company) reports is complete or correct. In other words, if a company publishes what it refers to as 'a full list of its fully consolidated material subsidiaries' this has been accepted at face value and scored accordingly. In addition, it is beyond the scope of this research to judge levels of integrity in company practices."

Phailin v/s Uttarakhand disaster

Cyclone Phailin, India's fiercest storm in 14 years, smashed into the coastline of Andhra Pradesh and Odisha states over the weekend, flooded swathes of farmland and ripped apart tens of thousands of mud-and-thatch homes - but surprisingly, only 15 people have been reported dead.

Early warnings which started five days before the storm's arrival, the pre-positioning of food rations and packaged drinking water in shelters, and the orderly - and sometimes forceful - evacuation of close to one million people saved many lives, said aid workers. As Phailin approached, authorities cancelled the holidays of civil servants during the popular Hindu Dussehra festival, deployed disaster response teams with heavy equipment and positioned helicopters and boats for rescue and relief operations. Trains and flights were cancelled, roads barricaded and helplines and control rooms set up. Satellite phones and generators were dispatched to the heads of districts to ensure they remained in contact with the state capital. The army, navy and air force were put on standby, and power and telecoms companies were instructed to be ready to restore damaged infrastructure as soon as possible after the storm. Efforts to save people's livelihoods were also taken. Specific warnings were given to

fishermen not to venture out to sea and to put their boats in safe places, while farmers were advised to harvest their standing crops.

States like Odisha and Andhra Pradesh have since invested heavily in disaster risk reduction projects. Both states have their own disaster management departments and have built hundreds of cyclone shelters across the coast. Technological advances have been made with models that forecasters can use to accurately predict weather for seven days in advance. Humanitarian organisations such as the Indian Red Cross have also played an instrumental role - mobilising thousands of volunteers across the cyclone-prone region who are trained in first aid and can support evacuations and aid distributions. Drills are regularly organised so people know what to do when an alert is issued - locking up their homes, keeping their cattle in safe places and taking only a few clothes and important documents with them.

Around 76 percent of India's coastline is prone to cyclones and tsunamis, while 59 percent of the country is vulnerable to earthquakes, 10 percent to floods and river erosion, and 68 percent to droughts. But not all states in India are as prepared as Odisha and Andhra Pradesh, say disaster experts, adding that some have not even established disaster management departments or those that have, are not functioning.

Unprecedented rainfall in June wreaked havoc across the Himalayan state of Uttarakhand, causing rivers and glacier lakes to overflow and triggering massive landslides - a catastrophe that many termed a "Himalayan Tsunami". Almost 6,000 missing people are presumed dead, and the devastation has disrupted the lives of two million people - one-fifth of Uttarakhand's population. To be sure, the Odisha administration seems to have been more proactive than its counterpart in Uttarakhand, although the suddenness of the June disaster in the latter, as well as the state's mountainous terrain, have to be factored into this narrative. The failure of state authorities to act on early warnings given by the weather office and organise timely evacuations in the popular Hindu pilgrimage area were blamed for the staggering death toll. Its administrative ability to evacuate residents from the disaster zone was non-existent. For crucial days, it was the army that delivered all the essential services apart from the task of rescuing and ferrying residents to safety. The construction of hydroelectric dams, rampant deforestation and the spread of unregulated buildings along river banks worsened the impact, add environmentalists.

CBI by Ajay Mehra

Always in the eye of storm, Central Bureau of Investigation (CBI) is sitting atop an erupting volcano, as it were. Recently described as a 'caged parrot' by the Supreme Court of India, which CBI chief Ranjit Sinha endorsed, it is being criticised and condemned by people and politicians (those in opposition!) alike for being a willing tool to the party in power. It has been severely criticised for sharing its report on coal scam to the then law minister Ashwani Kumar, who has since resigned. Its investigation in the Isharat Jahan 'fake' encounter case has been questioned and its move to question a senior IPS officer with the Intelligence bureau for his involvement in the 'encounter' has drawn flak and invited sharp reactions from the IB Director.

Prominent politicians and leaders of opposition parties have put forward in the public domain their own framework for making the CBI autonomous. Lately, the Government of India and CBI, as directed by the Supreme Court of India, have filed affidavits regarding framework of autonomy. On 2 August 2013, the government reacted sharply against the framework proposed by the CBI affidavit. The next day, the CBI expressed its resolve to persist with the affidavit submitted. Clearly, there is a need to interrogate and demystify country's premier federal investigating agency in the popular domain in order to understand what autonomy means in the context of this premium agency of investigative policing and where the line should be drawn ensuring independence from political manipulation while keeping it accountable. Also, the emerging inter-agency tussle between the CBI and IB on the rule of law and designated function deserves a considered intervention from the government.

Origin, Institutionalisation and Augmentation

The origin of CBI is in the Delhi Special Police Establishment (DSPE) Act, 1946, which retained the DPSE set up in 1941 by the Government of India to investigate cases of bribery and corruption in transactions within the War & Supply Department during the World War II. The agency proved useful and was retained to investigate cases of bribery and corruption by the Central Government employees after the war. Khan Bahadur Qurban Ali Khan, IP, was the first chief of the DSPE, who after partition became instrumental in setting up Pakistan's Internal Services Intelligence Agency! CBI got the current name through a resolution of the Ministry of Home Affairs in April in 1963 and gradually its mandate was extended in 1965 to include Public Sector employees and in 1969 to include the Public Sector Banks.

Though an agency of special policing, unlike other Central Police Organisations, the CBI has been put under the Department of Personnel of Training (DoPT) along with the Central Vigilance Commission (CVC). This is perhaps because its main mandate is not investigative policing per se, which it can be (and is) entrusted with in its extended mandate from time to time, but cases dealing with corruption referred to it or it can act against suo motu under the law.

At the eye of controversy today, as well as critical to the functioning of this crucial institution of special policing against corruption, is the person who heads it – the Director. The Indian Police Service (IPS), the successor of the British Indian (Imperial) Police (IP), is the core organisational unit that keeps the wheels of the CBI going. The Director of the CBI is currently appointed by the Government of India on the recommendation of a committee consisting of (i) the Central Vigilance Commissioner, who chairs the committee; (ii)

Vigilance Commissioners; (iii) Union Home Secretary; (iv) Secretary (Coordination and Public Grievances) in the Cabinet Secretariat. There are two levels of investigative cadres with the CBI.

Nearly two-thirds of its cadre is drawn from the IPS through a two track process; the CBI requisitions certain officers for deputation (with their consent) and an officer too may seek to go to the CBI. Only following a rigorous organisational scrutiny that the CBI reportedly gives its nod. In the process, recommendations made on political grounds in the past have been turned down. Indeed, some such persons still get in, understandably causing controversy. Nearly one-third of the cadre at the apex comes through promotions from within. There is a proposal to offer half of these positions to the CBI recruits with a rigorous process of promotion. The CBI recruits directly upto the level of Sub Inspector and trains the cadre. The best among them have avenues of promotion upto the level of Deputy Inspector General.

Functioning

CBI's powers to investigate cases of corruption are derived from the DPSE Act, 1946, as amended from time to time. Gradually, its mandate has enlarged to investigate criminal cases beyond corruption, but it continues to remain the premium agency to investigate cases of corruption. Section 5 of the Act gives the officers of the CBI powers of Officer-in-Charge of a police station in the area (state and city) they work. Similarly, section 6 of the DPSE Act further reinforces these powers – officers of the CBI do not need permission of a state (Union Territory) government to carry out investigative work within their territory. Section 6 of the Act also gives the CBI powers to act suo motu in cases of graft against all employees of the central government, Public Sector Undertaking and Public Sector Banks under Prevention of Corruption Act, 1988. However, permission of the government is needed to initiate a case against officers above the rank of Joint Secretary, unless caught red handed.

Central Vigilance Commission recommends entrusting investigations of the following type of cases as a general rule to the Central Bureau of Investigation. allegations involving offences punishable under law which the Delhi Special Police Establishment are authorised to nvestigate, such as offences involving bribery, corruption, forgery, cheating, criminal breach of trust, falsification of records, etc.; possession of assets disproportionate to known sources of income; cases in which the allegations are such that their truth cannot be ascertained without making inquiries from non-official persons or those involving examination of non-Government records, books of accounts etc.; and other cases of a complicated nature requiring expert police investigation.

Cases for investigation may also be referred to it by a constitutional court and a state governments relating to issues mentioned above. However, we witness more heat and controversy on cases of corruption, scams and disproportionate assets involving political leaders. There have been complaints of manipulation in some such cases at the top, bringing charges of political manipulation against the CBI.

The processes of investigation followed by the CBI are like any other police organisation. Obviously, judicial processes too are the same. Once a case is registered and investigation begins, its proceedings could legally be shared only in the internal hierarchy and on completion with the court where the case is sub judice, not with any other executive or political authority. The uproar and concern over sharing (and vetting!) of the coal scam report with the Union Law Minister was therefore absolutely genuine. That the then Law

Minister asked for the report of investigation to be submitted to the court is only one part of the story, that the CBI shared it without resistance speaks tons about its deinstitutionalisation. We can guess what must be happening in police departments day in and day out whenever political big wigs are in the net. We must not also discount possibilities of CBI officers acting like ordinary police persons in other cases too, for once the institutional fabric of an organisation is disturbed, anomalies crop up at different levels even under normal circumstances influenced by personal biases. Thus, if the government controls, or influences appointment of lawyers and prosecutors for the CBI, the chances of manipulation in courts too become strong, if not by the CBI, by the political executive, though the flak invariably is faced by the CBI.

The Autonomy Discourse

There are four key issues in the autonomy discourse of the CBI. First, appointment of the Director. Second, allocation of its budget. Third, appointment of panel of lawyers and prosecutors. Finally, oversight mechanism for ensuring accountability in CBI's functioning. The apex court as well as other political and subject analysts have made suggestions to change the current selection process of the CBI Director. In the mean time, both the Government of India and the CBI have submitted their affidavits with their proposals for change and, as reported, the latter's proposals have invited ire of the government.

The Government of India has proposed that the CBI Director be selected by a committee chaired by the Prime Minister and consisting of the Leader of the Opposition in the Lok Sabha as well as the Chief Justice of India, or a Supreme Court judge nominated by him and be appointed for two years. The CBI has agreed with the selection process, but added caveats: i) 'the view of the outgoing Director should be taken' (this is there in the DPSE Act too); ii) 'chosen for his experience, primarily in the investigation of anti-corruption cases' and iii) 'experience and working in CBI at supervisory level, should be an essential criteria'. The CBI has proposed three year tenure for the Director, which the government has vehemently opposed. The approach to suspension on administrative ground too is different. The government proposes that on the recommendation of the CVC the President of India may take the action, the CBI would like it to go back to the committee of appointment. The CBI also proposes to vest the Director with powers to recruit Superintendents of Police (SP); currently (s)he is empowered to recruit only up to Inspectors.

The autonomy discourse gets intense between the government and CBI on financial powers. Currently, CBI's budget comes from DoPT, which approves and sanctions its financial requirements and mostly applies cuts on proposals, making the CBI grumble. The CBI proposes that the Director be elevated to the rank of Secretary to the Government of India, reporting to the Minister without going through the DoPT and budget for the organisation be separately put up through the Minister to the Department of Expenditure. This also shifts the accountability of the Director directly to the Minister, making him independent of the Ministry as far as investigation is concerned. The affidavit reiterates, 'A Director, CBI who is dependent on Ministry for routine administrative and financial approvals is not best placed to take independent and objective decisions in crunch situations.' Obviously, the government does not agree with this.

The government has proposed a new Accountability Commission consisting of retired judges of the Supreme Court or High Court and the CVC to look into complaints against the CBI, which thinks it would disturb the established chain of command. It has stressed the established process in which the CVC has a prominent role and its own established

mechanisms with a Joint Director as CVO is a robust mechanism, which should not be disturbed.

The contentious affidavits of the government and the CBI indicate differences of perception and approach that would not be easy to resolve. Interestingly, even before the two affidavits were submitted, on the invitation of a Rajya Sabha Select Committee, a BJP team consisting of Arun Jaitley, Rajiv Pratap Rudy and Bhupender Yadav suggested that the CBI should have independent investigating and prosecution wings under the Director, who should be appointed by a collegium comprising of the Prime Minister, Leader of the Opposition in Lok Sabha and Chairman of Lokpal for a fixed term. The Lokpal should also have the power of oversight, who should be consulted in case an investigating officer has to be transferred. The panel of advocates appearing for the CBI should be independent of the government.

Looking Ahead

Corruption is a touchy political issue anywhere, more particularly in India. Naturally, any anti-corruption agency in India would be equally, if not more, contentious. Let us look at the debate on Lokayukta and Lokpal, more particularly in recent years. The use of police powers of the state in the country by the political executive too has been becoming both brazen and covetous. An institution of special investigating policing tasked with anti-corruption powers such as CBI is more prone to be used avariciously and no party is beyond the pale of doubt in this.

Autonomy for the CBI thus has to be pitched at the level of constitutional responsibility being assigned to the institution with safeguards for encroachment and misuse. The appointment of the Director as proposed appears sound. The nitty gritty of administrative issues mentioned in the two affidavits are matters of detail that must be sorted out with an expert committee. Financial independence with inbuilt accountability structures of existing institutions would go a long way in ensuring autonomy of the CBI. Creating an Accountability Commission over and above existing oversight mechanism would only overburden the system. CVC should indeed be made more robust and be part of the oversight mechanism in this case too. Indeed, as and when India is able to sort out the structure of its ombudsman, the Lokpal, it must also become part of the accountability structure.

The CBI's move to question IB Special Director Rajinder Kumar has come under sharp criticism and protest from the IB, the Director Asif Ibrahim himself writing to the government against this. Though the facts relating to this inter-agency tussle is unlikely to come out clearly in the public domain, the broad issues of different roles performed by the two agencies that at times may have run in with the law deserves attention. The CBI is an investigative agency that would look at a case within the framework of civil or criminal law, as the case may be. The IB is an intelligence agency that at times has unstated mandate, which must not catch the eye of the law. However, since the IB too draws its officers from the IPS and in a case such as Isharat Jahan 'encounter' smudging of role could lead to unsavoury situation, which can only be dealt with if there is an immunity of the CIA kind in the line of duty.

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Issues that dominated EU Summit: October 2013

EU leaders focused in their Brussels summit on migrant deaths in the Mediterranean and banking union on their agenda. Overshadowing the summit are claims of US spying on the cell phone of German Chancellor Angela Merkel.

Leaders of the 28-member European Union met to debate the issue of migration, facing demands to deliver reform to end boat refugee deaths.

Allegations that the US had tapped Chancellor Merkel's mobile phone were also a major focus on day two of the summit.
Italy and Malta, which have been confronted with a number of recent boat refugee incidents along Europe's outer border pressed for a coordinated response from all EU nations.

Italian Prime Minister Enrico Letta said the capsize deaths of 366 people off Italy's island of Lampedusa on October 3 "cannot repeat itself."

Lampedusa had become a "symbol of a European migration policy which has turned the Mediterranean into a graveyard."

Some politicians want the EU to change is so-called Dublin rules, which force asylum-seekers to first enter the bloc's territory before being able to submit an application.

Reform ideas include the setting up of legal EU migration corridors that would put people traffickers out of business.

Foot-dragging on banking union
An ambitious timetable for banking union within the eurozone was also on the summit agenda, amid signs of integration fatigue.

Doubts were emerging over more transfers of power from the national to pan-European level after five eurozone bailouts over the past three years to member states including Greece and Cyprus.

This reluctance was compounded by fears that anti-European parties could gain ground in next year's European Parliament election.

EU leaders were angry over widespread US spying on its allies' communications by its National Security Agency (NSA).

European Council President Hermann Van Rompuy invited other EU members to join Germany and France in seeking "before the end of the year" a trust-based "understanding" with the US on intelligence gathering.

Merkel had said "trust between partners" needed to be "re-established."

Cabinet clears the Drugs and Cosmetics Bill, 2013

Cabinet has approved changes to the Act regulating drugs and cosmetics. The proposed Drugs and Cosmetics Bill, 2013 seeks to replace the Drugs and Cosmetics Act, 1940 and covers various aspects of drugs and cosmetics, and regulates clinical trials and medical equipment.

Key features of the Bill are:

- Licenses for manufacturing drugs under 17 key categories will be given only by the centre through the Central Drugs Standard Control Organisation (CDSCO) and not by states.
- A Central Drugs Authority will be set up to act as an appellate body for central and state drug controllers. The Authority will have the power to review, suspend or cancel licenses granted by the central and state drug authorities.
- The Bill creates provisions for the grant of compensation in the case of death or injury to the individual participating in a clinical trial. According to news reports, the health ministry has amended guidelines for compensation of participants in trials that go wrong.

WTO and peace clause

India's food security law offers inexpensive food to 67% of the population. It means, the food subsidy will increase to levels that the WTO disallows.

Knowing that India's defiance of the WTO rules on food security/stocking can derail the outcome of the forthcoming WTO Ministerial to be held at Bali in the first week of December, the WTO Chief Roberto Azevedo asked India to consider 'Peace Clause' as an option to protect subsidies under the proposed National Food Security Act.

Negotiations for a deal at the Bali meet are held up over the tenure of an interim resolution on the demand by G-33 developing countries on food security. While the G-33 is demanding the tenure of the peace clause to be 10 years, developed countries such as US are ready to accept only a 2-3 year period.

The Peace Clause provided exemption for those countries who used export subsidies for agriculture beyond the permissible limit. These countries could not be challenged before the dispute panel during the 'Peace Clause' period. It expired in 2003.

The Azavedo solution will now threaten millions of hungry and also threatens the livelihood security of millions of small farmers who receive an assured minimum support price for their crop produce. As per the *de-minimis* criteria, Article 6.4 (b) of the Agreement on Agriculture provides for total support not to exceed 10 per cent of the total value of production for most developing members (except for China, where it is 8.5 per cent as part of its accession commitments). The limit is irrational as the cost of production has risen dramatically and the need for subsidy also grows proportionately.

Indian negotiators are saying that an increase in *de-minimis* criteria from 10 to 15 per cent could be the possible solution. But India is under tremendous pressure from US/EU to either do away with the commitments of ensuring food security to 67 per cent of the population or agree to a Peace Clause that allows the issue to be deferred by another 2-3 years. By that time, US would have managed to push through an agreement on trade facilitation that primarily benefits its own industry.

The best solution would be to change the reference year from 1986-88 to somewhere more closer, especially after 2007 Now this is where India needs to exert pressure rather than accepting the Peace Clause as a solution.

Meanwhile, agricultural subsidies in the developed countries have risen to $ 406 billion in 2011.

Exemption from consent of gram sabha for linear projects in forest land

The Ministry of Environment and Forests (MoEF) has recently exempted certain infrastructure projects, where linear diversion of forest land is involved, from the requirement of obtaining consent of the gram sabha. This exemption will not apply if the recognised rights of Primitive Tribal Groups and Pre-Agricultural Communities are being affected. Linear projects involve the diversion of forest land for the construction of roads, canals, laying of pipelines, optical fibres and transmission lines. □Presently, any diversion of forest land for non forest use, including linear diversions, requires the prior approval of the Forest Advisory Committee (FAC) and the central government. A letter of consent from the gram sabha stating that claims have been settled and the Forest Rights Act (FRA) has been complied with is to be submitted to the FAC. The Rules under the FRA, mandate that the gram sabha of the area has to pass a resolution (with a 50% quorum) consenting to the proposed diversion of forest land for non-forest use.

Haswell

It is the codename for a processor microarchitecture developed by Intel as the successor to the Ivy Bridge architecture. It uses the 22 nm process. Intel officially announced CPUs with this microarchitecture in June 2013 .

Housing ministry releases draft model policy on affordable housing

The Ministry of Housing and Urban Poverty Alleviation (MoHUPA) has released a Draft Model State Affordable Housing Policy to promote affordable housing for all with special emphasis on Economically Weaker Sections (EWS) and Lower Income Groups (LIG).Since housing is a state subject under the Constitution, the central government has released the draft policy as a Model policy which states can adopt.

Background: The gap between the supply and demand of housing has been widening. According to the report of the Technical Group on Housing Shortage (2012-17), constituted bythe Ministry, there is a shortage of close to 19 million dwelling units, of which nearly 96%

is in the EWS and LIG category. The policy seeks to address this gap and encourage private participation in the housing industry.

Key features of the Policy include:

Applicability: The policy is applicable to areas that have been identified as municipal areas by state governments.

Role of the central government: The central government is expected to support the policy through: (i) the provision of capital grants for affordable housing schemes, (ii) ensuring greater access to capital through external sources such like External Commercial Borrowings and Foreign Direct Investment and, (iii) encouraging the development of new avenues for financing of affordable housing through insurance and pension funds.

Role of the state governments: State governments are to undertake initiatives in key areas such as:

a. **Land**: through reserving a certain percentage of the total dwelling units for EWS, provision of land for affordable housing projects, providing certain property rights to slum dwellers and ensuring slum up-gradation.
b. **Finance**: through providing financial incentives to housing providers for reducing the cost of dwelling units. This includes providing appropriate subsidies, facilitating access to loans under the Rajiv Rinn Yojana, establishing 'State Shelter Funds' to fund affordable housing projects, linking beneficiaries to formal lending institutes and granting certain concessions to private developers through waiver of stamp duty or charging a nominal stamp duty on affordable housing projects, etc.
c. **Legal and Regulatory Reforms**: include preparing an affordable housing action plan, establishing a faster process for getting building permits, creating institutional mechanisms to facilitate faster conversion of agricultural land to non agricultural land and reviewing existing master plans of cities to ensure land for affordable housing; and
d. **Technology support**: through providing support for appropriate building and construction technologies.

The RRY is a central sector scheme which provides an interest subsidy on housing loans to EWS and LIG households. It replaces the Interest Subsidy Scheme for Housing the Urban Poor (ISHUP).

Background: The ISHUP was launched in 2008 to enable the urban poor to access long term institutional finance for housing. It provided a subsidy on the interest charged on housing loans to EWS (monthly income up to Rs 5,000) and LIG households (monthly income from Rs 5,001 to Rs 10,000). An interest subsidy of 5% was provided on loans up to Rs 1 lakh. In 2011, the scheme was made a part of the Rajiv Awas Yojana, a centrally sponsored scheme which seeks to eradicate slums. Earlier this year, the scheme was re-launched as a central sector scheme and renamed Rajiv Rinn Yojana.

Unlike the ISHUP, under RRY, EWS households are identified as those with monthly incomes of less than Rs 3,300 per month and LIG households are those with monthly

incomes between Rs 3,301 and Rs 7,300 per month.

The central nodal agencies for the scheme are the Housing and Urban Development Corporation Limited (HUDCO) and the National Housing Bank (NHB).

RRY

With banks and housing finance companies agreeing to disburse more funds as loans under the subsidised loan scheme — the Rajiv Rinn Yojana (RRY) — the Housing and Urban Poverty Alleviation Ministry (HUPA) will soon write to States to determine their targets for the scheme's implementation. Under the RRY, loans are offered to the economically weaker sections (EWS) on subsidised interest rates for a 15-year tenure for buying houses.

According to the statistics provided by the Ministry, India's urban housing shortage is 18.78 million for the next five-year plan, from 2012 to 2017, of which 96 per cent is in the EWS and lower-income group (LIG) categories. Shortage for the EWS stands at almost 11 million homes or 56.2 per cent, while that for LIG is at 7.41 million homes or 39.5 per cent.

The loan amount has been increased to Rs. 5 lakh for the EWS and a maximum loan amount of Rs. 8 lakh for a LIG house will be admissible. Nearly, 54 banks and HFCs have shown interest and agreed to fund the scheme, which will give a fillip to housing for the EWS.
The Ministry has set a target of around a million households through the RRY over a period of four years with an estimated outgo of Rs. 45-50,000 crore.

The scheme will offer an interest subsidy for a maximum amount of Rs. 5 lakh for an EWS individual for a house spread over at least 21 square metres. In the LIG category, the subsidy on interest will be up to Rs. 5 lakh,.

Additive process of printing

3D printers are used for rapid prototyping which involves sending a Computer Aided Design (CAD) to the printer that is then sliced by a program and printed using a material layer by layer until the full shape is formed.

Rapid prototyping does not reproduce models with the same quality and consistency as conventional prototyping methods. This might not be the case in the future as more and more industries and sectors are adopting this technology and more R&D is being performed on various technologies in 3D printing. Also for industries that are design conscious and have time constraints 3D printing is a better choice.

3D printing uses additive printing technology to print objects in 3D. The printer prints 3D models by adding materials like metals, plastics or polymers layer by layer over each other until the required 3 dimensional shape is formed. The printers can print with a precision of 0.1 mm or more, giving the technology to print precise designs with accuracy.

3D printing has already been adopted by industries like aerospace, healthcare, automobile,

defense and Hollywood. There is also a growing consumer market for home based 3D printers.

Cabinet clears Real Estate (Regulation and Development) Bill

The Real Estate (Regulation and Development) Bill, 2013 was approved by the Cabinet on June 4, 2013. The proposed Bill will apply to residential real estate i.e. housing, and any other independent use ancillary to housing.

According to the Ministry, the Bill provides a uniform regulatory mechanism to ensure growth of the real estate sector while protecting consumer interests and ensuring timely adjudication of disputes.

The Bill does the following:

- Establishes a Real Estate Regulatory Authority in each state/union territory. The functions and powers of the authority include oversight of real estate projects and transactions, appointing adjudicating officers to settle disputes, and imposing penalties. The Authority will also advise the government on ensuring the growth of a transparent, efficient, and competitive real estate sector.
- Specifies the functions and duties of the promoter, real estate agents and rights and duties of allottees.
- Requires real estate projects and agents who intend to sell any immovable property to mandatorily register with the Authority.
- Specifies mandatory public disclosurenorms for all registered projects including: details of the promoters, project, layout plan, carpet area and number of the apartments booked, and information regarding veracity of advertisements for sale.
- Makes it mandatory for the promoters to deposit 70% or less of the amount realised from the allottees for the real estate project, into a separate account to be maintained in a scheduled bank. This amount has to be deposited within a period of 15 days and has to be used only for the purpose of funding the cost of construction.
- Establishes a fast track dispute resolution mechanism for settlement of disputes, through adjudicating officers appointed by the Authority. Also sets up an Appellate Tribunal to hear appeals from the orders of the Authority and the adjudicating officer.
- Creates a Central Advisory Council (with representatives of state governments) to advise the central government on matters concerning implementation of the Act.

Cabinet approves extension of Rashtriya Swasthya Bima Yojana to other groups

On June 4, 2013 the Cabinet approved the extension of the Rashtriya Swasthya Bima Yojana (RSBY) to rickshaw pullers, rag pickers, mine workers, sanitation workers, auto rickshaw, and taxi drivers. Implemented by the Ministry of Labour and Employment, the RSBY was launched in 2007-08 with the objective of providing a health insurance cover of Rs 30,000 per year to Below Poverty Line (BPL) families in the unorganised sector. Currently the RSBY covers street vendors, beedi workers, domestic workers, building and other construction workers, and MGNREGA workers who have worked more than 15 days during the previous year. The scheme is implemented through a smart card based system. As of March 2013 more than 3.44 crore BPL families are enrolled under the scheme.

Street Vendors Bill, 2012 passed by Lok Sabha

The Street Vendors (Protection of Livelihood and Regulation of Street Vending) Bill, 2012 (the Bill) was passed by the Lok Sabha on September 6, 2013.The Bill seeks to protect livelihood rights of street vendors and regulate street vending.

Key provisions of the Bill, as passed by Lok Sabha, include:

Town Vending Committee (TVC): A TVC will be established in each local authority (Municipal Corporation, Municipal Council or Nagar Panchayat) and will be responsible for the implementation of the Bill. It shall consist of representatives of the government, non-governmental organisation and street vendors. 40% of the members shall be representatives of street vendors and one- third of the members representing street vendors shall be women. Key responsibilities of the TVC include: (a) surveying street vendors (d) issuing and revoking certificates of vending.

Key responsibilities of the TVC in conjunction with the local authority include: (a) preparation of the street vending plan, (b) relocation of street vendors, (c) determining the number of street vendors who can be accommodated in any street vending zone, and (d) determining which areas shall be for the specific use of street vendors.

Survey of street vendors: The TVC shall conduct a survey of existing street vendors in its area and issue a certificate of vending to them. In case the number of street vendors identified is more than the holding capacity (i.e. street vendors should not comprise more than 2.5% of the population of that area) of the vending zone, the TVC shall carry out a draw of lots for issuing vending certificates and the remaining persons shall be accommodated in adjoining vending zones.

Relocation of street vendors: Relocation shall be avoided as far as possible and no street vendor shall be relocated without being given 30 days notice. If street vendors fail to relocate, the local authority may seize the goods and they shall be liable to pay a fine of up to Rs 250 per day. However, the amount of the fine shall not be more than the value of the goods seized. Affected vendors or their representatives will be responsible for the planning and implementation of rehabilitation.

Plan for street vending: The local authority shall prepare a plan every five years in consultation with the planning authority and TVC. It should accommodate all identified street vendors (i.e. they should not comprise more than 2.5% of the population of the area). It can differentiate between restriction-free- vending zones, restricted-vending zones and no-vending zones. The Bill specifies the principles on which declaration of no-vending zones shall be done under the plan for street vending.

Scheme for street vendors: A scheme shall be framed within six months of the commencement of the Act for the purposes of implementing the Act.

3D Printing

Current application of 3D printing: Discussed in the earlier notes

Healthcare & 3D printing

Doctors have been using 3D printers to develop prosthetics for reconstructive surgeries recently. Due to the precise nature of this technology, intricate prosthetics are able to be designed.

Future application of 3D printing

Bio Printing

An upcoming application of 3D printing technology in the healthcare segment called Bio Printing involves the printing of tissues with cells. With this new development we will be able to print organs and other body parts for transplant or repair. The printing material will be a bio ink which is made up of a biodegradable ink along with the human cells. The bio ink will be applied onto a scaffolding like structure which will be 3D printed from a scan of the organ to be repaired, like a ear, kidney or a finger. Once the bio ink sets onto the scaffolding the structure will dissolve or fall off on its own, leaving behind the printed organ. A huge advantage of this methods is that, organ rejection will be reduced as the cells used in the bio ink will be off the patients themselves. Currently this technology is in pre-clinical phase.

Concrete Printing

Concrete printing is a type of extrusion based additive printing process capable of producing full scale construction and architectural components. A cement based mortar is used to model an object using a controlled extrusion process. Large structures such as panels and walls can be produced with precise design customizations. Engineers hope to build a house in 20 hours time using this process in the future.

3D printing is achieved using an ***additive process***, where successive layers of material are laid down in different shapes. 3D printing is also considered distinct from traditional machining techniques, which mostly rely on the removal of material by methods such as cutting or drilling (***subtractive*** processes).

A number of additive processes are now available. They differ in the way layers are deposited to create parts and in the materials that can be used. Some methods melt or soften material to produce the layers, e.g. selective laser melting (SLM) or direct metal laser sintering (DMLS), selective laser sintering (SLS), fused deposition modeling (FDM), while others cure liquid materials using different sophisticated technologies, e.g. stereolithography (SLA). With laminated object manufacturing (LOM), thin layers are cut to shape and joined together (e.g. paper, polymer, metal). Each method has its own advantages and drawbacks, and some companies consequently offer a choice between powder and polymer for the material from which the object is built.

Cabinet clears the Mental Health Bill According to news reports, the Cabinet has approved the Mental Health Care Bill, 2013. This Bill aims to give individuals the right to access

mental health care. The Bill repeals the Mental Health Act, 1987.

Key features of the Bill are:

- A mentally-ill patient has the right to decide their mode of treatment. A person can issue an advance directive that states how he should be treated in the event of a mental health situation. If the person has stated in the directive that he should not be admitted to a facility, he cannot be admitted without consent.
- A person with mental illness can appoint a nominated representative to take decisions for him.
- Central and State Mental Health Authorities are set up as administrative bodies. The Mental Health Review Commission will be a quasi-judicial body to oversee the functioning of mental health facilities and protect the rights of persons with mental illness.
- Suicide for mentally-ill persons has been decriminalised and electric-convulsive therapy without anaesthesia has been banned.
- Long term care in a mental health institution is to be used in exceptional cases.
- The government has to provide half way homes, community caring centres and other shelters for mentally ill people.

Black carbon and climate change

The government has launched an initiative to study the phenomenon of black carbon, commonly known as soot. Black carbon is a form of particulate air pollution, produced from incomplete combustion from biomass burning, cooking with solid fuels, and diesel exhaust.

Over the last few years there has been a concerted effort to address the impact of black carbon emissions on global warming. However, the knowledge and understanding about black carbon is incomplete and uncertain. The Black Carbon Research Initiative, under the aegis of the Indian Network of Climate Change Assessment, is an attempt to address these gaps in knowledge and answer the crucial question of its impact on climate change.

The initiative comes as focus shifts to consider the contribution of non-green house gas emissions like black carbon to global warming. There is a growing understanding that addressing black carbon emissions could help reduce the rate of global warming.

As the lifetime of black carbon in the atmosphere is short, from a few days to weeks, it is felt that reducing its emissions would give more immediate tangible results than those achieved by reduction of carbon dioxide emissions, which have an atmospheric lifetime of more than 100 years.

The Black Carbon Research Initiative is five-year research programme at a cost of 200 crore. It is the joint effort of the ministries of environment, earth sciences, science and technology and ISRO. The initiative, which will involve 101 institutions, will build on the existing aerosol study network.

For India, finding answers to the black carbon phenomenon is important. The need to understand the phenomenon of black carbon comes especially as some estimates suggest that India and China account for 25-35% of global black carbon emissions. The initiative sets out

the science programme to respond to the scientific questions surrounding black carbon.
"We need to be proactive in our approach. This is an important step forward, not just for India but for the international community," environment minister Jairam Ramesh said. The initiative is part of India's efforts to build its scientific capacity to better understand climate change and its impacts.

"This is one of the most ambitious programmes in the world on aerosol research and black carbon. Today is a culmination of over 25 years of research from pioneering Indian scientists. India has positioned itself to be second to none in this area of research. Decades from now this programme will be recognised as giving India protection from natural and manmade disasters alike," the world's leading expert on black carbon, V Ramanathan, said.

The initiative will undertake a detailed study on the contribution of black carbon to regional warming, effect on cloud formation and monsoons, and its role in the retreat of the Himalayan glacier. The research will also attempt to map and understand the variation in black carbon formation depending on location, height and time of day.

For the minister the most significant aspect was the link with glaciers. "There are many quacks in glacier science. Some of them have been exposed. There is complete difference in behaviour of Himalayan glaciers and arctic glaciers which need to be studied and need to establish our own scientific capacity to understand this change," Ramesh said.

New health scheme called Rashtriya Bal Swasthya Karyakram launched
On February 6, the government launched a new health initiative called the Rashtriya Bal Swasthya Karyakram under the National Rural Health Mission.

The initiative seeks to provide comprehensive health care and improve the quality of life of children below 18 years by early detection of birth defects, diseases, deficiencies and development delays. It seeks to cover 30 common health conditions prevalent in children for early detection and free intervention and treatment. There will be provisions for child health screening services through dedicated mobile health teams placed in every block. The teams will screen children in the age group of 0 to 6 years at anganwadi centres and all children enrolled in government and aided schools. It aims to eventually cover around 270 million children across the country.

Afghan Parliament

Afghan President Hamid Karzai on Wednesday issued a historic legislative decree reserving a special seat for Sikh and Hindu Afghan nationals in the Lower House of Parliament.
A seat in the Wolesi Jirga has been designated for them, according to a statement from the office of the President.

The National Assembly of Afghanistan is a bicameral body, comprising two chambers, Wolesi Jirga with 249 seats and Meshrano Jirga or the Upper House with 102 seats.

With the designated seat, the Lower House will now have 250 members.
Mr. Karzai's decision has come after lawmakers declined to reserve a special seat for Hindus and Sikhs through law.

The Afghan President has the power to issue legislative decrees when the Parliament is on vacation.

Supreme Court order on CIC/SIC

Court admits it committed a "mistake of law" by directing only sitting or retired High Court Chief Justices or an apex court judge could head the central and State information commissions

The Supreme Court on Tuesday recalled its judgment on Right to Information Act holding that only retired judges or those having law qualification could be appointed as Information Commissioners at the Central Information Commission and at the State level Information Commissions across the country.

A Bench of Justices A.K. Patnaik and A.K. Sikri in its order said "As the judgment under review suffers from mistake of law, we allow the Review Petitions, recall the directions and declarations in the judgment under review."

In its judgment of September 13, 2012 the Bench had held that for effectively performing the functions and exercising the powers of the Information Commission, "there is a requirement of a judicial mind and therefore persons eligible for appointment should preferably have judicial background and possess judicial acumen and experience."

The apex court said that the CIC and SIC function as quasi judicial bodies and so need to be headed by ex-judges of the higher judiciary. It said: "We are of the considered view that the competent authority should prefer a person who is or has been a Judge of the High Court for appointments as Information Commissioners. Chief Information Commissioner at the Centre or the State shall only be a person who is or has been a Chief Justice of the High Court or a Judge of the Supreme Court of India," the apex court bench said.

"The appointment of judicial members to any of these posts shall be made 'in consultation' with the Chief Justice of India and Chief Justices of the High Courts of the respective states, as the case may be," the apex court bench added.

Standing Committee submits report on issues related to paid news

The Standing Committee on Information Technology presented its report on the "Issues Related to Paid News" in the Lok Sabha on May 6, 2013. The Standing Committee report dealt with the definition and identification of paid news, reasons for its proliferation, its implication on the electoral process and existing mechanisms to deal with the problem. While

agreeing that media should be free from state control, the Committee urged the Ministry of Information and Broadcasting (MoIB) and other stakeholders to strengthen oversight and redressal mechanisms. Key observations and recommendations made by the Committee are:
The Press Council of India (PCI) defines paid news as any news or analysis in print or electronic media for a consideration in cash or kind. The Committee recommended that the MoIB formulate a comprehensive legal definition of „paid news. It also asked the MoIB to suggest measures for usage of „circumstantial evidence in proving incidence of paid news.

- The Committee identified corporatisation of media, desegregation of ownership and editorial roles, emergence of contract employment and poor wage levels of journalists as key reasons for the rise in incidence of paid news.
- It recommended mandatory disclosure of „private treaties" and details of advertising revenue received by the media houses. It also recommended that the MoIB ensure periodic review of editor/journalist independence and wage conditions.
- The Committee found existing regulators like the PCI and Electronic Media Monitoring Centre to be ineffective in countering the prevalence of paid news. It described the self-regulatory industry bodies like the News Broadcasting Standards Authority and Broadcasting Content Complaints Council as an „eye wash".
- The Committee recommended establishment of either a single regulatory body for both print and electronic media or enhancing the punitive powers of the PCI and setting-up a similar statutory body for the electronic media. Such regulator(s) should have the power to take strong action against offenders and should not include media owners.
- The Committee observed that existing penal provisions have not served as an effective deterrent for the practice of paid news and stricter penal provisions are needed. It endorsed the proposal by the Election Commission of India to amend the Representation of the People Act, 1951 to include paid news in electoral setting as a corrupt practice and also include publishing of paid news as an electoral offence.

Census and towns and India's urbanization

The 2011 Census has established that a substantial part of additional urbanisation is in what are called 'census towns'. This phenomenon was there earlier, but was not recognised as urbanisation as it is in the 2011 Census. In 2006, our SK Dey Centenary Memorial published lecture established that there were what we called 'large villages', which met the Census criteria of towns but were not classified as urban areas by the Government and, at that time, even in the Census (now they are called census towns). This led to a pessimistic perception of urbanisation. We argued then that a part of this pessimistic perception may arise from settlements which are 'urban' by Census definitions not being classified as 'urban'. While the absolute differences on this account may be small, since population projections use first difference methods, 'small' absolute differences can lead to 'large' first differences and may affect the projections seriously. For Gujarat, if a proper classification is made of the 'villages' that were not rural according to the Census definition, but were not classified as towns, the first difference doubles. Thus, the rate of change in urbanisation would be twice that currently planned for, which is a serious matter.

The original work was 'rediscovered' in the 2011 Census. In Gujarat, the 2006 projections have turned out to be accurate for 2011. We also show the magnitudes in an agriculturally-

advanced state, namely Punjab, to contrast with industrially-advanced Gujarat. These magnitudes are also discussed in a relatively backward state, namely Bihar. Policymakers have been forced to recognise this phenomenon for 2011 but are still resisting its implications for the future, which is a terrible mistake.

In my lecture in 2006 at the National Institute of Rural Development, I had argued that urbanisation in Gujarat was clearly underestimated. There were more than 122 large villages in Gujarat in 2001 that had, according to the 2001 Census, all the characteristics of towns but were not measured as such, and that the actual growth of urbanisation was around 5% and not half of that. We were right. In Gujarat, urbanisation went up from 37.4% in 2001 to 42.6% in 2011, and was not, as the official projection, at 40.4%. In Gujarat, the urban population was 42.6% of the total population. This was around 2.57 crore persons. But the projections of the urban population by the Technical Group on Population Projections after the 2001 Census was 2.4 crore and so, for almost a decade, policies were ignoring around two million persons in Gujarat and their needs.

When you grow at 7% in per capita terms, you need a lot of agricultural and rural products and services. The farmer will provide them and he and she (for in many cases the farmer is a lady) will move to markets to sell. Will we develop the market towns, the roads, the communication links, the skills, the health facilities, the financial products and a lot else with which the farmer will do this or will we leave him/her to the capricious mercies of the market, a great hand maiden but a cruel master if the lessons of economic history and our own freedom movement are to be believed? The two very popular ideas, that employment in crop production is not falling and urbanisation is not rising fast in states like Gujarat, are not correct.

Urbanisation in Punjab is much less than in Gujarat. The urban population was more than 50% in four districts, namely Ludhiana (59.14%), SAS Nagar (55.17%), Amritsar (53.64%) and Jalandhar (53.18%). Only Ludhiana (2.06million), Amritsar (1.34 million) and Jalandhar (1.16 million) have an urban population of more than 7 lakh persons as compared to a very large number of such districts in the more urbanised states. But it is an advanced agricultural state and the phenomenon of census towns was present there also. In 2011, Punjab counted the Punjabis who had shifted to urban areas correctly. The urban population was 104 lakh as against the projected 107 lakh; 37.5% of the population was urban in 2011. Urban population grew by 25.7% (2001-2011). But it was found out that for ten years, the Punjabis were not migrating to what they called towns but places they did business in. They converted large villages to small towns, but were missed out. There were 143 statutory towns (municipalities, corporations, cantonments and notified area committees). These were on the radar, but the Census 2011 discovered 74 census towns (Seema Jain, IAS, Census Commissioner, 2011). The people of Punjab were creating these towns, but nobody knew of that and were not worrying about them. Out of the 20 lakh additional Punjabis who moved to urban areas, perhaps 8 lakh went to these 'towns' they had created.

Bihar is a poor state in terms of per capita income. Its urbanisation rate in 2001 was 10.46%

of the total population. The Technical Group on Population Projections (Government of India, 2006) projected a near stagnant urbanisation rate in 2011. Their projected figure was 10.5%. However, in 2011, the actual rate of urbanisation was higher. It was 11.3%. The population experts, policymakers and planners missed out the fact that Bihar's urbanisation was growing. In fact, the growth rate of urban population at 35.1% in the period 2001-11 was higher than in the country. In a large state, that meant a lot of people. The missing Bihari urban people were 1.5 million in number. They were, in fact, going to places where the infrastructure was poor. Including census towns, urban growth of more than 50% in the period 2001-11 took place in rural Champaran, Begusarai, Bhagalpur, Munger and Bhojpur.
The period of high growth is that of problems and opportunities. This is bound to be so as it is a period of transition in a rural-urban continuum. Change is inevitable and fast and the only question is if it would be benign or of the cruel kind in the early history of the industrial revolution. Millions of farmers, agricultural workers and artisans are moving from smaller villages to larger villages, from larger villages to smaller towns and from there to larger towns. They are doing so for better opportunities, and that is good. But if we create institutions to support them, the process would be benign, otherwise the change and transition would inevitably take place but it would be of a cruel kind. The numbers our policymakers use are leading to the bad options.

Government issues clarifications on FDI in multi-brand retail

The government has issued clarifications on certain questions raised by potential foreign investors regarding Foreign Direct Investment (FDI) in multi-brand retail business. The government notified changes, to be effective immediately, pertaining to foreign direct investment in supermarkets or so-called multi-brand retail trading, that the cabinet had cleared on 1 August.

The notification comes as a formal assurance to foreign retailers such as Wal-Mart Stores Inc., Tesco Plc, and Carrefour SA that have in the past expressed plans to invest in opening supermarkets in the country.

The changes were made after foreign retailers sought clarifications on the policy and met trade minister Anand Sharma to discuss these.

The clarifications said that only 50% of the initial investment of at least $100 million made by the foreign retailer needed to go towards so-called "back-end" infrastructure (the worry for foreign retailers was that this was 50% of all investment).

They also redefined small and medium enterprises from which such retailers had to source 30% of their products as those with an investment in plant and machinery of $2 million (as against the $1 million mentioned in the original policy).

Finally, the clarifications also said the retail stores can be set up in any city allowed by respective state governments (and not only those with a population in excess of 1 million as mentioned in the original policy).

Draft National Steel Policy 2012

A draft National Steel Policy 2012 has been issued by the Ministry of Steel in February 2013. They have sought public comments.□The key objectives of the 2012 draft policy are:

- **Steel capacity:** To attract investments from both domestic and foreign sources to reach crude steel capacity level of 300 mt by 2025-26 to meet the domestic demand fully.
- **Iron ore:** Phased restrictions on iron ore exports to be examined by an Inter-ministerial Committee to ensure long term competitiveness of the steel industry.
- **Coking coal:** The policy has suggested measures to enhance the resource position of coking coal in India.

Rajan Committee suggests new development index of states

The Committee for Evolving a Composite Development Index (Chairperson: Raghuram Rajan) submitted its report to Ministry of Finance on September 26, 2013.The Committee had been asked to suggest methods to identify backward states and how the criteria may translate into devolution of funds from centre to states.

The Committee came up with a multi- dimensional index of backwardness, which is a simple average of the following ten sub- components: (i) monthly per-capita consumption expenditure, (ii) education, (iii) health, (iv) household amenities (drinking water, sanitation, etc), (v) poverty rate, (vi) female literacy, (vii) percent of Scheduled Castes-Scheduled Tribes population, (viii) urbanisation rate, (ix) financial inclusion (percentage of households with banking facility), and (x) connectivity (highways, roads, etc). The index varies between0 and 1, with 1 indicating highest degree of underdevelopment.

The Committee recommended a general method of allocation of funds from centre to states based on both a states development need as well as its development performance. While the value of the underdevelopment index for a state represents the needs of a state, the improvements to a states development index over time are a measure of its performance. It does not recommend a quantum of funds to be allocated, but instead recommends that some funds can be allocated using the proposed approach.

The Committee suggested that every state be given a fixed basic allocation of 0.3% of overall funds, and additional funds based on its needs and performance based on the index. Thus, with 28 states, 8.4% of funds will be given to the states as fixed basic allocation. Of the balance amount, 75% will be allocated on the basis of need and 25% on performance.

Allocation schemes based on existing categorisations such as for Special Category States can continue in parallel to the proposed allocations. The Committee also recommended that states with a score of 0.6 or above be deemed "least developed" states, and may be provided additional forms of assistance by the central government. It recommended that the index be updated every five years, and the index and formula be re-examined every 10 years.

Pension Bill passed

The Pension Fund Regulatory and Development Authority Bill, 2013 was passed by Lok Sabha on September 4, 2013 and by Rajya Rabha on September 6, 2013. It subsequently received presidential assent. The Bill was initially introduced in 2005 after which it lapsed and was re-introduced in 2011.

The key features of the Act are:

- The Act gives statutory powers to the interim Pension Fund Regulatory and Development Authority (PFRDA) set up in 2003.
- The New Pension System, which was implemented in January 2004, shifted the pension schemes from the defined benefit system to the defined contribution system. The Bill alters the name of the New Pension System to National Pension System (NPS).
- **Some features of the NPS are:**
    - Every subscriber will have an individual □pension account.
    - The account will be portable across job changes.
    - The subscribers may choose fund managers and schemes to manage their pension wealth.
    - They will have the option of switching schemes and fund managers.

The key amendments made to the Pension Fund Regulatory and Development Authority Bill, 2011 before being passed are:

- Withdrawals up to 25% of the contribution made by the subscriber from the individual pension account are permitted subject to conditions specified by regulations.
- The subscriber is permitted the opportunity to invest up to 100% of his funds in government securities or schemes which provide minimum assured returns as notified by the PFRDA.
- Foreign countries are permitted to hold up to 26% equity stake in a pension fund or as specified under the provisions of the Insurance Act, 1938, whichever is higher. The Insurance Laws (Amendment) Bill, 2008 proposes to raise the maximum stake by a foreign investor in an insurance fund to 49%, which, if passed, will also apply to pension funds.

(Appreciation of the law is given elsewhere)

Food processing –related

Nearly a third of fruits and vegetables go waste for lack of post-harvesting facilities. The annual loss is Rs 2 lakh crore, a nationwide study estimates.

About 30 per cent of vegetables and fruits produced in the country is rendered unfit for consumption due to spoilage after harvesting, according to a study whose findings come amid the debate over alleged hoarding by traders and the skewed economics of the onion crop.

The country produced around 77 million tonnes fruits and 150 million tonnes vegetables in 2011-12, out of a total horticultural production of 257.28 million tonnes. The annual post-harvest loss of these highly perishable commodities is estimated to be Rs 2 lakh crore due to lack of food processing units and modern cold storage facilities, says Associated Chamber of

Commerce (ASSOCHAM).

The government admits horticulture needs more attention and has taken some steps over the last few years but they have apparently not been enough to address wastage.

The area under horticulture has increased from 16.6 million hectares in 2001-02 to 23.24 million hectares in 2011-12 with a corresponding increase in production from 145.8 million tonnes to 257.28 million and in productivity from 8.8 tonnes per hectare to 11.1. Thus, the study says, the growth in area (40.1 per cent), production (76.5 per cent) and productivity (26 per cent) from 2001-02 to 2011-12 suggests horticulture is likely to play a significant role in development of agriculture in the near future.

The study says the magnitude of post-harvest losses in fruits and vegetables can be minimised with proper cultural operations, harvesting, transportation, storage and pre- and post-harvest treatments.

According to the National Centre for Cold Chain Development, a government entity set up as part of the effort to address storage issues, the total cold storage capacity in the country (in 2012) was 30.1 million metric tonnes, which is only 12.9 per cent of the total fruits and vegetable produced.

This capacity is restricted mainly to wholesale markets or in their neighbourhood, but a major volume of fruits and vegetables is sold in local or regional markets that don't have such facilities, leading to the huge wastage.

Managing director of National Horticulture Board Rajendra Kumar Tiwari says the National Horticulture Mission will be strengthened under the 12th five-year plan. Besides budgetary support, the government is focusing on post harvest management.

During the 11th five-year plan period, cold storage facilities increased by 8 to 9 million tonnes, most of it in the last three to four years. The additional requirement is 36.82 million tonnes.

West Bengal is a leader in horticulture, accounting 10.5 per cent of production, followed by Andhra Pradesh and Uttar Pradesh with 9.6 per cent each and Tamil Nadu with 8.9 per cent. Madhya Pradesh ranks ninth with a 5.5 per cent share.

Many politicians in Delhi have blamed Madhya Pradesh for wreaking havoc on the onion prices because a central team during a visit to Shajapur had stumbled upon godowns full of onions. Officials in the state's horticulture department found a touch of irony in the allegation. Three to four years ago, even the suggestion that MP can manipulate onion prices would have been dismissed. Not only MP did not produce enough onions, it did not have cold storage facilities either.

Things have, however, changed for the better over the last few years. "People did not know what cold storage was. A scheme, now discontinued, to promote cold storage increased the capacity but the state still has a long way to go," says deputy director (horticulture) M L Hirwan.

ASSOCHAM's secretary general D S Rawat says MP alone incurs annual losses of over Rs 5,300 crore due to significant dearth of on-farm processing facilities. About losses across major states, Rawat says the projected production of fruits and vegatables would only cater to domestic demand, leaving no scope for growth in imports. Exports of fresh mangoes, onions and grapes have declined between 13 and 24 per cent in the last few years.

Apart from the lack of basic infrastructure such as cold chains, the report identifies among other problems the absence of good refrigeration systems in vehicles used for transporting bulk raw fruits and vegetables to markets; the scattered nature of production, sometimes in isolated places; and a long marketing channel with many intermediaries in the supply chain". The report has suggested strengthening the cluster-based approach — horticulture clusters are developed as the source for raw material — in terms of dovetailing of various programmes and schemes to ensure better connectivity to consumption centres. Other suggestions include development of a post-harvest management infrastructure, a scheme for long-distance bulk transportation of fresh fruits and vegetables; enabling the food processing industry to approach the producer directly; and development of an export support infrastructure.

Biotechnology Regulatory Authority of India Bill, 2013 introduced The Bill was introduced in the Lok Sabha on April 23, 2013. It aims to promote the safe use of modern biotechnology by enhancing the effectiveness and efficiency of regulatory procedures. Some of the key features of the Bill are:

The Bill establishes the Biotechnology Regulatory Authority of India (Authority)
The functions of the Authority shall include regulating the research, transport, import, manufacture and use of organisms and products of modern biotechnology. A Biotechnology Regulatory Appellate Tribunal will hear appeals against the decisions of the Authority.

- Field trials for certain organisms or products cannot be conducted unless the Authority permits them as aiding the development of modern biotechnology such as genetically engineered plants, animals used in food or any animal clones that can be applied in agriculture, fisheries or food products. The Bill will not apply to the clinical trials of drugs, under the Drugs and Cosmetics Act, 1940, and food or food additives or any material under the Food Safety and Standards Act, 2006.
- An Inter-Ministerial Governance Board will oversee the performance of the Authority. A Biotechnology Advisory Council will render strategic advice to the Authority regarding developments in modern biotechnology and their implications in India.
- Regulatory divisions of the Authority have been created to deal with agriculture, forest and fisheries, human health and veterinary products, etc. A Risk Assessment Unit will appraise applications before final approval is granted for proposed research, transport or import of an organism or product.

Cabinet approves the National Urban Health Mission

The Cabinet approved the National Urban Health Mission as a scheme under the National Health Mission on May 1, 2013. Upto now, only National Rural Health Mission (NRHM) exists. The Urban Mission will focus on primary health care needs of the urban poor by facilitating equitable access to quality urban health care, revamping the primary public health care system, involving community and urban local bodies and increasing outreach. The institutional mechanism and management systems under the NRHM will be strengthened to meet the requirements of the Urban Mission.

The scheme will be implemented in 779 cities and towns with a population of more than 50,000 and is expected to cover 7.75 crore people. The Ministry estimates the Urban Mission to cost approximately Rs 23,000 crore over a 5 year period with the central government covering about Rs 17,000 crore. The funding ratio between centre and states will be 75:25. For the North Eastern states, Jammu and Kashmir, Himachal Pradesh and Uttarakhand, the ratio will be 90:10.

The Urban Mission will provide the following:

- OneUrbanPrimaryHealthCentreforevery 50,000 to 60,000 people
- One Urban Community Health Centre for five to six Urban Primary Health Centres in big cities
- OneAuxiliaryNursingMidwifefora population of 10,000 people
- OneAccreditedSocialHealthActivist (ASHA worker) for 200 to 500 households.

According to the Ministry, under the Urban Mission the following outcomes are expected:

- Reduction in Infant Mortality Rate
- Reduction in Maternal Mortality Ratio
- Universalaccesstoreproductivehealthcare
- Convergenceofallhealthrelated interventions.

Cabinet gives nod to Rashtriya Uchhatar Shiksha Abhiyan

On October 4, 2013, the Cabinet approved a new centrally sponsored scheme in higher education, i.e. Rashtriya Uchhatar Shiksha Abhiyan (RUSA). The scheme will be implemented through the Twelfth and Thirteenth Plan period. The scheme focuses on state higher educational institutions and proposes to reach 316 state public universities and 13,024 colleges. It is also expected to improve the Gross Enrolment Ratio in these institutions from 19% currently to 30% by 2020.

The key objectives of the scheme are as follows:

- Improve the quality of existing state higher educational institutions by ensuring compliance with quality norms and standards, including accreditation.
- Correct regional imbalances in access to higher education through high quality institutions in rural and semi-urban areas.
- Improve equity in higher education by providing adequate opportunities for women, minorities, Scheduled Castes, Scheduled Tribes, Other Backward Classes, and

disabled persons.

- Ensure adequate availability of quality faculty in all higher educational institutions and ensure capacity building at all levels.
- Create an atmosphere of research and innovation in higher educational institutions.
- Integrate skill developments efforts of the government with the conventional higher education system.

The funding for the scheme will be provided by the central and state governments in the ratio of 65:35 for most states and union territories, 90:10 for north-eastern states and Jammu & Kashmir, and 75:25 for special category states. In the Twelfth Plan period, the scheme would have a financial outlay of Rs 22,855 crore, of which Rs 18,027 crore will be the central share. Private government-aided institutions can avail funding under the scheme upon meeting certain pre- conditions.

In order to be eligible for funding under the scheme, states will have to fulfil certain criterion which include among others: (i) creation of a State Higher Education Council, (ii) creation of accreditation agencies, (iii) preparation of state perspective plans, (iv) commitment of certain stipulated share of funds towards the scheme, (v) academic, and institutional governance reforms and, (vi) filling faculty positions etc.

An initial amount will be provided to the state governments to prepare them for complying with the above requirements. On meeting these requirements, states will receive funds on the basis of certain outcomes. The parameters for deciding the amount of funds for state higher education institutions include improvement in access, equity and excellence in education.
At the national level, the scheme will be implemented by the RUSA Mission Authority and assisted by a project advisory group, technical support group and project directorate. The State Higher Education Council will be set up as an autonomous body to coordinate the scheme in different states. The Council will be assisted by a state project directorate and technical support group.

The Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Bill, 2013

Main points

- The Bill provides for land acquisition as well as rehabilitation and resettlement. It replaces the Land Acquisition Act, 1894.
- The process for land acquisition involves a Social Impact Assessment survey, preliminary notification stating the intent for acquisition, a declaration of acquisition, and compensation to be given by a certain time. All acquisitions require rehabilitation and resettlement to be provided to the people affected by the acquisition.
- Compensation for the owners of the acquired land shall be four times the market value in case of rural areas and twice in case of urban areas.
- In case of acquisition of land for use by private companies or public private partnerships, consent of 80 per cent of the displaced people will be required. Purchase of large pieces of land by private companies will require provision of

rehabilitation and resettlement.

- The provisions of this Bill shall not apply to acquisitions under 16 existing legislations including the Special Economic Zones Act, 2005, the Atomic Energy Act, 1962, the Railways Act, 1989, etc.

Analysis

- It is not clear whether Parliament has jurisdiction to impose rehabilitation and resettlement requirements on private purchase of agricultural land.
- The requirement of a Social Impact Assessment for every acquisition without a minimum threshold may delay the implementation of certain government programmes.
- Projects involving land acquisition and undertaken by private companies or public private partnerships require the consent of 80 per cent of the people affected. However, no such consent is required in case of PSUs.
- The market value is based on recent reported transactions. This value is doubled in rural areas to arrive at the compensation amount. This method may not lead to an accurate adjustment for the possible underreporting of prices in land transactions.
- The government can temporarily acquire land for a maximum period of three years. There is no provision for rehabilitation and resettlement in such cases.

Coal regulator

India's cabinet agreed to set up a coal regulator that will monitor the supply and pricing of the fuel in a bid to further liberalize the sector long-dominated by state-run monopoly, Coal India Ltd.

Under the proposal, Coal India—the world's biggest coal company by output—will have to adopt a formula for price fixing, based on the quality of the fuel, outlined by the regulator.
The regulator is also expected to oversee coal supplies from Coal India to consumers such as power producers. It could also independently monitor the progress made by state-run and private companies in extracting coal under government allocated mining licenses.

Key features of the regulator are:

- **Pricing of coal:** The regulator will specify the principles and methodology for determining the price of raw and washed coal. Rates of coal will be determined by Coal India Limited. Earlier, the Group of Ministers had recommended that the coal regulator should not regulate the pricing of coal.
- **Policy for production:** The regulator will have an advisory role regarding formulation of policy in coal production, and competition and investment in coal sector.
- **Testing and sampling:** The regulator will regulate methods for testing the declaration of grades or quality of coal, specify the procedure for automatic coal sampling and adjudicate upon disputes between the parties, monitor closure of mines and approval of mining plans among others.
- **Composition:** The coal regulator will have a chairperson and experts on coal, legal affairs, finance and consumer affairs. Appointment of the chairperson and other members

of the regulator will be done by a Selection Committee headed by the Cabinet Secretary. The initiative is part of a set of reform measures to further liberalize the energy sector and revitalize economic growth.

Coal India, meets more than 80% of domestic need, but has been missing its output and supply targets in recent years. The state-monopoly says this is mainly due to delays in getting government environmental clearance for new projects and local opposition to land acquisitions.

Expert Committee submits report on film certification

An Expert Committee under Justice Mukul Mudgal, set-up by the Ministry of Information and Broadcasting to examine issues related to film certification under the Cinematograph Act, 1952 submitted its report on September 28, 2013.The Committee has also incorporated most of its recommendations in a draft Cinematograph Bill.

Key observations and recommendations are:

Appointment of Advisory Panel members: The central government has set-up Advisory Panels at different regional centres to examine films and make recommendations regarding certification to the Central Board of Film Certification (CBFC). The Committee noted some instances where panel members lacked cinematic understanding or imposed their political, religious or personal opinions. Hence, the Committee recommended introducing eligibility criteria for panel members and ensuring that the selection process is autonomous. CBFC should set-up a committee to draw up a list of qualified persons to be appointed as panel members. The strength of the list should be at least thrice the number of vacancies in Advisory Panel(s). At least one-third of the members of each panel should be women.

Guidelines for film certification: The Committee opined that the guidelines for film certification cannot be water-tight. Hence, it recommended that such guidelines should include provisions for protecting artistic and creative freedom while ensuring social responsibility and sensitivity. The Committee argued that the Advisory Panel/CBFC should view a film in its entirety instead of the perspective of stand- alone scenes. The film should be examined in the light of the period depicted, context, content, theme and people. The deletions or amendments suggested by the CBFC/Advisory Panel should be clearly stated in terms of minutes and seconds instead of percentage.

Classification of films: The Committee has recommended a revised form of classification with the following categories: (i) unrestricted exhibition (U), (ii) restricted to people above the age of twelve (12+), (iii) restricted to people above the age of fifteen (15+), (iv) restricted to adults (A), and (v) restricted to members of any profession or class of persons (S). This classification is on the lines of age and certifications prevalent internationally.

Suspension of exhibition by states: The Committee concluded that the central government has the dominant legislative and executive power regarding exhibition of films throughout the country. Hence, it recommended inclusion of a legislative provision to ensure that exhibition

of a film certified by CBFC shall not be suspended in normal circumstances. In case exhibition of a film leads to or is likely to lead to a breach of public order, the central government may itself or on a state government's recommendation, suspend exhibition of such a film after providing the film's producer or distributor an opportunity to be heard. Such a suspension can be ordered only public exhibition of the film. A suspension can be challenged in the Film Certification Appellate Tribunal (FCAT).

Appellate Tribunal: The Committee noted that presently, only an applicant for film certification can appeal to the FCAT against the CBFC's decision. Any other person aggrieved by such decision typically approaches the relevant High Court. This has led to large number of cases and adoption of disparate standards by various High Courts. Hence, the Committee recommended that FCAT's jurisdiction be expanded to permit appeals by any person aggrieved by CBFC's decision. FCAT should also be given powers to issue interim orders. The decisions of the FCAT should be allowed to be appealed only in the Supreme Court.

Scope of the Cinematograph Act: The scope of the Cinematograph Act, 1952 should be widened to include a film's songs, lyrics and advertising material.

Global burden of diseases

People now live 21 years longer than they did in 1970s

Substantial progress was made in postponing death across South Asia between 1970 and 2010, the average gain being 25 years in each country. Great variation exists, however, with the Maldives demonstrating the greatest gain of about 42 years and more conflict-ravaged Afghanistan and Pakistan showing the least improvement — 17 and 13 years. Indians now live 21 years longer than they did in 1970s. During this period, death rates for children aged between 1 and 4 declined by 84 per cent, while mortality rates saw the least improvement for persons over 80 (30 and 15 per cent decreases for women and men).

According to a report on the Global Burden of Diseases, between 1990 and 2010, the region succeeded in decreasing premature death and disability, also known as healthy years lost, from lower respiratory infections, preterm birth complications, and diarrhoeal diseases. However, these conditions are still among the top five causes of disease burden for Afghanistan, Bangladesh and Nepal.

HIV/AIDS caused 4,753 per cent more healthy years lost in 2010 than in 1990, reflecting how the epidemic is taking hold of the region. In India, HIV/AIDS became the 15th leading cause of disease burden in 2010, up from 114. Between 1990 and 2010, healthy years lost from stroke, ischaemic heart disease, depression and diabetes increased between 50 and 100 per cent in the region. Sri Lanka experienced 211 per cent increase in diabetes. Healthy years lost from road injuries increased 58 per cent during this time, with substantial country-wise variation — 20 per cent decrease in the Maldives to 112 per cent rise in Afghanistan.

"Overall improvements in living conditions, less under nutrition, and reduction in infectious

diseases are major contributors to the increase in the life span of Indians over the past several decades," says Lalit Dandona, Distinguished Research Professor and Director of Wellcome Trust Capacity Building Programme at the Public Health Foundation of India, and Professor of Global Health at the Institute for Health Metrics and Evaluation (IHME), University of Washington.

The Global Burden of Diseases: Generating Evidence, Guiding Policy: South Asia Regional Edition has been brought out by the World Bank and the IHME. The disease burden from potentially avoidable risk factors like household air pollution, childhood underweight and suboptimal breastfeeding declined between 30 and 70 per cent from 1990 to 2010. Nonetheless, these factors remain among the leading contributors of disease burden in Nepal and Pakistan, says the report. Factors associated with lifestyles such as dietary risks and high body mass index contributed to far more healthy years lost in 2010 than in 1990. During this time, Bangladesh saw a 749 per cent rise in disease burden from high body mass index.
Across all countries and diseases, higher-income countries like the Maldives and Sri Lanka generally performed the best. India and Afghanistan had the most conditions for which they performed significantly worse.

Prohibition of Manual Scavenging Bill passed by Parliament

The Prohibition of Employment as Manual Scavengers and their Rehabilitation Bill, 2013 was passed by Parliament on September 7, 2013. It received the assent of the President on September 18, 2013 and will come into force after 60 days from this date. The Act prohibits the employment of manual scavengers, the manual cleaning of sewers and septic tanks without protective equipment, and the construction of insanitary latrines. Key features of the Bill, as passed, are:

- **Definitions:** A "manual scavenger" is a person who manually cleans or disposes of human excreta in an insanitary latrine, an open drain, or a railway track. An "insanitary latrine" requires human excreta to be cleaned manually.
- **Survey of insanitary latrines:** Each local authority, cantonment board and railway authority is responsible for surveying insanitary latrines within its jurisdiction. They shall also construct a number of sanitary community latrines.
- **Conversion or demolition of insanitary latrines:** Each occupier of insanitary latrines shall be responsible for converting or demolishing the latrine at his own cost. If he fails to do so, the local authority shall convert the latrine and recover the cost from him. State governments may provide assistance to occupiers for converting latrines. However, non-receipt of assistance shall not be a valid ground to use an insanitary latrine beyond nine months of the law in force.
- **Identification and rehabilitation of manual scavengers:** All persons listed as manual scavengers shall be rehabilitated with a one-time cash assistance, scholarship for their children, and a residential plot with financial assistance for constructing a house. One adult member of the family will be trained in a livelihood skill and given a monthly stipend of at least Rs 3,000 during training. A subsidy and concessional loan shall also be given for taking up an alternative occupation.
- **Implementing authorities:** The District Magistrate and the local authority shall be the implementing authorities.
- **Penalty:** Offences under the Bill shall be cognisable and non-bailable, and may be

tried summarily.

Scheme for setting up of plastic parks approved

The Ministry of Chemicals and Fertilisers approved a scheme to support the setting up of plastic parks to promote downstream plastic processing industries, increase capacity investment in the sector and promote exports on October 9, 2013. The scheme envisages the establishment of Special Purpose Vehicles (SPVs) to provide infrastructure and common facilities to the industries.

It is proposed that the central government would provide a grant-in-aid to the extent of 50% of the project cost up to a maximum of Rs 40 crore for each SPV. At least 20% of the equity of each SPV must be contributed by state governments or their agencies. The remaining cost is to be funded by beneficiary industries or loans from financial institutions.

What is so special about chemical weapons? What is it about chemical weapons that crosses a "red line"?

The reason is that most of the world has come to an agreement that chemical weapons should not be used in war. I think most people today have some acceptance of the common ways that wars are waged: with bullets and bombs. But as we've seen historically, chemical weapons are inhumane and a horrific way to die — and that's why the most of the world has outlawed them.

Another reason is that chemical weapons are indiscriminate — not that bombs and bullets can't be. These weapons kill everyone in any environment where they're deployed. That is why we see the large number of children [killed] in the footage from Syria.

Cabinet approves the National Policy for Children, 2012 On April 18, 2013 the Cabinet approved the National Policy for Children, 2012. The 2012 policy lays down the principles that should guide policies and programmes on children framed by national, state and local governments. The Policy recognises every individual below the age of 18 years as a child.The **key features of the Policy are:**

- Every child will have the undeniable right to life, survival, health, nutrition, education, development, protection and participation. All children will have equal rights without discrimination.
- The Policy aims at: (i) coordination across different sectors and levels of governance; (ii) active engagement and partnerships with all stakeholders; (iii) setting up of a comprehensive and reliable knowledge base; (iv) provision of adequate resources; (v) and sensitisation and capacity development of all those who work for and with children.
- A National Plan of Action will be developed to give effect to the policy and a National Coordination and Action Group (NCAG) will be constituted to monitor the progress of implementation of the Plan of Action.□Similar plans and groups for coordination and action will be constituted at the state and district levels.
- The National and State Commissions for Protection of Child Rights will ensure that the principles of the Policy are respected across all sectors and levels of government.
- The Ministry of Women and Child Development will be the nodal ministry for overseeing, coordinating and reviewing the implementation of the Policy. The Policy will be reviewed

every five years.

MoEF to declare parts of the Western Ghats as ecologically sensitive

- The Ministry of Environment and Forests (MoEF) has decided 'in principle' to declare parts of the Western Ghats as an Ecologically Sensitive Area (ESA). The MoEF decision is based on an acceptance of the recommendation of the High Level Working Group (HLWG) (Chairman: Dr. K. Kasturirangan) that submitted its report in April 2013.
- The HLWG has identified approximately 37% (60,000 sq km) of the Western Ghats as Ecologically Sensitive Area (ESA). The ESA is spread across six states of the Western Ghats region: Gujarat, Maharashtra, Goa, Karnataka, Kerala and Tamil Nadu.

The MoEF has accepted the following recommendations of the HLWG on the ESA:

- Complete ban on mining, quarrying and sand mining as also thermal power plants and other heavily polluting industries.
- Hydro power and wind energy permitted subject to applicable regulations.
- Ban on new building and construction projects of over 20,000 sq m.
- Cumulative impact and development needs of projects, not specifically prohibited, to be assessed before grant of environment clearance.

The Forest Rights Act should be implemented. Consent of the gram sabha for projects should be mandatory. A draft notification declaring parts of the Western Ghats as an ESA would be issued by the MoEF and circulated for inputs of stakeholders. A High Level Committee of the MoEF would be set up to monitor the time bound implementation of the recommendations of the HLWG.

PM Singh's visit to China October 2013

India and China signed 9 MoUs/agreements including the Border Defence Cooperation Agreement (BDCA) to maintain peace and tranquility on the Line of Actual Control, on 23 October 2013 during the official visit of Indian Prime Minister Manmohan Singh to China.

List of Agreements/MoUs signed between India and China during PM's Official Visit to China

S. No.	Name of Agreement / MoU	Gist of Agreement / MOU
1.	Agreement on Border Defence Cooperation	An additional confidence building measure to ensure peace and tranquility on the border.
2.	MoU on Nalanda University	Cooperation on Nalanda as part of East Asia Summit process.
3.	MOU to Strengthen Cooperation on Trans-Border Rivers	Provides for expanded cooperation on trans-border rivers.
4.	Cultural Exchange Programme 2013-15	A listing of cultural exchanges till 2015.
5.	MoU on Cooperation in Road Transport and Highways	Enabling agreement for cooperation in the roads sector.
6.	MoU on Power Equipment Service Centres in India	Provides for establishment in India of Chinese power equipment service centres.
7.	Agreement between Delhi-Beijing on Establishment of Sister City Relationship	Establishes sister city relations between Delhi and Beijing.
8.	Agreement between Bengaluru – Chengdu on Establishment of Sister City Relationship	Establishes sister city relations between Bengaluru and Chengdu.
9.	Agreement between Kolkata – Kunming on Establishment of Sister City Relationship	Establishes sister city relations between Kolkata and Kunming.

Border Defence Cooperation Agreement (BDCA) • India and China shall carry out border defence cooperation on the basis of their respective laws and relevant bilateral agreements.• Both countries agreed to exchange of information including information about military exercises, aircrafts, demolition operations and unmarked mines-and take consequent measures conducive to the maintenance of peace, stability and tranquility along the line of actual control in the India-China border areas.• Both countries agreed to work jointly to combat smuggling of arms, wildlife, wildlife articles and other contrabands.• Both countries agreed that they shall not follow or tail patrols of the other side in areas where there is no common understanding of the line of actual control in the India-China border areas.• In case a doubtful situation arises with reference to any activity by either side in border areas where there is no common understanding of the line of actual control, either side has the right to seek a clarification from the other side. In such cases, the clarification shall be sought and replies to them shall be conveyed through any of the mechanisms established under this Agreement.• Both countries agreed that if the border defence forces of the two sides come to a face-to-face situation in areas where there is no common understanding of the line of actual control, both sides shall exercise maximum self-restraint, refrain from any provocative actions, not use force or threaten to use force against the other side, treat each other with courtesy and prevent exchange of fire or armed conflict.• Both countries shall implement this Agreement without prejudice to their respective positions on the alignment of the line of actual control as well as on the boundary question.

Appreciation

The BDCA, among the nine agreements reached during talks between the two governments, was top of the list. It is seen as an important step between the two Asian giants. The agreement includes regular joint military exercises, periodic meetings between the officers and clarification on doubtful activities.

Signing the agreement reflected the will and resolution of both sides for a friendly and cooperative relationship. "This is of great significance for friendship and trust between both sides as well as for peace and stability on the border."

Both Chinese and Indian observers believe it is a landmark deal that will help build mutual trust between the two countries. They agree a peaceful border will translate into better relations in other areas.

It is helpful for both sides to manage and control emergent incidents and maintain peace and stability in the border regions.

"The agreement would help reduce instances of stand-off between defense forces from either side such as the one in April".

It is the first time the two sides have signed a border issue agreement in "cooperation."

Dipankar Banerjee, an Indian expert on strategic affairs "It was a very significant step taken by the two heads of government in furthering India-China relations. Our talks on the settlement of border issues between special representatives remain ongoing; patrols from both sides crossing boundaries sometimes create tension along the line of actual control. I expect that this border defense cooperation agreement would definitely help reduce such tensions in future."

Professor Srikanth Kondapalli, scholar on Chinese studies at Jawaharlal Nehru University in New Delhi believes the BDCA will stabilize border area disputes.

"For example, the trailing of patrols is one area both sides will verify. Secondly, there is a hotline at military headquarters level. Thirdly, there will be also tactical military exercises," the professor said.

Sister city agreement

After top-level talks between Prime Minister Dr. Manmohan Singh and his Chinese counterpart Li Keqiang, the two countries agreed to establish sister city relations on Wednesday between Delhi-Beijing, Bengaluru-Chengdu and Kolkata-Kunming to foster people-to-people ties.

In furtherance of their desire to promote closer engagement in the fields of public policy, education, health, science and technology, tourism and culture, the two countries have not only agreed to establish sister-city relations but also have expressed their intent to create mechanisms for its implementation.

With this regard, the two countries have also agreed to maintain regular contacts between the designated authorities from both sides to promote the initiative. India and China have agreed to carry out cooperation in the fields of education, culture, sports, youth affairs,

urban planning, waste-water management, infrastructure, environment, public health and exchange of trade and commercial delegations. The sister-city agreement will undertake exchanges involving delegations, interactions between institutions and sharing of experiences in areas of mutual interest.

The Agreement does not create any binding obligations between the two countries.

Food Processing and Animal Rearing

Animal husbandry and inclusive growth

Animal husbandry, dairying and fisheries activities play an important role in national economy and in socio-economic development of the country. Animals provide nutrient-rich food products, draught power, dung as organic manure and domestic fuel, hides & skin, and are a regular source of cash income for rural households. They are a natural capital, which can be easily reproduced to act as a living bank with offspring as interest, and an insurance against income shocks of crop failure and natural calamities. These activities contribute to the food basket, nutrition security and house-hold income of the farmers and play a significant role in generating gainful employment in the rural areas, particularly among the landless, small and marginal farmers and women, besides providing cheap and nutritious food.

Farmers of marginal, small and semi-medium operational holdings (area less than 4 ha) own about 87.7% of the livestock making development of livestock sector more inclusive in nature. Livestock production activities are largely in the hands of women. Animal husbandry promotes gender equity. More than three-fourth of the labour demand in livestock production is met by women. The share of women employment in livestock sector is around 90% in Punjab and Haryana where dairying is a prominent activity and animals are stall fed. The rapidly increasing demand for livestock products creates opportunities for their empowerment. Harnessing these, however, would require addressing constraints that women face. Appropriate policy and institutional arrangements such as establishment of "Women Livestock Producer Associations" would facilitate availing credit, insurance and other inputs and marketing services. Training women would reduce drudgery to women and improve animal productivity and enhance their economic returns.

Milk is the main output of livestock sector accounting for 66.7% of the total value of output of livestock. Meat and egg share 17.5% and 3.6% of the value of livestock output. The share of wool and hairs is negligible (0.2%). The share of dung, which is used as domestic fuel and farm yard manure, in the total value of livestock sector output, is about 9%. Livestock sector grew at an annual rate of 5.3% during 1980s, 3.9% during 1990s and 3.6% during 2000s. Despite deceleration, growth in livestock sector remained about 1.5 times larger than in the crop sector which implies its critical role in cushioning agricultural growth.

India is endowed with the largest livestock population in the world. It has 56.7% of world's buffaloes, 12.5% cattle, 20.4% small ruminants, 2.4% camel, 1.4% equine, 1.5% pigs and 3.1% poultry. The number-driven growth in livestock production may not sustain in the long run due to its increasing stress on the limited natural resources. The future growth has to come from improvements in technology and service delivery systems leading to accelerated productivity, processing and marketing.

The small ruminants provide livelihood support to the poor underprivileged landless, and marginal farm households. The goat and sheep production systems are mainly subsistence-oriented but in view of the rising demand for meat, there is a great scope for their commercialization. Nonetheless, these animals have been grossly neglected in development programs and their potential for enhancing livestock growth remains untapped.

The growth in livestock sector is demand-driven, inclusive and pro-poor. Incidence of rural poverty is less in states like Punjab, Haryana, Jammu & Kashmir, Himachal Pradesh, Kerala, Gujarat, and Rajasthan where livestock accounts for a sizeable share of agricultural income as well as employment. The average yield of milk and meat in our animals is 20-60% lower than the global average. Improving productivity in a huge population of low-producing animals is one of the major challenges. The average annual milk yield of Indian cattle is 1172 kg which is only about 50% of the global average, and much less than in New Zealand (3343 kg), Australia (5600 kg), UK (7101 kg), US (9332 kg) and Israel (10214 kg).

Livestock sector receives only about 12% of the total public expenditure on agriculture and allied sectors and about 4-5% of the total institutional credit flowing to agriculture and allied sectors. Only 6% of the animal heads (excluding poultry) are provided insurance cover. Livestock extension remains grossly neglected. Only about 5% of the farm households in India do access information on livestock. Organized slaughtering facilities are too inadequate. As Agriculture, including Animal Husbandry, Dairying and Fisheries is a State subject, the emphasis of the central govt has been on supplementing efforts of the State Governments in the development of these sectors. Assistance to the State Governments is provided for the control of animal diseases, scientific management and up gradation of genetic resources, increasing availability of nutritious feed and fodder, sustainable development of processing and marketing facilities and enhancement of production and profitability of livestock and fisheries enterprises under various centrally sponsored and central sector schemes.

During the Eleventh Plan, Government initiated several new programmes /schemes improve Veterinary Hospitals and Dispensaries, and for strengthening the efforts for animal disease control. To meet the shortage of fodder, several new components were incorporated in the Feed and Fodder scheme. Further, Dairy Entrepreneurship Development Scheme was initiated, with the objective of increasing investment in dairy sector for increasing milk production in the country while creating self-employment opportunities.

Livestock sector is expected to emerge as an engine of agricultural growth in the 12th plan and beyond in view of rapid growth in demand for animal food products. Achieving growth rate of 5-6%, however, would require addressing challenges of shortage of feed and fodder and frequent occurrence of some deadly diseases. The sector has remained under-invested; and neglected by the financial and extension institutions. Livestock markets are under-developed, which is a significant barrier to the commercialization of livestock production. Besides, the sector will also come under significant pressure of increasing globalization of agri-food markets.

Demand for animal food products is responsive to income changes, and is expected to increase in future. Between 1991-92 and 2008-09, India's per capita income grew at an annual rate of 4.8% and urban population at a rate of 2.5%.These trends are likely to continue. By the end of 12th Plan, demand for milk is expected to increase to 141 million tons and for meat, eggs and fish together to 15.8 million tons. Despite significant increases in livestock production, per capita consumption of milk (69 kg) and meat (3.7 kg) in 2007 has

been much lower against corresponding world averages of 85 and 40 kg. Global market for animal products is expanding fast, and is an opportunity for India to improve its participation in global market.

Sectoral growth of livestock sector

The value of output from livestock sector at current prices was about Rs. 4,59,051 crore during 2011-12 which is about 25.6% of the value of output from the agriculture and allied sector. The value of output of milk is Rs 3,05,484 crore in 2011-12, which is higher than the value of output of paddy and wheat. The value of output from meat group in 2011-12 was Rs 83,641 crore. The value of output from eggs and wool group was Rs 17,803 crore and Rs 318 crore respectively for 2011-12.

India, the largest producer of milk in the world, is set to produce over 133 million tonne milk during 2012-13. The milk production significantly rose from the level of 102.6 million tonnes at the end of the Tenth Plan (2006-07) to 127.9 million tonnes at the end of the Eleventh Plan (2011-12).

Poultry development in the country has shown steady progress over the years. Egg production was around 66.45 billion in 2011-12. The poultry meat production is estimated to be about 2.47 million tonnes. The current per capita availability of eggs is around 55 eggs per year. Export of poultry products was currently at around Rs. 457.82 crore in 2011-12 as per the report of Agricultural and Processed Food Product Export Development Authority (APEDA). The meat production has registered a healthy growth from 2.3 million tonnes at the end of Tenth Five Year Plan (2006-07) to 5.5 million tonnes at the end of the Eleventh Five Year Plan (2011-12). The Annual growth rate for meat production in 2011-12 was about 13%. The value of output from meat group at current prices in 2011-12 was Rs.83, 641 crore and Rs.17,803 crore from eggs.

India is the second largest producer of fish and the second largest producer of fresh water fish in the world. Fish production has increased from 41.57 lakh tonnes (24.47 lakh tonnes for marine and 17.10 lakh tonnes for inland fisheres) in 1991-92 to 86.66 lakh tonens (33.71 lakh tonnes for marine and 52.95 lakh tonnes for inland fisheries) in 2011-12. The value of output from fisheries sector was about Rs 76,699 crore during 2011-12 which is about 4.15% of the value of agricultural and allied sector output.

Total export earnings from livestock, poultry and related products were ` 33,417 crore during 2011-12 as compared to ` 25,409 crore during previous year i.e. 2010-11 with a growth of about 31.5%. Total export earnings from fisheries products have also shown steady increase and reached to `16,597.23 crore during 2011-12 compared to `12,901.47 crore during 2010-11 with a growth of about 28.65%.

Organisation of Dept of Animal Husbandry, Dairying and Fisheries

The Department of Animal Husbandry, Dairying & Fisheries is one of the Departments under the Ministry of Agriculture. It came into existence on February 1, 1991 by merger of two Divisions of the Department of Agriculture and Cooperation viz. Animal Husbandry and Dairy Development into a separate Department. The Fisheries Division of the Department of Agriculture & Cooperation and a part of the Ministry of Food Processing Industries was later transferred to this Department on October 10, 1997. The administrative head of the Department is the Secretary (Animal Husbandry, Dairying & Fisheries). Secretary of the

Department is assisted by Animal Husbandry Commissioner, four Joint Secretaries and one Adviser (Statistics), in discharging the responsibilities assigned to this Department.

Functions:

The Department is responsible for matters relating to livestock production, preservation, protection & improvement of stocks, dairy development, matters relating to the Delhi Milk Scheme and the National Dairy Development Board. It also looks after all matters pertaining fisheries, which includes inland and marine sectors and matters related to the National Fisheries Development Board.

The main focus of the activities is on (a) Development of requisite infrastructure in States/UTs for improving animal productivity; (b) Promoting infrastructure for handling, processing and marketing of milk and milk products; (c) Preservation and protection of livestock through provision of health care; (d) Strengthening of central livestock farms (Cattle, Sheep and Poultry) for development of superior germplasm for distribution to States; and (e) Expansion of aquaculture in fresh and brackish water, development of marine fisheries infrastructure & post harvest operations and welfare of fisherfolk, etc.

Subordinate offices are:

(i) Central Cattle Development Organizations
(ii) Central Poultry Development Organizations
(iii) Central Sheep Breeding Farm
(iv) Central Fodder Development Organizations
(v) National Institute of Animal Health, Baghpat,
(vi) Animal Quarantine Certification Centres
(vii) Delhi Milk Scheme
(viii) Central Institute of Coastal Engineering for Fishery, Bangalore.
(ix) Central Institute of Fisheries, Nautical and Engineering Training, Kochi.
(x) National Institute of Fisheries Post Harvest, Technology and Training, Kochi.
(xi) Fishery Survey of India, Mumbai.

National Dairy Development Board

National Dairy Development Board, located at Anand, Gujarat, set up in 1965 and declared as a statutory body corporate in 1987 under the NDDB Act, is a premier institution to accelerate the pace of dairy development on cooperative lines in the country.

Coastal Aquaculture Authority

The Coastal Aquaculture Authority (CAA) was established under the Coastal Aquaculture Authority Act, 2005 vide Gazette Notification dated 22nd December, 2005. The main objective of the Authority is to regulate coastal aquaculture activities in coastal areas in order to ensure sustainable development without causing damage to the coastal environment.

Veterinary Council of India

Veterinary Council is responsible for regulating veterinary practices as well as for maintaining uniform standard of veterinary education through Minimum Standard of Veterinary Education Regulations in all veterinary institutes across the country.

Central Cattle Development Organizations

These organizations include seven Central Cattle Breeding Farms, one Central Frozen Semen Production and Training Institute and four Central Herd Registration Units established in different regions of the country to produce genetically superior breeds of bull calves, good

quality frozen semen and for identification of superior germplasm of cattle and buffaloes, so as to meet the requirement of bull and frozen semen in the country.

Central Cattle Breeding Farms (CCBFs)
These are engaged in scientific breeding programmes of cattle and buffaloes and production of high pedigreed bulls for National Project for Cattle and Buffalo Breeding beside providing training to the farmers and breeders.

Central Frozen Semen Production and Training Institute, Hessarghatta (CFSP& TI)
This is a premier institute located at Hessarghatta, Karnataka producing frozen semen of indigenous, exotic crossbred cattle and Murrah buffalo bull for use in Artificial Insemination (AI). The institute also provides training in frozen semen technology to technical officers of the State Governments and acts as a centre for testing of indigenously manufactured frozen semen and AI equipments.

Central Herd Registration Scheme (CHRS)
Central Herd Registration Scheme is for registration of elite cows and buffalo breeds of national importance and provides incentive for rearing of elite cows and male calves. It plays a vital role in sourcing indigenous germplasm required for the National Project for Cattle and Buffalo Breeding. The scheme has a significant role in assisting the Department of Animal Husbandry of States and Union Territories, private sector and Government undertakings in procuring elite dairy cows and buffaloes as well as bulls and progeny of high genetic potential for use in the development programme. Objectives of the Scheme:
1. Identification and location of superior germplasm.
2. Using this data for producing superior germplasm.
3. Preservation of indigenous germplasm.
4. Milk recording of cattle and buffaloes for improving dairy farming.

National Project for Cattle & Buffalo Breeding
The NPCBB envisages genetic upgradation on priority basis with a focus on development and conservation of important indigenous breeds. Under the project 100% grants-in-aid is given to State Implementing Agencies. Approval of the Planning Commission has been obtained for continuation of NPCBB for first two years during the 12th Plan in order to complete spill over activities of the project. A new scheme namely National Project on Bovine Breeding and Dairy will be initiated under 12th Plan. The mandate of the scheme is to:

a) arrange delivery of vastly improved artificial insemination service at the farmers' doorstep;
b) bring 80% breedable females among cattle and buffalo under organized breeding through artificial insemination or natural service by bulls with high genetic merit;
c) undertake breed improvement programme for indigenous cattle and buffaloes so as to improve the genetic makeup as well as their availability.

Components of the scheme:

a) streamlining storage and supply of Liquid Nitrogen by sourcing supply from industrial gas manufacturers and setting up bulk transport and storage systems for the same;
b) promotion of private mobile Artificial insemination (AI) service for doorstep delivery of AI;
c) conversion of existing stationery government AI centres into mobiles centres;

d) strengthening semen stations as per Minimum Standard Protocol through induction of quality breeding bulls, upgrading & modernizing semen processing facilities, creating quality control facilities, and creating physical infrastructure facilities at semen stations;
e) Bull production for semen stations and natural service through progeny testing programme and pedigree selection;
f) quality control and certification of bulls and services at sperm stations, semen banks and training institutions; and
g) institutional restructuring by way of entrusting the job of managing production and supply of genetic inputs as well as Liquid Nitrogen to a specialized autonomous and professional State Implementing Agency

As a result of this scheme, semen production in the country has increased from 22 million straws (1999-2000) to 67 million straws (2011-2012) and the number of inseminations has increased from 20 million to 54 million. As per the impact analysis report submitted by NABARD, overall consumption rate has increased from 20 % to 35 %.

Expected Project benefits

- Increased and improved coverage of breedable females. About 80% of the total adult females among cattle and buffaloes will be brought under organized breeding activity (AI or natural service).
- The project will induct and provide self-employment to about 32,000 private AI practitioners.
- Large scale replacement (20 million) of low producing nondescript cattle and buffaloes by improved animals
- About 80,000 pedigreed bulls for natural service are proposed to be inducted in the areas out of the reach of AI.
- Increased rural self-employment opportunities and increased farm income. The benefits of the project will flow directly to the poor among the rural household.
- A modern AI network and delivery of AI services at farmers' doorstep.
- Establishment of Central Monitoring Cell for certification of semen, semen stations and AI bulls.
- Conservation and development of several indigenous cattle and buffalo breeds.

Cattle and buffalo

There are 199 million cattle and 105 million buffaloes (2007 livestock census). Crossbreds formed 16.6% of total cattle of which one-third are in Andhra Pradesh, Kerala, Karnataka and Tamil Nadu. Female cattle has gone up from 59 million in 1982 to 73 million in 2007. Buffaloes and cows contributed 53.4% and 43.2% to total milk output in 2009-10. While buffaloes contribution remained unchanged, share of crossbred cows increased from 14.2% in 1991-92 to 22.9% in 2009-10.

Average daily milk yield in 2009-10 was 6.87 kg in crossbred cows 2.14 kg in indigenous cows and 4.57 kg in buffaloes. Punjab has the highest average milk yield of crossbred cows (10.54 kg/day) and buffaloes (8.51 kg/day).

At present only 25% of the breedable bovine females are covered under AI. Current production of 50 million semen doses need to be increased to around 150 million to cover atleast 50% of the breedable population by end of 12th plan. Door step delivery of AI

services is critical to achieving 40-50% conception rate. Creation of appropriately trained manpower and provision of mobility/incentives are necessary.

Milk yield of various types of dairy animals increased at an annual rate of 2.7% to 3.0% during 1990s but decelerated considerably during 2000s. This calls for a technological breakthrough in animal breeding and production to sustain a growth rate of 4% in milk production. Technologies of sexed semen, embryo transfer, and ovum pick up should be integrated in breed- improvement program. In view of climate changing scenario, improvement of indigenous breeds that have potential to contribute and be part of future production system should be identified, evaluated and improvement programs for them initiated/ strengthened on priority. Some of the indigenous cattle breeds with potential are Gir, Red Sindhi, Sahiwal, Kankrej, Rathi etc.

Government of India initiated National Project on Cattle and Buffalo Breeding (NPCBB) in 2000. Under this scheme, 100% grants-in-aid is given to State Implementing Agencies for streamlining storage and supply of liquid nitrogen, conversion of stationery government AI centers into mobile centers, promotion of private mobile AI service for doorstep delivery, strengthening semen stations and bull production and their evaluation for use in semen stations and natural service etc.

A world bank funded project "National Dairy Plan" at a total cost of Rs.1760 crores (Rs.1584.00 crore DA Credit and Rs.176 core GOI share) has been approved for implementation during 12th plan. The project envisages increasing the productivity of milch animals through better organized scientific breeding, strengthening existing semen stations/ starting new stations for producing high quality disease free semen doses, setting up a pilot model for viable doorstep AI delivery services through a professional service provider and increase delivery of semen from present 50 million (of which only 20 million are presently doorstep delivery) to over 90 million (with the bulk comprising doorstep delivery).
Both NCBBP and National Dairy plan have similar objectives, focus, and approach. Both agencies should sit together and work out an action plan for the next 15 years for enhancing bovine productivity, producing quality semen, ensuring 75% coverage through AI with delivery at farmers door step, laying down an effective field recording system, mechanism for production and evaluation of bulls-exotic, crossbreds, indigenous cattle breeds and buffaloes with effective monitoring mechanism.

Sheep and goats

India ranks 3rd in sheep population, next to China and Australia and is placed at the 7th position among the top 10 countries of the world in terms of mutton and wool production. The population of sheep has stagnated except a marginal increase between 2003 and 2007. The wool production has declined to around 40 million kg, of which fine wool is only 10%. The trade policy of permitting import of wool under OGL has affected domestic traditional market.

Goat is one of main species for meat in India. It has all the characteristics required for efficient meat production viz. high prolificacy, more than one breeding season in a year, higher milk production and capacity to bear twins and triplets. Goat meat is preferred and fetches higher prices in national and international markets. In spite of the prejudice against goat rearing due to environmental issues, the population of this species has grown at a faster rate than any other species of livestock.

A centrally sponsored scheme "Integrated development of small ruminants and rabbits' has been under implementation with a budgetary outlay of Rs. 190 crores. Under this scheme, there is a provision for establishment of individual sheep / goat farms through NABARD. The scheme is aimed for women beneficiaries, poor and marginal farmers. The scheme is being implemented through NABARD for individual beneficiaries for setting up of commercial / private units with sheep/goat. However, the financial progress of the scheme has been dismal with only Rs. 11 crores spent during the first four years of the plan, which is just 5% of the approved outlay. Salvaging and rearing of male buffalo calves scheme intends to rear male buffalo calves for meat production and to develop linkages with export oriented slaughterhouses in Andhra Pradesh, Bihar, Chhattisgarh, Jharkhand, Kerala, Madhya Pradesh, Maharashtra, Orissa, Rajasthan, Uttar Pradesh, Punjab and West Bengal. The scheme is being implementing by NABARD and is expected to generate substantial quantity of meat, hides and by-products and also provide direct part employment and indirect employment to people in feed, fodder, meat leather and various input services. Establishment /Modernization of Rural Slaughter Houses schemeunder which slaughterhouses are aimed to be established/ modernized in rural areas and smaller towns to produce wholesome and hygienic meat for supplying to the cities/towns. This way, the loss in the meat sector due to transportation of live animals, shrinkage of meat and environmental pollution in the cities will be prevented. The employment opportunities for further use of fresh hides and skins in the tanneries in vicinity of the slaughterhouses will boost production of quality leather. This scheme is being implemented in three states: Uttar Pradesh, Andhra Pradesh and Meghalaya, initially on pilot basis. The meat importing countries insist for creating facilities for proper disposal of slaughter waste and fallen animals as a sanitary measure. The Central Leather Research Institute (CLRI), Chennai has reported annual mortality of 24 million large animals and 17 million small ruminants. The estimated colossal loss is `985 crore per annum due to non-recovery/ partial recovery of hides/skins and other by-products from the fallen animals. Utilization of Fallen Animals scheme proposes to establish carcass utilization centres in animals density matrix areas and is expected to provide employment to poorest of the poor.

The major emphasis in improving goat production should be on meat (chevon) production through ensuring larger number of kids born per doe per year, improving their survival and body weight gains both in pre-weaning and post-weaning periods till they reach the market weight of around 25 kg at nine months of age when they may be disposed off for slaughter.

Improved fecundity through incorporation of appropriate genes, enhancement of twinning percentage, higher feed conversion efficiency, achieving higher body weight at marketable age, breeding strategies for fine wool production, improved vaccines are some of the important research issues, which have much relevance for achieving higher growth rate of small ruminants.

A two-pronged approach for development of small ruminant sector is essentially called for during the 12th plan period. Since this is the only sector, which provides direct livelihood and income generating opportunities to landless and marginal farmers and the other vulnerable sections of the society, formulation of appropriate schemes for inclusive development of this sector is essential. The second component includes harnessing of the untapped potential in processing and value addition of mutton.

A clear-cut policy direction is needed as to whether sheep production should focus on wool or mutton. Considering the past experience in improving apparel wool production, it would be worthwhile to consider the strategy of raising sheep for fine wool production confining

only to the northern temperate region. Appropriate breeding policy, delivery of input services, assured supply of quality rams, establishment of hygienic and modern slaughter facilities, creation of efficient market linkages and transport logistics are some of the issues which are to be addressed in a holistic manner for the appropriate mutton production.

Pigs

India has 13.84 million pigs and the North Eastern Region (NER) has the highest concentration. In spite of sizeable population, the local pigs are not able to meet the pork demand of North-Eastern states. Bulk of the pigs is non-descript having low productivity. The issue of poor growth and productivity is aggravated as pigs compete with poultry and human beings for feed ingredients.

The issue of non-availability of swine fever vaccine in required quantity as well loss of potency of the vaccine has been a major concern for pig farmers across the country. Emergence of Swine Flu has underlined the need to adhere to the required bio-security measures. Establishment of slaughter houses on scientific lines and other infrastructure for value chain management should receive priority.

A scheme on Piggery Development was started in 11th plan aimed to assist farmers/ landless labourers/cooperatives and Tribal particularly in North-Eastern States by rearing pigs under stall fed condition for quality pork production and organized pork marketing in rural and semi-urban areas with allocation of 150 crores. The funds have remained unutilized.

In order to meet the demand for improved germplasm and breeding animals, there is a need for establishing large pig breeding farms in the NE region for their multiplication. Artificial Insemination (AI) technology should be integrated in breed improvement program. Maize, fiber crops, oil cakes and bran (wheat/rice) are important components of pig feed. Programs to support maize production and fiber crops should be strengthened in the region.

Protection of pigs from Swine Fever in particular is a must. A regional Classical Swine Fever Vaccine production Centre preferably at a central place like Guwahati, Assam is suggested.

A mission on Pig Production with focus on strengthening large pig breeding farms and other infrastructure, incentives for producing feed input materials, improved package of practices, vaccines and diagnostics, pork processing plants and linking of pig producers to markets should be initiated.

Poultry

India has emerged on the world poultry map as the 3rd largest egg (56 billion eggs) and 5th largest poultry meat (2.6 million tons) producer. Total chicken population has registered an annual growth of 7.3% in the last decade. While farm chicken grew at the rate of 12.4%, *desi* chicken showed much lower growth rate of about 2%. Organized sector accounts for nearly 70% of the total poultry output in the country. The progress of the broiler industry is well dominated in the southern states which contribute 60-70% to the total poultry output.

The annual growth in egg production approximated 6% per year. Similarly, in chicken meat production, an average growth rate of about 10% was observed. The annual per capita availability has increased from 7 eggs in 1961 to 52 eggs in 2010; and poultry meat from o.16 kg to 2.96 kg. However, the present availability level is far below the ICMR recommendations of 180 eggs and 11 kg meat per capita per annum.

Over 5 million people are directly or indirectly engaged in poultry sector, apart from numerous small poultry keepers in rural and tribal areas of the country. Superior germplasm of chicken have been developed by both public and private sectors which met the requirement of Indian poultry industry. Faced with the challenges of ever growing feed cost, efforts have also been made to identify, evaluate and efficiently utilize the newer feed stuffs in poultry rations in order to resolve growing competition for the same feed resources. Value-added products utilizing poultry eggs, meat, and culled birds for human consumption have been developed. In organized sector the germplasm used is greatly improved for production as well as for efficiency of production. Presently, a broiler achieves a body weight of ~2 kgs in less than 40 days with a feed conversion ratio of 1.8 to 1.9 and a layer produces > 325 eggs in 52 weeks of production with an average egg weight of 54-58 g and FCR of less than 2.0 kg/dozen of eggs.

There is inadequate infrastructure for processing, cold-chain and strict quality assurance of poultry products in domestic market. Credit facilities for small/medium poultry entrepreneurs are inadequate. Other constraints include occurrence of emerging and re-emerging poultry diseases and lack of adequate linkages between R&D institutions and private sector to get feedback and transfer of proven technology.

Under CSS on Poultry Development with components viz. Assistance to State Poultry Farms (aims at strengthening existing State poultry farms so as to enable them to provide inputs, mainly in terms of providing improved stocks suitable for rural backyard rearing), Rural Backyard Poultry Development (to cover beneficiaries from Below Poverty Line to mainly enable them to gain supplementary income and nutritional support) and Poultry Estates (meant primarily for educated, unemployed youth and small farmers with some margin money for making a profitable venture out of various poultry related activities in a scientific and bio-secure cluster approach), 218 state poultry farms have been benefitted covering most states. Grants were provided to the State Govts for promoting smallholder poultry rearing in rural/tribal areas of the country with refinance from NABARD. Under development of Poultry Estates, two estates were decided to be established on pilot basis in low commercial activity states / region viz. Bihar, Chhattisgarh, Jharkhand, Gujarat, MP, Orissa, Uttarakhand, some districts of UP, and West Bengal, Vidharbha region of Maharashtra and northeastern states.

Central Poultry Development Organizations have been promoting development of poultry through providing quality chicks for identified low-input technology poultry stocks; diversifying poultry rearing towards duck, turkey & emu, quail and guinea fowl; training of trainers, farmers, women beneficiaries, poultry organizations, NGOs, banks, cooperatives and foreign trainees etc. and regular testing of various stocks available in the country to assess their performance. Poultry Venture Capital Fund scheme is to encourage entrepreneurship skills of individuals in various poultry activities. The scheme is now being implemented from 2011-12 on capital subsidy mode. Under the scheme the components like hybrid layer and broiler poultry units, technology up-gradation with revision of unit costs of some components, extension of component of breeding farms for low technology input birds to individuals are included besides the existing components like establishing poultry breeding farms with low input technology birds, feed go-down, feed mill, feed analytical laboratories, marketing of poultry products (specialized transport vehicles, cool room storage facilities and retention sheds for birds etc), egg grading, packing and storage for export capacity etc. The scheme has yielded good result and needs to be continued. Conservation of Threatened Breeds of Livestock is a Centrally Sponsored Scheme initiated during the Tenth Plan covers

all livestock species except cattle and buffalo and aims at conserving and protecting threatened breeds of livestock whose population is about of 10,000 and shows a declining trend. Poultry breeds with a population below 1,000 are considered as threatened. Major modifications made in the revised scheme are as under: i. Strengthening of policy and institutional framework and linkages with research agencies are provided for, besides setting up nucleus breeding units.-ii. Variable project period allowed for small and large animals. iii. The States are required to prepare an inventory of livestock breeds and varieties.

In addition, support to rural poultry is also being made available under Swaranjayanti Gram SwarojgarYojana (SGSY) with particular emphasis on group formation of women and the weaker sections. Under Poultry Seed Project being executed by ICAR, rural chicken germplasm is being further improved, multiplied and distributed to various agencies.

Augmentation and modernization of infrastructure and establishment of hitech laboratories in the area of disease diagnostics & forecasting, feed/food microbiology, feed and poultry processing and quality as per International Standards are essential to face the R&D challenges emanating from rising demands, imbalances in production-consumption systems and growing globalization, etc.

Need-based import of grandparent stock of reputed international brands may be continued with strict enforcement of bio-security measures. Conservation, improvement and utilization of native (indigenous) breeds and newly developed low input chicken are taken up for promoting small scale poultry production in rural and tribal areas.

Poultry farming being a component of agriculture, which is a state subject, needs to be categorized either an industrial or agricultural activity by the state governments so that the concerned stakeholders may reap the benefits accordingly. Other measures for enhancing poultry production include increasing access to micro finance to the smallholders on the lines of crop loans or Kisan Credit Card; removing poultry from the negative list for purpose for extending financial support; increased level of investment in the poultry infrastructure such as cold chain, storage, semi-automatic processing, and providing incentives in the form of subsidy to the poultry exporters.

There is a need for introduction of vocational poultry diploma courses (poultry polytechnics) in SAUs/State Veterinary Universities (SVUs) for matriculates/10+2 students to meet the shortage of middle-level technicians in private sector.

Yak, Mithun, Rabbits, Camel and Equines

The range of products and services provided by yak include; meat, milk, wool and leather, draught power and soil nutrients besides serving as financial asset and security. Provisioning of feed blocks and stock piling of essential medicines and vaccine for 3-4 months together with training of local population in Yak health service delivery would greatly help improving performance. High land pastures need to be identified, developed and protected with adequate fencing.

Though primarily used for meat purposes, Mithun has great potential for quality meat, milk and leather production and there is a great scope to promote this animal as an organic meat and milk producer.

Due to denudation of free range along with the biotic and abiotic stresses, there is urgent need of scientific intervention for proper management as well as conservation of this beautiful hill animal through implementing an effective conservation and improvement program.

Angora rabbit rearing is an important backyard activity mostly limited to the hilly region of Himachal Pradesh and Uttarakhand. Angora wool / hair is presently utilized by the handloom industry for manufacture of angora woolblended yarns and apparels like shawls, mufflers, caps, gloves, socks, stoles, etc. wool/ hair (between Rs. 500 – Rs. 1,100 per kg). Major areas which need intervention of the government to support this venture are pricing policy and setting up of angora wool processing unit with requisite technology / machineries. The stock of German Angora rabbit available is very old and has high levels of inbreeding. Fresh stocks of Angora Rabbits should be imported.

Camel population between 2003 and 2007 showed a decline of 18.2% which mainly was due to increased mechanization, continued shrinkage in grazing resources and increase in command area both under canal and tube well irrigation. The therapeutic value of milk and unique camel immunology for better human health could be considered point of merit necessitating undertaking the conservation and improvement program for camel.

Conservation of Animal Genetic Resources

The farm animal genetic resources in India are represented by a broad spectrum of native breeds of cattle, buffaloes, goat, sheep, swine, equines, camel and poultry. Presently, there are 135 registered breeds of livestock and poultry in India which includes 34 breeds of cattle, 12 of buffalo, 39 of sheep, 21 of goats, 6 of horse and ponies, 8 of camel and 15 of chicken, besides populations/breeds of other species like pigs, mules, donkeys, yaks, mithuns, ducks, quails etc. The large diversity of domesticated livestock and poultry breeds was as a result of adaptational selection within specific ecological niche to meet the local needs.

Focus of Intensive livestock development programs in promoting the universal use of very few improved breeds are increasingly resulting in reduction in population of many of the indigenous breeds. Further, such an approach may lead to reduced and loss of genetic variability within a species. Loss of variability may lead to adverse effects for fitness and adaptive change in animal populations.

Several factors viz. lack of structured/ organized breeding activity in native tract, absence of breeding societies, non registration of animals of a particular breed etc. have contributed to intermixing of breeds resulting in their dilution.

Indigenous breeds' hold considerable advantages in terms of their adaptation characteristics, production potential under low inputs and harsh environment, valuable genetic makeup, and providing opportunity of employment and income to rural poor. However, these breeds are in danger of disappearing, pushed out by modern production techniques and out-competed by exotic breeds and their crossbreds. Social changes have also greatly influenced AnGR especially small ruminants because present generation is not keen to continue their ancestral occupation of rearing livestock in migratory system of grazing. This calls for an immediate action for systematic conservation, genetic improvement and sustainable utilization of indigenous livestock breeds

Insitu models of conservation have been developed by NBAGR by providing technical inputs and incentives to the farmers/breeders in the breeding tract of respective farm animal breeds. A National Animal Gene Bank has been established at NBAGR which has about 80,000 cryopreserved semen doses representing of 27 breeds of seven species. Animal Genomic Resource Bank has collection of genomic DNA from 130 breeds/populations of livestock and poultry. It also has buffalo mammary gland EST library.

There is no regular system of monitoring of the breeds at risk. Insufficient manpower and infrastructure also hinder implementation of programs. Almost all the conservation programs on AnGR are funded and implemented by government agencies and participation of farmers and private sector is negligible. Absence of breeders' organization barring few, make the implementation of conservation program more difficult and not sustainable.

Conservation of threatened breeds does not appear to be a priority for the States who are more concerned with enhancement of production and productivity of livestock. Conservation of AnGR should therefore be a national responsibility and the scheme on conservation should be implemented with 100 percent central assistance. Considering the poor reliability of breed census carried out in the present form, it would be desirable to take carry out a separate livestock breed census with involvement of State Animal Husbandry Departments and Veterinary Colleges where skilled manpower exists for proper identification of breed specimens.

A legal framework for implementation of breeding policies and performance recording in the field and legislation for protection of Animal Breeds and Animal Keeper's rights in line with Protection of Plant Variety and Farmers Right Act should be put in place. All the existing livestock farms with state/central govt. should be declared as in-situ conservation centers of indigenous breeds. There must be at least one farm for each breed in its native tract. Wherever need be, new farms may be established/supported.

A mega scheme on Conservation of AnGR should be taken up by enlarging the scope of ongoing central sponsored scheme. The revised scheme should have the following components - sample survey, establishment/ strengthening of nucleus farms, characterization and documentation of lesser known breeds/populations, formation of breed societies/associations, value addition through identification and exploitation of breed specific unique products, propagating pharmaceutical / nutritional properties of animal products, and their commercialization for enhancing utility of local breeds, and strengthening of National Gene Bank.

There should be a Central Steering committee for proper monitoring and coordination among project implementation agencies (SAHD, SLDB, SAUs, Veterinary Universities, Vet/Animal Sci. Colleges, Research Institutes, NGOs) for conservation of AnGR.

Feed and Fodder Development

India, with only 2.29% of the land area of the world, is maintaining about 10.71% of the world's livestock population. The area under fodder cultivation is estimated to be about 4% of the gross cropped area which has remained static for the last four decades. The grazing lands are also gradually diminishing because of other competing pressures on land.

It is estimated that the 60-70% of total cost in livestock production is due to feed and fodder. Over the last two decades, the country as a whole recorded 52% (240.7 to 365.8 Mt), 76.0%

(19.6 to 34.5 Mt) and 1.8% (124.3 to 126.6 Mt) increase in crop residues, concentrates and green forages respectively. In spite of this, there is a gap in the availability vs. requirement. As per estimates, the deficit of dry fodder, concentrates and green fodder currently is 10, 33 and 35 percent respectively, which by 2020 is likely to be 11%, 35% and 45%.

Fodder seed production at different stages, its availability, market linkages, and seed replacement rate are few of the issues of concern. Only 25% of forage seeds are available, that too of 15-20 years old varieties.

The government has identified the following priority areas with respect to ensuring availability of feed and fodder:

a) Optimum utilization of land resources
b) Improving fodder production by promoting high yielding fodder varieties
c) Adopting suitable crop combinations to ensure higher returns
d) Improvement of grasslands/wastelands, and other community lands
e) Promoting fodder species in forest areas
f) Conservation and Utilization of Crop Residues / Bye-products
g) Development of Fodder Banks
h) Strengthening of Extension activities
i) Convergence of fodder schemes with MGNREGA
j) Reduce post harvest losses

To assist the State Governments in their efforts to overcome the shortage of feed and fodder and to improve the nutritive value of livestock feed, this department is implementing following two schemes:
1) Central Fodder Development Organization, and
2) Centrally Sponsored Fodder and Feed Development Scheme

Fodder and Feed Development Scheme: This scheme originally had nine different components, viz., establishment of fodder block making units, grassland development including grass reserves, fodder seed procurement and distribution, strengthening of feed testing laboratories, introduction of hand driven and power driven chaff cutters, establishment of silage making units, demonstration of azolla cultivation and production units, establishment of by-pass protein production units and establishment of area specific mineral mixture / feed pelleting / feed manufacturing unit. For the year 2012-13, a new component of 'establishment of fodder banks' was also added to the scheme in view of the drought situation in the country.

Central Fodder Development Organization: Under this scheme, seven Regional Stations for Forage Production & Demonstration located in different agro-climatic zones of the country and one Central Fodder Seed Production Farm, Hessarghatta, Bangalore are being operated. Besides these, Central Minikit Testing Programme on Fodder Crops is being funded under this scheme.

The by-pass nutrient technology has been taken up by private feed manufactures as well as NDDB & dairy federations and benefits of this technology have percolated at the ground level. The Area Specific Mineral mixture technology has helped to a considerable extent in overcoming the problem of infertility at field level.

The key driving forces for feed and fodder development in the coming years would be on productivity enhancement, shift to semi-intensive/ commercial production systems and convergence with other flagship schemes of the government like MNREGA, RKVY, Watershed program etc. The countervailing forces that may restrict the development are non-availability of sufficient quantity of quality fodder seeds and lack of appropriate extension services.

The Centrally sponsored scheme of Fodder and Feed development with its sub components was expected to address the problem of feed and fodder shortage. Some of sub component of the Fodder and Feed development scheme like Fodder Mini Kit Scheme are quite popular among the farmers. However, the insufficient quantity of kits, time of supply and supply of seeds not preferred by farmers has over the years hampered the progress of the scheme to a great extent. Under the Central sector scheme of Central Fodder Development Organization, the AH department has large infrastructure available in its seven regional stations and one unit of Central fodder seed production farm located in different agro-climatic regions of the country. These units have served limited purpose and outcomes have not been commensurate with the investments made.

The expansion of area under cultivated green fodder crops in the coming years would essentially be demand driven and based on benefit – cost factor as demonstrated in Punjab. Establishment of commercial dairy farms with high productive cattle and buffaloes has created a higher demand for green fodder which consequently has resulted in dairy farmers taking up large scale cultivation of fodder maize crop either on their own land or on leased land.

Excessive stocking pressure and degeneration of the original pasture grasses has led in to decline biomass productivity from these resources. A comprehensive strategy for rejuvenation of these important resources is required.

Efforts need to be focused on augmenting the existing feed resources by tapping non-conventional feed resources. Promotion of fodder cactus in arid ecosystem especially in states of Rajasthan and Gujrat may be taken up during 12th Plan period. The use of by-pass nutrients, promotion of area specific mineral mixtures, fodder enrichment and densification could be some of the focused areas for enhancing the productivity and thereby furthering the growth of the sector. A 'National program on livestock feed and fodder' be formulated and implemented in a Mission Mode. The scheme so developed has not only to address the issue of green fodder seed production but also encompass other aspects like area expansion of green fodder, fodder conservation, fodder densification, establishment of fodder banks, and nutritional enhancement of crop residues, capacity building, and extension.

Animal Health

There are a total of 8,732 veterinary hospitals/ polyclinics and 18,830 veterinary dispensaries in the country providing services for the large livestock population. Not only is their number grossly inadequate compared to the requirement, these also have poor infrastructure in terms of dilapidated buildings, lack of equipments, etc. The polyclinics, wherever established, lack the adequate infrastructure for surgical interventions and diagnostic imaging. There is acute shortage of manpower to manage these institutions and provide required services.

The present disease reporting is neither timely nor complete. An authentic epidemiological data for realistic assessment of the prevalence and emergence of these diseases in different agro-climatic zones is essential not only for identification and prioritization of the most

important diseases but also their prevention and control by making judicious use of available resources.

National Disease Control Program involves the vaccination of all susceptible livestock against major infectious diseases. Except for FMD vaccine, production of most other vaccines is with the state biological units. The biological production centers available in the Govt. sector (both state and central) are old, obsolete, do not comply with the GMP requirements, and are not having contemporary technologies and infrastructure to meet the requirements. The availability of qualified man power to run these institutions are also not available.

Directorate of Animal Health

(a) Animal Quarantine and Certification Service: The objective of this service is to prevent ingress of livestock diseases into India by regulating the import of livestock and livestock related products, and providing export certification of International Standards for livestock and livestock products which are exported from India. The scheme helped to prevent the entry of exotic diseases like Mad-cow disease (BSE), African swine fever and contagious equine metritis.

(b) National Veterinary Biological Products Quality Control Centre, Baghpat: The National Institute of Animal Health has now been established at Baghpat, Uttar Pradesh to undertake the testing of vaccines and biologicals for their quality.

(c) Central/Regional Disease Diagnostic Laboratories: In order to provide referral services over and above the 250 existing disease diagnostic laboratories in the States, one Central and five Regional disease Diagnostic Laboratories have been set up by strengthening the existing facilities. The Centre for Animal Disease Research and Diagnosis (CADRAD) of Indian Veterinary Research Institute, Izatnagar is functioning as Central Laboratory.

Livestock Health & Disease Control scheme: In order to effectively tackle the issue of livestock health, the Department is supplementing the activities of the state Governments by way of providing assistance through Centrally Sponsored Scheme 'Livestock Health & Disease Control' having following major components:

a. Assistance to States for Control of Animal Diseases Under this component, assistance is provided to State/Union Territory Governments for control of economically important diseases of livestock and poultry by way of immunization, strengthening of existing State Veterinary Biological Production Units, strengthening of existing Disease Diagnostic Laboratories and inservice training to Veterinarians and Paraveterinarians.

b. Professional Efficiency Development: The objective is to regulate veterinary practices and to maintain the register of the veterinary practitioners. The programme envisages establishment of Veterinary Council of India at Centre and State Veterinary Councils at State level in those States/Union Territories which have adopted the Indian Veterinary Council Act, 1984. The Act has been extended to all the sates and UTs except J&K.

c. National Project on Rinderpest Eradication: The main objective of the scheme is to strengthen the veterinary services to maintain required vigil to sustain the country's freedom from Rinderpest & Contagious Bovine Pleuro-pneumonia (CBPP) infection secured in May 2006 and May 2007 respectively. Physical surveillance through village, stock route & institutional searches to detect any re-occurrence of Rinderpest

and Contagious Bovine Pleuro-pneumonia (CBPP) is being undertaken throughout the country to maintain India's freedom status from these diseases.

d. Foot and Mouth Disease Control Program (FMD-CP) has been implemented in 221 districts in Phase I with 100% central funding towards cost of vaccine, maintenance of cold chain and other logistic support to undertake vaccination. The program has lead to reduced incidence of disease and hence, it should be extended to whole country in the 12th Plan.

e. National Control Programme of Peste des Petits Ruminants: The Peste des Petits Ruminants (PPR) is a viral disease characterized by high fever, inflammation of the gastro-intestinal tract leading to necrosis and ulceration of the mucous membrane and diarrhea. The government has initiated NCP-PPR with the ultimate objective to eradicate this disease from the country in a time-bound manner on the lines of Rinderpest eradication. The program involves vaccinating all susceptible goats & sheep and their three subsequent generations. This program should be continued and extended to areas left out in the previous plan.

f. National Control Program on Brucellosis initiated in 2010 which envisages mass screening of cattle & buffaloes to ascertain exact incidence of the disease and vaccination of all female calves using S-19 vaccine should be continued. The vaccine production also needs to be enhanced to fulfil the targets and incorporation of DIVA tests will be an added asset towards control of brucellosis.

g. Establishment and Strengthening of Existing Veterinary Hospitals and Dispensaries: In order to help the states to set up infrastructure for new veterinary hospitals and dispensaries and to strengthen/equip the existing ones, the department is providing funds on 75:25 (Centre: State) sharing basis except NE States, where the grants are provided on 90:10 basis.

h. National Animal Disease Reporting System: In order to streamline the system it was decided to have a web based IT system for reporting the diseases from the field level. Accordingly, the National Animal Disease Reporting System (NADRS) was conceived as IT based system under the Centrally Sponsored Scheme "Livestock Health & Disease Control", which is being executed through National Informatics Centre (NIC). The main objective of NADRS is to record and monitor livestock disease situation in the country with a view to initiate preventive and curative action in a timely and speedy manner.

Avian Influenza: Preparedness, Control and Containment:

i. The Action Plan on "Preparedness, Control and Containment of Avian Influenza" has been revised in 2012 and was circulated to the State/UT Governments for implementation.

ii. Culling of entire poultry population in the affected zone of 0-1 Km.

iii. Continuous strengthening of preparedness to tackle any future eventuality in terms of upgradation of laboratories, training of manpower, stockpiling of materials for control and containment etc.

iv. Training veterinary personnel in preparedness, control and containment is continuing. About 90% veterinary workforce in the country has been trained to handle control and containment operations. Besides, 44395 number of community workers have been trained on reporting of Avian Influenza expeditiously.

v. To strengthen the diagnosis of Avian Influenza, four pre-fabricated Bio-Safety Level 3 (BSL 3) laboratories have been established at Jalandhar, Kolkata, Bangalore & Bareilly. The laboratories at Jalandhar, Kolkata and Bangalore are already functional. The laboratory at Bareilly will be functional in one month. 23 State Disease

Diagnostic Laboratories are being upgraded to BSL 2 level, out of which seventeen laboratories are already functional. The remaining are at various stages of completion.

vi. Reserve of essential material for control operations have been developed and are being expanded further.

vii. Sensitization of general public on Avian Influenza through Information, Education and Communication (IEC) campaigns.

viii. Transparent approach towards reporting not only outbreaks but also information of unusual sickness/mortality in poultry and results of laboratory diagnosis.

ix. All the state governments have been alerted to be vigilant about the outbreak of the disease, if any.

x. Imports of poultry and poultry products have been banned completely from HPAI positive countries.

xi. Border check posts with neighboring countries have been alerted.

xii. Advisories are issued to the states for further guidance of poultry farmers from time to time on various aspects of disease control, surveillance and importance of biosecurity.

xiii. Government is also implementing FAO project on "Immediate technical Assistance to strengthen emergency preparedness for Highly Pathogenic Avian Influenza (HPAI) in India" with aim to build capacity to improve surveillance and epidemiology of Avian Influenza in both Domestic and wild birds.

Managing livestock diseases through prophylactic controls with strong laboratory diagnostic system is essential to enhance productivity and reduce losses due to diseases. The ongoing schemes should be further strengthened. The following actions are suggested:

i. The existing scheme 'Livestock Health and Disease Control' should continue with additional components of strengthening and establishing disease diagnostic laboratories throughout the country.

ii. ii. A large component of Mobile Veterinary Clinics should be supported for doorstep delivery of veterinary services with a provision of at least one mobiles clinical van in each of the 6350 blocks in the country.

iii. There is a need to establish a dedicated Centre for Disease Surveillance and Epidemiology for important animal diseases including trans-boundary animal diseases at the central level. The surveillance system must be statistically valid and ongoing.

iv. For meeting the Minimum Standard of Veterinary Education Regulations, the existing Govt. Veterinary colleges should be provided one time catchup grant for development of the infrastructure

v. Animal quarantine and certification services should be further strengthened by establishing both sea, air and land quarantine stations. The quarantine stations should have the required technical, scientific, and supporting staff to deliver this responsibility. Linkages with veterinary universities and colleges for providing the services to manage the quarantine stations should also be explored. The possibility of involving private sector for providing these services should also be examined.

vi. The whole sector of vaccine production should be privatized and a strong government regulatory mechanism for ensuring the desired standards of production and quality of vaccines, drugs and biological put in place. A separate Veterinary Drug Control Authority which was recommended in 11th plan for establishment is still awaited.

vii. An integrated, national laboratory diagnostic network with defined capabilities along with dedicated funding to ensure ongoing sustainability and a national integrated surveillance system must be established and made operational. Linkages of field diagnostic laboratories with academic and research institutions would further add competence to diagnostic network.

Dairy Processing, Value Addition and Marketing

The per capita availability of the milk has reached a level of 290 grams per day during the year 2011-12, which is more than the world average of 284 grams per day. Most of the milk in the Country is produced by small, marginal farmers and landless labourers. About 14.78 million farmers have been brought under the ambit of 1, 48,965 village level dairy corporative societies up to March 2012.

While milk production has grown at about 3.5% annually in the recent past, milk consumption has been growing at about 5% per annum. Value-added products, though growing, still have a relatively small share in the total dairy market. Cooperative and private sectors share nearly half-and-half of the marketable milk surplus. However, the cooperatives market liquid milk more than milk products unlike the private processors who produce more of dairy products.

The recently promulgated Food Safety & Standard Regulations 2011 mandates that milk should be handled hygienically and kept cold (4°C) all along the farm-to-plant route. This implies that adequate cooling facilities (equipment as well as power supply) will have to be made available if the rules are to be complied with. Further, the above-said government regulations also require that all individual milk producers (except those who are members of a dairy cooperative) be registered with the local authority. This scheme is expected to help ensure milk quality and safety, provided that it is implemented in such a way that it would promote milk production rather than hindering it.

Testing of milk for safety and quality parameters at the collection centres is almost non-existent. Other than ghee, several traditional Indian dairy products seem to have a considerable potential for export which can be realized only through the mechanized and hygienic production, as well as by the application of latest packaging techniques to ensure the quality and safety of the products.

Centrally-sponsored Scheme of 'Integrated Dairy Development' which was launched in 1993-94 for the non-operation Flood areas, hilly areas, was subsequently modified as 'Intensive Dairy Development Programme' in March 2005. The main objectives of the scheme are as under: a) Development of milch cattle b) Increasing milk production by providing technical input services c) Procurement, processing and marketing of milk in a cost effective manner d) Ensure remunerative prices to the milk producers e) Generate additional employment opportunities f) Improve social, nutritional and economic status of residents of comparatively more disadvantaged areas. Relevance and continuation of this scheme should be examined in light of the National Dairy Plan.

The Central scheme of 'Assistance to Cooperatives' with a funding pattern of 50:50 sharing basis between Centre and State is in operation since 1999-2000 with the objective of re-vitalizing sick dairy cooperative unions at district level and cooperative federations at state level. A large number of milk unions/state milk federations continue to have accumulated losses for various reasons and supporting these sick units on a continuous basis needs a comprehensive relook.

The scheme 'Venture Capital Fund for Dairy and Poultry Sector' was initiated in 2004. During 11th Plan, after separating the poultry component the scheme was implemented as 'Dairy Venture Capital Fund' with a financial outlay of Rs.250 crore. The scheme has the primary objective of providing financial assistance for organised development of dairy sector

and is being implemented by NABARD. The scheme has again been modified based on inputs of an independent evaluation agency, banks and beneficiaries and is being implemented as Dairy Entrepreneur Development Scheme (DEDS) since 1st September 2010. Removal of restrictions of limiting only to non – OF areas and providing back end subsidy instead of loan component in the new scheme appears to be steps initiated in the right direction.

Under scheme on strengthening infrastructure for quality & clean milk production farmers are trained for good hygienic practices; provide with bulk milk coolers and new laboratories are set up to ensure good quality milk production.

National Dairy Plan-1: NDP-I will help to meet the projected national demand of 150 million tonnes of milk by 2016-17 from domestic production through productivity enhancement, strengthening and expanding village level infrastructure for milk procurement and provide producers with greater access to markets. The strategy involves increasing the genetic potential of bovines, producing required number of quality bulls, producing superior quality frozen semen and adopting adequate bio-security measures. The scheme will be implemented by NDDB through end implementing agencies (EIAs) comprising of State Livestock Boards, State Cooperative Dairy Federations, District Cooperative Milk Producer Unions, Producer Companies, Trusts (NGO's, Section 25 companies), subsidiaries of statutory bodies, ICAR institutes and Veterinary/ Dairy Institutes/Universities etc. NDP-I would focus on 14 major milk producing States - Uttar Pradesh, Punjab, Haryana, Gujarat, Rajasthan, Madhya Pradesh, Bihar, West Bengal, Maharashtra, Karnataka, Tamil Nadu, Andhra Pradesh, Orissa and Kerala which account for over 90% of the country's milk production. Coverage of NDP- phase- I will however be across the country in terms of benefits accruing from the scheme. The key components of NDP I are i) Breeding: ii) Scientific nutrition programme for milch animals: iii) Village based milk procurement systems: iv) Project Management and Learning.

Post Operation Flood and Consolidation of Cooperative Movement by NDDB: The National Dairy Development Board (NDDB) with headquarters at Anand in Gujarat (India) is a statutory body corporate. NDDB promotes plans and organises programmes for the development of dairy and other agriculture based and allied industries along cooperative lines and also provides assistance in the implementation of such programmes. During 2011-12, NDDB continued to provide technical and financial support to dairy cooperatives in the areas of strengthening cooperative business, productivity enhancement, quality assurance, building dairy infrastructure and for creation of a national information network. For animal breeding, NDDB facilitated the finalization of Standard Operating Procedures (SOPs), Minimum Standards (MS) and evaluation procedure for Progeny Testing (PT) programmes, Pedigree Selection (PS) programmes, Frozen Semen Stations and AI Training institutions. As a result of continued technical support provided to Cooperative Cattle Feed Plants (CFPs), feed and feed supplements were produced in accordance with laid down specifications. Many CFPs produced feeds for high yielding animals and calf starter for young calves. NDDB continued to promote the use of bypass protein supplement/feed. NDDB's Research and Development laboratory at Hyderabad developed a new, innovative, practical and cost effective technique, loop mediated isothermal amplification (FT-LAMP) for the rapid detection of foot and mouth disease (FMD) virus serotypes was standardized which can now be exploited as a penside test. The diagnostic ELISA for bovine brucellosis, developed by the laboratory was further evaluated in the field for improving its specificity. Results of the immune-capture-ELISA developed for early diagnosis of bovine tuberculosis (TB) by gamma interferon assay using

recombinant antigens of Mycobacterium spp. were highly encouraging. The laboratory continued research on developing improved vaccines. Virus like particles (VLPs) of FMD virus and canine parvovirus has been developed and their efficacy is being evaluated by animal studies. NDDB assists dairy cooperatives and producer institutions in the production of safe and quality milk and milk products through adoption of technology driven, economically viable and environment friendly approaches covering entire chain from primary production to marketing. The Dairy Board's initiatives also focus on implementation of food safety and quality management systems by the dairy plants and undertaking programmes for capacity building and skill up-gradation of their manpower in quality improvement and compliance with emerging regulatory environment. NDDB Dairy Services facilitated the Producer Companies in framing the Articles and Memorandum of Association and in raising share capital from the members.

Delhi Milk Scheme (DMS) was set up in 1959 with the primary objective of supplying wholesome milk to the Citizens of Delhi at reasonable prices as well as for providing remunerative prices to milk producers.

Government may consider making anaerobic waste treatment obligatory for dairy plants handling more than say, one lakh litres of milk per day. This will ensure environmental benefits and also provide significant quantity of energy for dairy operations. In fact, we can think in terms of commissioning an organization on the lines of Carbon Trust of UK which oversees the energy issues of the food processing industry.
Among the dairy by-products whey is one of the important by product. Currently, only few dairy plants are having facilities and technology for whey utilization at large scale. Some incentives in the form of tax holiday may be given to by-product industry to attract private investment in this sector.

Fisheries
Fisheries sector contributes significantly to the national economy while providing livelihood to approximately 14.49 million people in the country. It has been recognized as a powerful income and employment generator as it stimulates growth of a number of subsidiary industries and is a source of cheap and nutritious food besides being a source of foreign exchange earner. The main challenges facing fisheries development in the country include development of sustainable technologies for fin and shell fish culture, Fish Seed Certification, yield optimization, infrastructure for harvest and post-harvest operations, landing and berthing facilities for fishing vessels and uniform registration of fishing vessels.

Fisheries is a State subject and as such the primary responsibility for its development rests with the State Governments. The major thrust in fisheries development has been on optimizing production and productivity, augmenting export of marine products, generating employment and improving welfare of fishermen and their socioeconomic status.

Development of Inland Fisheries and Aquaculture: The scheme covers all inland fishery resources available in the country in the form of freshwater, brackishwater, coldwater, waterlogged areas, saline/alkaline soils for aquaculture and capture fishery resources (reservoir/rivers etc.). The scheme has been implemented with seven components namely, Development of Freshwater Aquaculture, Development of Brackishwater Aquaculture, Development of Coldwater Fisheries and Aquaculture in the Hilly Regions, Development of Water-logged Areas into Aquaculture Estate, Utilization of Inland Saline/Alkaline Soils for Aquaculture and Inland Capture Fisheries (Reservoirs/ Rivers etc.) and Innovative Projects

for implementation in the 12th Five Year Plan. Development of Freshwater Aquaculture aims to popularize modern fish farming, creating employment opportunities and diversifying aquaculture practices and providing assistance to fish farmers engaged in aquaculture. Assistance in the form of subsidy is given to the fish farmers for construction of new ponds, reclamation/ renovation of ponds and tanks, first year inputs (fish seed, fertilizers, manures, etc.), integrated fish farming, running water fish culture, establishment of fish seed hatcheries and fish feed mills, etc. Assistance is also given to progressive fish farmers for purchase of aerators to further enhance the productivity of fish. The expenditure towards developmental activities is being shared on 75:25 basis between the Government of India and State Governments.

Based on Zero Based Budgeting (ZBB) exercise, the ongoing schemes were brought under a comprehensive scheme since 10th Five Year Plan on wards, titled '**Centrally Sponsored Scheme on Development of Marine Fisheries, Infrastructure and Post Harvest Operations**' with necessary modifications. The scheme for 11th Five Year Plan has three major components viz. (i) Development of Marine Fisheries, (ii) Development of Infrastructure and Post Harvest Operations and (iii) Provisions to take up of Innovative Activities.

(i) **Development of Marine Fisheries:** Motorization of Traditional Craft, a production oriented scheme was introduced during 7th Plan with the objective of (i) technological upgradation of traditional fishing sector, (ii) to help the fishermen to reduce their physical strain and (iii) to extend the range of their fishing operation primarily to increase the quantum of fish catch, income and thereby to uplift their socio-economic status. Under Safety of Fishermen at Sea component, subsidy is provided to the tune of 75 % of unit cost of a kit consisting of GPS, communication equipment, echo-sounder and search & rescue beacon. The Fishermen Development Rebate on HSD Oil scheme for reimbursement of Central Excise Duty on HSD oil used by fishing vessels below 20 meter length was introduced from 1990-91 onwards with a view to help the small mechanized vessels owners/operators to bring down the operational cost of these vessels and thereby to encourage them to increase the fishing days, fish catch and income. Introduction of Intermediate Craft of Improved Design component was brought about because out of the estimated 4.41 million tonnes of potential marine fisheries resources, about 3.37 million tonnes potential has been exploited. The remaining potential exists mainly in the deep sea, which is beyond the fishing capacity of the smallscale fishing boats. Adequate number of appropriately designed boats would be required to judiciously exploit the fisheries potential of the country's EEZ. Accordingly, this component was included in the macro scheme to acquire an appropriate design and to provide the financial incentives to fishermen groups to take up new generation craft. Establishment of operation of Vessel Monitoring System component has been implemented because Vessel Monitoring System (VMS) has been recognized as one of the important management tools for Monitoring, Control and Surveillance (MCS) of movement of fishing vessels in the EEZ. "Promoting fuel efficient and environment friendly fishing practices" is a new component introduced during the 11th Plan. Fishermen by and large use traditional fuels like kerosene, diesel and petrol for operating their engines. These fuels not only pollute the air but also slowly deteriorate the marine environment. Further, the spiraling price of these conventional fuels is making the fishing venture increasingly uneconomical. Shortage of kerosene through PDS has already put burden on fishermen in certain States. In order to

overcome this, the LPG kit for use on OBMs is a recent development through sustained R&D efforts. The results obtained from a pilot study indicates positive factors such as reduced wear and tear to the engines, lower cost of operation and a substantial reduction in emissions. The use of LPG kit in OBMs is being encouraged to undertake environment friendly fishing. Management of Marine Fisheries component has been initiated because the exploitation of fisheries resources in the territorial waters have either reached the optimum level or exceeded in certain instances, focus has to be shifted to scientific management of our marine fisheries with development of appropriate tools and techniques in harmony with international guidelines in the matter. This new component aims at initiating science-based management of marine fisheries. The activities undertaken under this component include (i) conducting awareness programmes, (ii) implementing Code of Conduct for Responsible Fisheries (CCRF), (iii) capacity evaluation, (iv) undertaking community outreach programmes on sustainable fisheries and (v) production of Audio visuals on over fishing/over capacity.

(ii) **Development of Infrastructure and Post Harvest Operations:** In order to meet the infrastructure requirement of fisheries sector, a centrally sponsored scheme, with the objective of providing infrastructure facilities for safe landing and berthing of traditional fishing craft, mechanized fishing vessels and deep sea fishing vessels had been initiated in 1964. Since Tenth Five Year Plan, the scheme has been merged with the CSS on Development of Marine Fisheries, Infrastructure and Post Harvest Operations as a component on 'Establishment of Fishing Harbours and Fish Landing Centres'. The Central financial assistance under this component is provided to various implementing agencies consisting of (i) 75% to Coastal States, Port Trust, Fishermen Cooperative Societies / Organizations/Associations and 100% to UTs for (a) construction of minor fishing harbours and fish landing centres; and (b) upgradation/expansion/repair/renovation of existing minor fishing harbours and fish landing centres, (ii) 100 % assistance to Coastal States, Port Trust, Fishermen Cooperative Societies/Organizations / Associations for construction of major fishing harbours, including expansion/ modernization of existing major fishing harbours and (iii) 50 % assistance to Private Entrepreneurs for construction of major/ minor fishing harbours and fish landing centres on Build, Operate & Transfer (BOT) basis. Strengthening of Post-Harvest Infrastructure component under the ongoing plan period consists of four sub-components namely (i) Developing fish preservation and storage infrastructure, (ii) Developing retail fish marketing infrastructure, (iii) Assistance for fish transport infrastructure and (iv) Development of Central Fish Markets in metros and big cities. Under the Assistance for Maintenance of Dredging of Fishing Harbours and Fish Landing Centres component a Trailing Suction Hopper Dredger 'TSD Sindhuraj' has been procured under the Japanese Grants-in-aid programme with an aid of Japanese Yen 1,248.00 million. The operation and maintenance of the dredger has been carried out through the Department of Ports, Government of Kerala, for which the maintenance cost and insurance etc. is borne by the Centre under the scheme. Besides, central assistance to the tune of 50 % of the cost of dredging/de-silting at existing fishing harbours and fish landing centers has been provided to various implementing agencies for dredging/de-silting of existing fishing harbours and fish landing centres.

(iii) **Provision for Taking up Innovative Activities** is a new component introduced under the CSS during the 11th Five Year Plan period. Under this component, financial assistance is provided for taking innovative activities in marine fisheries/infrastructure, human resource development, strengthening of fisheries management, monitoring, evaluation and R & D studies in fisheries.

National Scheme for Welfare of Fishermen: This scheme has the following four components: - (a) Development of Model Fishermen Villages; (b) Group Accident Insurance for Active Fishermen; (c) Saving--cum--Relief and (d) Training and Extension. **Development of Model Fishermen Villages:** The objective of the component is to provide basic civic amenities such as housing, drinking water and construction of community hall for fishermen. A fishermen village may consist of not less than 10 houses. The villages would be provided with tube wells at the rate of one tube well for every 20 houses. For recreation and common working place, a fishermen village with at least 75 houses is eligible to avail financial assistance for construction of a community hall. **Group Accident Insurance for Active Fishermen:** active fishermen are insured for `1,00,000/- for one year against accidental death or permanent total disability and `50,000/- for permanent partial disability. The upper limit for insurance premium is `30/- per head. 50 % of the annual premium is subsidized as grants in aid by the Centre and remaining 50 % by State Governments. **Saving-cum-Relief:** The objective of this component is to provide financial assistance to fishermen during lean fishing season. Under this component, beneficiary has to contribute a part of the earnings during non-lean months. **Training and Extension:** To enhance training facilities, the Scheme has provision to extend assistance for setting up/up gradation of training centres in States/Union Territories.

Strengthening of Database and Geographical Information System for Fisheries Sector: The Scheme consists of following components:

a) Sample survey for estimation of inland fishery resources and their potential and fish production: Sample survey to prepare benchmark estimates of inland fish production along with potential of inland fish production and productivity, was conducted in the initial years of 11th Five Year Plan. It is now proposed to conduct pilot study for production potential of 22bdistricts of three States, namely, Haryana, Karnataka and Assam.

b) Census on marine fisheries: The Census on Marine Fisheries was conducted in 2010 entrusting Central Marine Fisheries Research Institute (CMFRI), for mainland, and Fishery Survey of India (FSI) for Andaman & Nicobar Islands and Lakshadweep.

c) Catch assessment survey for inland and marine fisheries are conducted on regular basis and the States are furnishing quarterly estimates of fish production based on data collected through sample surveys

d) Development of GIS: inland waterbodies of area 0.5 ha. and above were mapped during 10th Five Year Plan using satellite images of LISS III in all the States and LISS IV in five States. During 11th Five Year Plan, LISS IV images are being used for all the States and coverage of water body, greater than 0.5 hectare, will be taken

e) Assessment of fish production potential in coastal areas

f) Evaluation Studies/professional services (g) Registration of fishing vessels: This component is implemented in nine coastal States and four UTs besides establishing requisite infrastructure facilities for creation of centralized database in Department of Animal Husbandry, Dairying and Fisheries, New Delhi. Under this component, 100 % central financial assistance is provided to all Coastal State Governments, UTs and

National Informatics Centre (NIC) for development of required software and creation of necessary infrastructural facilities. Besides, entire cost for development of centralized database in New Delhi and its management, maintenance and operation will be met under the Scheme.

g) Development of database of fisheries cooperative of India: FISHCOPFED will conduct survey and record the facilities available with primary level cooperative societies in 30 States and 4 UTs of India.

h) Mapping of smaller water bodies and development of GIS based fishery management system: This component will be implemented in State of West Bengal on pilot basis

i) Strengthening of Statistical Unit at Headquarters.

Assistance to Fisheries Institutes:

a. **Central Institute of Fisheries, Nautical and Engineering Training (CIFNET), Kochi:** Central Institute of Fisheries, Nautical & Engineering Training (CIFNET) was established in 1963 by the Ministry of Agriculture, Government of India at Cochin. Further two units of the institute were set up at Chennai and Visakhapatnam. The primary objective of the institute is to make available sufficient number of trained operatives for fishing vessels and technicians for shore establishments.

b. **National Institute of Fisheries Post Harvest, Technology & Training (NIFPHATT), Cochin:** The Integrated Fisheries Project was renamed by the Government of India in 2008 as National Institute of Fisheries Post Harvest Technology & Training.

c. **Fishery Survey of India (FSI):** The Fishery Survey of India (FSI) is responsible for survey and assessment of marine fishery resources of the Indian EEZ with its headquarter at Mumbai. Besides resources surveys, the FSI monitors the fishery resources for the purpose of regulation and management, makes an assessment of suitability of different types of craft and gear for deep-sea and oceanic fishing, imparting in-vessel training to CIFNET/Polytechnic trainees, disseminates information on fishery resources through various media to the fishing community, industry, other end users, etc. The Institute has also been acting as an interface between the Ministry of Agriculture and the State fisheries in collecting and compiling the marine fish landing statistics.

d. **Central Institute of Coastal Engineering for Fishery (CICEF), Bangalore:** The Central Institute of Coastal Engineering for Fishery (CICEF), was established in January 1968, under technical and manpower assistance from the Food and Agriculture Organization (FAO) of the United Nations Development Programme (UNDP). The main objectives of establishing this Institute were to identify potential fishery harbour sites existing all along the coastline of the Country for the development of fishery harbours, to undertake engineering and economic investigations for the selected fishery harbour sites and prepare technoeconomic feasibility reports (TEFR) for the development of Fishing Harbours and Fish landing Centres, Brackish water shrimp farms and hatchery projects.

e. **National Fisheries Development Board (NFDB)** National Fisheries Development Board (NFDB) was set up in September 2006 with its headquarter at Hyderabad to realize the untapped potential of fisheries sector, fish culture, processing & marketing of fish, application of modern tools of research & development for optimizing production and productivity in fisheries. The activities of the Board are focused towards increasing the fish production of the country to a level of 10.3 million tonnes, to double the exports from `7,000 crore to `14,000 crore and provide employment 3.5 million persons by extending assistance to various agencies for implementation of

activities under inland, brackish water and marine sectors. It will propagate a platform for public-private partnership for fisheries. Objectives of the National Fisheries Development Board are:

i. To bring major activities relating to fisheries and aquaculture for focused attention and professional management;
ii. To coordinate activities pertaining to fisheries undertaken by different Ministries/Departments in the Central Government and also coordinate with the State/Union Territory Governments;
iii. To improve production, processing, storage, transport and marketing of the products and culture fisheries;
iv. To achieve sustainable management and conservation of natural aquatic resources including the fish stocks;
v. To apply modern tools of research and development including biotechnology for optimizing production and productivity from fisheries;
vi. To provide modern infrastructure mechanisms for fisheries and ensure their effective management and optimum utilization;
vii. To generate substantial employment;
viii. To train and empower women in the fisheries sector;

f. Coastal Aquaculture Authority

The Coastal Aquaculture Authority (CAA) was established under the Coastal Aquaculture Authority Act, 2005 vide Gazette Notification dated 22nd December, 2005. The main objective of the Authority is to regulate coastal aquaculture activities in coastal areas in order to ensure sustainable development without causing damage to the coastal environment.

The Authority is empowered to make regulations for the construction and operation of aquaculture farms in coastal areas, inspection of farms to ascertain their environmental impact, registration of aquaculture farms, fixing standards for inputs and effluents, removal or demolition of coastal aquaculture farms, which cause pollution etc.

One of the major tasks accomplished by the CAA was the registration of shrimp farms on the recommendations of the State and District Level Committees constituted for this purpose. The Authority also resolved many vital issues such as norms for registration of hatcheries, antibiotic residues in shrimp, closure of farms and hatcheries violating the Act, Rules and guidelines, Environment Impact Assessment, stocking density etc.

Issuance of Biometric Identity cards to Marine Fishers: In the backdrop of the terrorist attacks in Mumbai on 26th November, 2008, the Government of India felt it is necessary to issue Biometric Identity Cards to marine fishers involved in fishing and allied activities. Accordingly a "Central Sector Scheme (CSS) on Issuance of Biometric ID Cards to Marine Fishermen" at a total cost of `72 crore was launched on 11th December, 2009. The project on issuance of Biometric ID cards involves two major activities such as (a) data collection and authentication by the respective States/UTs and (b) digitization of data, capturing of biometric details of individual fisher, production and issuance of cards. Under this scheme, the Government of India provides 100% financial assistance to the Coastal States and UTs, besides meeting the entire cost of consultancy. The main objective of this project is to create a National Marine Fishers Database (NMFD), which could be accessed by all the authorized agencies both in the Central and coastal States/UTs. Other objectives of this project are to empower marine fishers through issuance of application oriented biometric ID card and to eliminate duplication of different cards issued by various coastal States and UTs.

Meat and Abattoirs

India has enormous potential to be the world's number one producer of meat but has not been able to harness it. Meat production from the recognized sources is estimated to be 3.96 MT (DAHD, 2010). However, meat production which is quoted as 6.3 MT at various forums has increased at the rate of 4.1% annually during the last 5 years. Cattle and buffalo, sheep and goat, pigs, poultry contribute 55.0%, 17.1%, 11.4% and 16.3%, respectively to total meat production.

Constraints in the meat sector include poor infrastructure of slaughter houses both registered (3894) and un-registered (25754), lack of cold chains, proper meat inspection system and poor utilization of by-products.

Establishment/Modernization of rural slaughter houses including mobile slaughter plants (Rs. 240 crores), Utilization of fallen animals (Rs. 75 crores), Salvaging and rearing of male buffalo calves (Rs. 300 crores), Food safety and traceability (Rs. 50 crores) and Setting up of Retail Poultry Dressing Units (Rs. 1662.2 crores) were the major schemes during the 11th plan.

The major constraints in implementing schemes in meat and abattoirs sector were overlapping functions of various agencies (Central Ministries /Departments – AHD&F, Food Processing Industries, Environment & Forest) which led to procedural delays and poor coordination.

Since slaughter is a state subject, the actual processing of meat for exports as well as for domestic demand follow the laws of the individual states, which are at variance with each other. The new regulations notified in May, 2011 under Food Safety and Standards Act call for complete modernization of the industry to produce quality and safe meat. There is no cadre of qualified Veterinarians/technicians for meat inspection. In most of the States, the Veterinarians are given additional responsibility of meat inspection.

Inedible offal's and animal wastes from the meat plant can be rendered for the preparation of economically useful products. Much larger potential exists for processing animal tissues for valuable proteins/materials which have global market and most of them are imported to India. There is also huge demand of Indian ethnic meat products in the international market. Suitable incentives should be provided for setting up of further processed meat units, rendering and high value by-product plants in PPP mode. There is a need to upgrade/ modernize/ strengthen livestock markets by building up infrastructural facilities on the pattern of Agriculture Produce Marketing Centres.

National Meat & Poultry Processing Board was constituted under MFPI to promote processing of meat & meat products by clubbing meat and poultry. The scope of the board may be broadened to cover all meat related issues right from the primary production to the consumers. In continuation, State Meat Development Boards may be established to address the meat issues.

Investment, Credit and Insurance

Animal husbandry and dairying is a state subject, and bulk of the investment for their development comes from the state governments. The central government contributes about 10% to the total investment through central and centrally-sponsored schemes as to supplement state governments' resources. As per cent of the total plan outlay the share of animal husbandry and dairy development declined from 1.1% during first FYP to 0.4%

during VI FYP and further to 0.3% in the subsequent FYPs. As proportion of the total outlay for the agricultural sector, the share of livestock fell from 11.2% in II FYP to 3.6 % in IX FYP but increased to 9.3% during XI FYP.

Since IV FYP the emphasis had been on dairy development to support the the Operation Flood Programme. With the end of Opertaion Flood program, the allocation to dairy development slowed down, reaching to about 30% in the XI FYP. Animal health and veterinary services now receive about 30% of the total funds. In XI Plan, the centrally sponsored schemes -Animal Health and Disease Control and National Project for Livestock Development accounted for a major share of the outlay for animal husbandry. Small ruminants, piggery, feed and fodder development, research, education and training did not receive adequate financial support. Diary processing was not a priority for lending by institutional credit agencies. In 2009, dairy processing was included in the list of priority sector lending activities.

Flow of institutional credit to livestock sector has not been in commensurate with its share in AgGDP. The average share of the sector in total term loan advanced to the agricultural sector was about 10% during 2005-06 to 2009-10. More than 70% of the refinance disbursement goes for dairy development. The share for poultry, small ruminants and piggery has declined sharply from 50% in the early 1990s to 32% in the late 1990s and further to less than 22% in triennium ending 2005-06.

A Venture Capital Fund to promote entrepreneurship in dairying and poultry was started in 2005 and continued in the XIth Plan also. The scheme was modified and renamed as 'Dairy Entrepreneurship Development Scheme' (DEDS) from 1st September, 2010. The changes or modifications included, (i) change in the mode of central assistance from Interest Free Loan to back-ended Capital Subsidy. (ii) removal of the restriction on establishment of dairy units in Operation Flood (OF) areas, (iii) extension of assistance to indigenous descript milch cows like Sahiwal, Red Sindhi, Gir, Rathi etc. and graded buffaloes up to 10 numbers, (iv) assistance for rearing of heifers up to 20 which was not available earlier, (v) assistance for vermi-composting, and (vi) assistance for dairy marketing outlet/parlor.

The Centrally Sponsored Scheme on "Poultry Development" has various components viz., assistance to State Poultry Farms for strengthening infrastructure, farmers training, setting up of demonstration units, etc.; the 'Rural Backyard Poultry Development' component is envisaged to cover beneficiaries from poor families to enable them to gain supplementary income and nutritional support.

In a pilot project for establishing 'Poultry Estates', entrepreneurship skills are to be improved initially through establishment of two estates by the state governments. These estates are meant primarily for educated, unemployed youth and small farmers for establishing individual layer/broiler units with interest free loan.

Since 2011-12, the 'Poultry Venture Capital Fund' scheme is in progress for implementation in Capital Subsidy mode through NABARD.

Although, animal husbandry and dairying are eligible to receive assistance under RKYV, allocation of funds to these activities has been quite poor- only 10-15% of the total outlay in different years.

Rural Infrastructure Development Fund (RIDF) should provide cost effective loan support to State Governments to develop infrastructure in rural areas including veterinary hospitals / dispensaries (new and renovation), dairy rehabilitation programme, dairy processing plants, pig breeding farms, vaccine production centres, livestock knowledge centres, semen bank, poultry hatchery and strengthening of cattle breeding farm.

The Government of India introduced a Centrally Sponsored Livestock Insurance scheme on pilot basis in 2005-06. The scheme now covers 300 districts. The scheme restricts insurance cover to high yielding cows and buffaloes (yielding at least 1500 litres of milk per lactation) and is implemented in all the States through the State Livestock Development Boards, or through the State Directorate of Animal Husbandry. Fifty percent of the premium is borne by the farmers and the remaining 50% and the administrative charges by the Government of India. The subsidy is restricted to two animals per beneficiary, and for a maximum period of three years.

New institutional mechanisms need to be put in place so that the schemes and programs can be awarded for implementation in the competitive mode, rather than sole emphasis of State AHDs as the implementing agency. This would encourage public-private partnership and could also attract much needed private capital investment for its development. Taking the business entities, NGOs, etc. as partners for delivery of the Govt. Schemes could be considered as an option. Investment linked tax incentives may help private investors to invest in livestock production and processing activities.

Presently, there is no target for animal husbandry loans, banks depend on walking in business and efforts of the customers. Also there is no systematic budgeting and follow-up review by banks specifically in animal husbandry activities. Hence, minimum sectoral targets in priority sector and rural lending should be specified.

Credit to animal husbandry should be treated at par with crop loan as animals generate a continuous stream of output. The facility of the Kisan credit cards should be extended to the livestock farmers.

National Livestock Insurance Scheme should not be limited to bovines only and be extended to the small ruminants and piggery. The insurance for the small ruminants and backyard poultry should be in welfare mode as in case of community health programmes.

The service tax on rural livestock insurance may be exempted or reduced and private sector should be incentivized. Cooperatives and agribusiness firms (in case of contract farming) should facilitate provision of insurance cover by providing premium on behalf of the farmers which may be recovered in installments or lump sum from their sale proceeds.

Livestock Economics and Statistics

A need for reliable statistics is now recognized for two main reasons. First, as the economy grows and incomes rise, the relative importance of livestock food - milk, meat, poultry and their processed products - in the average Indian diet is going to grow further. From the point of view of its contribution to the national income, the share of the sector has also increased over time and hence, precise and reliable estimates of livestock sector become vital. Secondly, for meeting the challenges of globalization it is imperative to have comprehensive and reliable knowledge of the ground realities on all aspects of our livestock production system.

The first Livestock Census was conducted during 1919-20 and since then it is being conducted quinquennially by all States/UTs. So far 18 such Censuses have been conducted, and the latest one is 18th in the series with 15/10/2007 as reference date. The government has launched 19th Livestock Census on 15th September, 2012 in the country through Animal Husbandry Departments of the States/UTs with 15/10/2012 as the date. The Census which is conducted as a 100% Centrally Sponsored scheme, is the only source providing number of all species and equipments and machinery.

There are only two schemes for compiling information on animal husbandry and dairying. These are the (i) Quinquennial Livestock Census and (ii) Integrated Sample Survey. In addition, the National Sample Survey Organization also conducts a decennial survey on Land and Livestock Holdings. Integrated Sample Survey (ISS) generates information on production and yield of major livestock products like milk, eggs, meat and wool on annual basis. One of the major constraints faced in smooth conduct of the ISS is the precarious shortage of staff. Out of the 1334 entitled posts, only 717 posts (54 % of entitled strength) are filled up by the States/UTs.

Besides the milk production estimates, the meat, egg and wool production estimates are based on studies on yield-rates from very few states. For the states where yield rate studies have not been carried out, the yield estimates of neighbouring states are applied to arrive at production estimates.

The Livestock Census should be made mandatory, and efforts made to conduct it simultaneously throughout the country. Publicity for Livestock Census should be given due importance with specified funds allocated for the same in the scheme itself. The Census should compile breed-wise information so as to know the livestock diversity in the country. The Census should be conducted by persons trained extensively in identification of breed characteristics by involving breeders and concerned scientists/technical persons. The Census should aim its conduct through computer-intensive technology only. Data on Livestock Census should be scanned the moment it is collected and validated by immediate supervisor. For this, infrastructure and software required for verification, validation, howler checking, work file creation, tabulation and publication should be kept ready well in advance and before the scanning of data in order to make faster publication of results. Further the data should be readily available to the researchers and policy makers. Presently, the ISS reports are available only with the respective State AHDs, and Centre publishes just the state level figures not the district-level or seasonal estimates.

Unlike the crop sector, there is no systematic collection of data on the input use in the livestock sector and cost of production estimates. In this context, either the scope of the ISS Scheme should be broadened to cover all statistics related with livestock sector. The regional estimates on cost of production and input use (feed, fodder, labour, etc) may be generated once in two years and unit record data for the same be made available (at a price) in public domain as is done by the NSSO for its surveys. A separate wing dealing with livestock statistics and economics may be established to plan data collection on various aspects of livestock production and health. The NDDB compiles useful information on the milk procurement, prices, value addition and other aspects of milk production and processing collected from the vast network of dairy cooperative structure in the country. However, the public access to this data base is not there. NDDB may provide this information in public domain.

A National Institute for Livestock Information and Policy Studies as proposed in the XI FYP may be established. The Institute should be an autonomous body and provide the required technical inputs and guideline on Animal Husbandry Statistics and Economic studies.

Adulteration in milk and meat and animal feed

Tropical climate, unorganized milk production, laxity in quality control, a lopsided demand and supply position coupled with evolution of recalcitrant pathogens are major hurdles in development pace of the dairy industry. The problem of quality assurance with particular reference to microbial contamination ails Indian dairy sector starting with milk producing animals, which can deliver heavy load of bacteria to fresh milk due to infections.

The adulteration of inferior with superior quality meat is a common practice for financial gain. Further, carelessness and lack of proper hygienic conditions are common maladies affecting meat trade and industry in India. Meat species adulteration concerns consumers in terms of economic loss, food allergies, religious observance, and food safety. The conventionally available methods for detecting adulteration in meat depend on protein expression pattern and suffer from the disadvantage that after cooking the proteins get heat denatured which leads to alteration of results and also show cross species reactivity. There is need for a method that would give unambiguous conclusion, work with cooked samples and also help in solving vetro-legal problems particularly related to Prevention of Cow Slaughter Act. Mixing of non-declared protein, addition of flour, starch, fibre, and plant proteins, mixing of non-meat ingredients in meat products such as blood proteins, edible offal etc. are the most frequent adulterations used in meat products.

Presence of antibiotic residues is also linked to cause allergic reactions in human beings even if they are present at very low level (1 ppb), carcinogenicity and spread of bacterial resistance to antibiotics. Further, such residues are detrimental to the dairy industry in formulation of value added products where bacterial starter cultures are required.

In India, many of these antibiotics are being used in an "extra label" fashion and furthermore, due to the malpractices new generation antibiotics recommended for human use are also being used in animal for disease control, for which no safe levels have been recommended in milk and are leading to development of antibiotic resistance.

There is need for preparation of inventory database of adulterants, pathogens and residues in milk, meat and animal feed which shall help to evolve suitable protocols and develop mitigation strategies for production of quality assured and residue free food of animal origin. There is a major concern over the adulteration and substandard quality veterinary drugs. There are no facilities available for veterinarians or even Govt procurement agencies to check the quality standards of veterinary drugs and potency of vaccines available in the market.

As per FSSA, no article of food shall contain pesticides, veterinary drugs and antibiotic residues and microbiological counts in excess of such tolerance limits as may be specified by regulations. The Drug and Cosmetics Act regulates manufacture, sale and distribution of drugs and is primarily the concern of the State authorities. Majority of the States are not either adequately staffed or technically equipped to monitor the quality of drugs in their States.

Establishment of five accredited Central/ Regional referral laboratories and twenty five State Quality Control laboratories, with uniform method of analysis, adequate technical personnel

to manage quality assurance goals and measures for sanitary and phyto-sanitary monitoring is recommended. Each laboratory should have facilities for analysis of adulterants and quality control of milk, meat, and animal feed; pesticide, antibiotic and heavy metal residues analysis. These units should be placed under one roof so as to allow use of common equipments etc. Providing analytical services supported with mobile vans will be of great help for routine screening of samples. Funds should be provided for developing the infrastructure, man power for research and development, and other recurring and non-recurring contingencies.

There should be Regional Veterinary Drug Testing Laboratories approved by the Drugs Control Administration to carry out testing and analysis of veterinary drugs for their quality and vaccines for their potency.

ICAR should collaborate with research institutes/state universities for development of rapid, cost-effective and easy to use tests/kits for detecting adulterants; antibiotics residues; food borne pathogens in food of animal origin, animal feed quality, which can be used at field level and at milk procurement centres. Initially diagnostic kits can be imported for use and later on these produced indigenously.

Incentives to milk producers for quality milk production, in terms of hygiene, somatic cell count, drug residues, microbial load and chemical contaminants should be provided. National and State regulatory bodies should be established to ensure the quality of milk and meat.

Trade matters related to animal husbandry

All livestock products imports are under the purview of the DAHD.

Procedure for Imports: A Committee on Risk Analysis has been constituted under the Chairmanship of Joint Secretary (Trade) with representatives of all divisions as its members to consider the applications received for issuance of SIP to import various livestock products. The recommendations of the technical experts are considered by the Risk Analysis Committee either to reject the application or issuance of SIP. Aggrieved applicant can seek a review of the decision of the Risk Analysis Committee through filing a review / representation addressed to Joint Secretary (Trade).

The Department also processes the proposals for import / export / manufacturing / marketing of livestock products such as vaccines, drugs & biological received from various State Governments/firms/organizations. The views of the Department on these proposals are communicated to the Directorate General of Foreign Trade / Drugs Controller General of India for issuance of necessary import license in favour of concerned State Governments/ firms/ Organizations after considering the same by a Committee on Trade & Investment Matters. The Committee on Trade & Investment Matters also meets under the Chairmanship of Joint Secretary (Trade) with all the Joint Secretaries as its members. The Department has put in place a system of submission of on-line applications for issuance of Sanitary Import Permit to various firms/ Organizations engaged in activities of import of livestock and livestock products.

Women and Livestock

In India livestock production is largely in the hands of women. In fact animal husbandry is becoming feminized. The share of women in the total agricultural workforce increased from 70.5% in 1993-94 to 76.6% in 2004-05. This proportion is as high as more than 90% in states like Punjab and Haryana where animal husbandry is more commercialized and engages more

than 40% of the total agricultural work force. Livestock are important for their livelihood culture and they have limited alternative opportunities for employment. However, women have little resources to improve animal productivity, to manage risk and buy good quality animals which could respond to inputs for productivity enhancement. Significant gender inequalities also exist in access to technologies, credit, information, inputs and services probably because of inequities in ownership of productive assets including land and livestock.

A Gender Budget Cell is constituted in the DAHD with the objective of influencing and effecting a change in the Ministry's policies, programmes in a way that could tackle gender imbalances, promote gender equality and development of women. With the approval of the Competent Authority, it has been decided that 10 to 15% of funds should be earmarked under the existing Centrally Sponsored/Central Sector schemes from 2013-14 onwards for Empowerment of Women. Based on the feedback received, the earmarking of funds for Empowerment of Women will be increased from 2014-15 onwards.

Major approach and effort should be to enhance women's access to livestock assets as to enable them to avail benefits of various livestock development programmes and policies. This may include evolving women selfhelp groups or women livestock producers' association for availing credit for securing livestock and inputs; insurance to manage risk, and inputs and services to improving animal productivity. Procedural requirements to avail policy benefits may be relaxed for women livestock keepers e.g. doing away with collateral requirement in accessing credit; and targets of women participation may be fixed for the implementing agencies. Women may also be provided additional incentives in terms of subsidies on interest rates and insurance premium. Special programmes should be initiated for developing women entrepreneurship along the livestock value chain including production, processing and marketing as to enable them to face the emerging challenges in production and marketing.

To boost animal productivity and income of the women there is a need for appropriation of technologies that reduce drudgery to women and improve animal health and nutrition. Improve women's access to services through appropriate training programs/ extension programmes as to enhance their capacity in clean livestock production and livestock management to improve resilience of livestock to climate change. Social entrepreneurship approach needs to be adopted and accredited at village level especially for ecologically fragile areas.

Besides, there is also a need to correct gender bias in veterinary education, research and service delivery systems as to enhance the effectiveness of women-oriented livestock development programs.

Livestock Extension

Extension of knowledge, technology and service to the grass root level is of paramount importance for the growth of the sector. The sector is still considered as subsidiary to crop sector and the extension format and methodology developed for crop production are considered to take care of the livestock extension needs. Both, Central and State Governments have kept extension as a low priority as hardly 1 % of the total budget for the sector is allocated for extension activities. An NSSO survey revealed that only 5.1% of the farmer households in India were able to access any information on animal husbandry as against 40.4% on crop farming.

The approach has to be door step delivery of services including AI, immunization, health coverage, credit and market procedures. Emphasis should also be on wider dissemination of information through intensive contact and electronic media.

Only one centrally sponsored scheme on "Livestock extension and delivery services" with a budgetary outlay of Rs.15.00 crore was proposed by DAHDF during the 11th Plan period. No expenditure however, has been incurred. This clearly shows the neglect of the livestock extension.

The need is for building up an exclusive cadre of extension workers with appropriate skills and knowledge. Special KVKs with emphasis on various livestock activities should be established, albeit in limited districts in each state. These efforts should be complemented with support from para-vets, NGOs and other development organizations. KVKs distinctly created for livestock should support education of farmers and up gradation of skills of the paravets and field guides.

The DAHD&F should have special "Extension Cell" with matching official machinery in the states for formulation and implementation of programs. The shortage of technical manpower for work in the field should be addressed appropriately. Public–Private-Partnership (PPP) in extension has to be encouraged. A major program on livestock extension, delivery of services and women empowerment should be initiated in 12th plan to enhance efficiency of production.

Human Resource and training needs

Globalization and implementation of world trade agreements (WTA) has increased the scope for export of livestock and hygienically produced livestock products manifolds. Movement of livestock and livestock products across the borders also introduces the risk of trans-boundary infections. Zoonotic diseases and public health issues associated with livestock and livestock products are other concerns. The role of the veterinarian has becomemultifaceted as a clinician, researcher, and an advisor.

Against the requirement of 67,000 veterinarians, only 34,500 are available. Similarly, against the requirement of 7500 veterinary and animal science specialists for teaching and research, only 3050 are available. Similarly, availability of para-vets and other supporting staff is only 52,000 against the requirement of 2, 59,000.

Most of the colleges are operating at 50% of the approved strength. In order to support the increased need, it is essential to strengthen the faculty position in existing colleges to produce the required manpower to manage both UG and PG teaching and research responsibilities. The current available strength in the veterinary colleges/institutes including deemed universities offering undergraduate and postgraduate programs is around 3050.

The need is for doubling intake capacity through strengthening existing infrastructure and laboratory facilities should receive priority. Around 20 new veterinary colleges in private sector in next 5 years should be opened with a capacity of 60 students. Twenty institutions among existing ones should be selected as centres of excellence for post-graduate teaching and research and funded for strengthening diagnostic labs, contract faculty and infrastructure. Veterinary Council of India regulates the Minimum Standards of Veterinary Education at National level. The Postgraduate Veterinary and Animal Science Education is with the Indian Council of Agricultural Research (ICAR). As a part of the ICAR system, growth of the

veterinary/dairy sector education has not been up to the desirable level. Initial experiment with the creation of Veterinary and Animal Science University at Chennai proved to be a successful model. Today, eleven Veterinary Universities in different states have been established and are working successfully. Thus, for further quantum jump in the veterinary education, veterinary colleges/ veterinary universities should receive large funds and special grants to address the issue of shortage of manpower.

Students need to be exposed maximally to hands on training and problem based learning. Creation of instructional herds with sufficient number of animals should be mandatory for any Govt. or private college imparting degrees in veterinary Science and Animal Husbandry. Requirements of the feed industry, pharmaceuticals, food processing plants, semen stations, wild life and zoo animals, public health issues, herd health management and reproduction, environment and global warming should be addressed adequately. Re-training of the veterinarian to brace for the recent developments is paramount. A vet should attend mandatory refresher courses every 5 years during his career. Para-vet staff is involved in delivery of vaccination, artificial inseminations, and other minor veterinary practices. More Veterinary Polytechnics should be established for awarding two year diploma in each state.

A large project on Developing Human Resource in Veterinary & Animal Sciences which should involve strengthening infrastructure, laboratory facilities, establishing new veterinary colleges, and Veterinary Polytechnics supported with contract manpower should be developed to address the issue of shortage of Vets and Para-vets in a given time frame.

Restructuring of Schemes and budgetary requirements

The 11th Plan had a total of 29 schemes (21 in Animal Husbandry, 6 in Dairy, 1 under the special package for suicide prone districts, and 1 Externally Aided Project). The overall performance of most of schemes has not been to the desired levels. Problems lied with funding pattern, poor flexibility etc. Most of these schemes were stand alone with meager financial outlay. Their implementation across all the States resulted in dilution of the focus.

The States have their own specific needs and problems but are not able to address them comprehensively due to inadequate financial resources of their own. They have to essentially look forward to the Central assistance. In the present dispensation of the CS and CSS schemes, the States submit the proposals in all the schemes irrespective of their relevance. It would be beneficial to harness the regional strengths using a regionally differentiated approach for exploiting the potential. Major requirements that emerged are:

i. Improving manpower and infrastructure
ii. Wider and effective immunization for important economic diseases
iii. Focused Pig production in North Eastern and Eastern states
iv. Enhanced green fodder production
v. Adding value to livestock by-products
vi. Strengthening animal husbandry extension network and service delivery at farmers' door step.

For restructuring and reorienting the schemes:

i. All the ongoing schemes recommended for continuation should be classified under three mega schemes; a) Animal production b) Livestock Health, and c) Dairy development.
ii. 'National Dairy Plan' (NDP) should be implemented as a National Project and its activities effectively dovetailed as complementary and supplementary to NPCBB.

iii. The Accelerated Fodder Development Program (AFDP) presently being implemented by the DAC may be enlarged into 'Feed and Fodder Mission Program' (FFMP) with inclusion of additional components of nutritional enhancement of crop residues, conservation etc. and the whole program implemented by DAHDF in collaboration with DAC and ICAR.

iv. For supporting the state specific needs, it is recommended that a set of time bound schemes may be developed in consultation with the States and implemented through RKVY. A strong concurrent monitoring and evaluation mechanism may be inbuilt in all the schemes to be implemented in the ensuing plan period. An independent impact evaluation by third party should also be carried out.

Some important points in brief

India has a broad spectrum of native breeds of cattle, buffalo, goats, sheep, swine, equine, camel and poultry with merits of adoptability to climate and nutrition, and resistance to diseases and stress. Populations of most of these breeds have alarmingly gone down due to comparative preferences for high producing exotic breeds. This calls for an immediate action for systematic conservation, genetic improvement and sustainable utilization of indigenous livestock breeds.

Hardly 5% of the cropped area is utilized to grow fodder. India is deficit in dry fodder by 11%, green fodder by 35% and concentrates feed by 28%. The common grazing lands too have been deteriorating quantitatively and qualitatively.

Crossbreeding of indigenous species with exotic stocks to enhance genetic potential of different species has been successful only to a limited extent. Limited AI services owing to deficiency in quality germ plasm, infrastructure and technical manpower coupled with poor conception rate following artificial insemination have been the major impediments. After more than three decades of crossbreeding, the crossbred population is only 16.6% in cattle, 21.5% in pigs and 5.2% in sheep.

Sufficient facility / setup for disease diagnosis, reporting, epidemiology, surveillance and forecasting are not on board. Several diagnostic kits required for disease surveillance and monitoring are imported at a huge cost. The limited diagnostics available in the country are produced by few laboratories and are not of desired quality. Managing livestock diseases through prophylactic controls with strong laboratory diagnostic system is the only option. Appropriate measures to deal with imminent climate change are yet to become visible.

The growth in milk production decelerated from 4.4% during 1990s to 3.9% during 2000s. There remains a huge gap between the potential and the realized yields in Indian livestock. Only 27-75% of the dairy animal potential yield is realized in different regions of the country5 because of constraints related to feeding, breeding, health and management. Output worth Rs 283 billion (at 2003 prices), which was equivalent to 25% of the value of milk produced in 2002, was lost due to these constraints. Feed and fodder scarcity is identified as the most limiting constraint accounting for half of the total loss, followed by problems in breeding and reproduction (21%) and in health (18%).

The dairy cooperative network in the country includes 254 cooperative milk processing units, 177 milk unions covering 346 districts and over 1, 33,000 village-level societies with a total membership of nearly 14 million farmers. Besides handling liquid milk, these plants manufacture value-added products. Testing of milk for safety and quality parameters at the

collection centers is almost non-existent. Lack of proper anaerobic waste treatment and dairy byproduct utilization are the other concerns. Due to quality concerns of milk, value addition and export potential has not been fully exploited.

Inedible offal's and animal wastes from the meat plant have large potential to be used as valuable proteins/materials for export. There is also huge demand of Indian ethnic meat products in the international market. However, lack of international processing standards is the hindrance.

Bulk of the investment for livestock development comes from the state governments. The central government contributes about 10% to the total investment. There is hardly any private sector investment in animal husbandry. The dairy sector, however, has attracted considerable private investment in processing, value addition and marketing.

Livestock insurance provided by the public sector insurance companies could cover only about 6% of the animal heads (excluding poultry). Cooperatives and agribusiness firms (in case of contract farming) should facilitate provision of insurance cover by providing premium on behalf of the farmers, which may be recovered in installments or lump sum from their sale proceeds. Innovative and acceptable insurance models may be designed to evolve a suitable scheme for various species/states.

The information on livestock population and production generated through the Quinquennial Livestock Census and Integrated Sample Survey is neither authentic nor timely mainly due to precarious shortage of staff. This adversely affects the quality of the estimates. The Census should compile breed-wise information so as to know the livestock diversity, breed status and should be conducted by the skilled persons having capability to recognize the animal characteristics. Data on the input use in the livestock sector should be collected systematically and cost of production estimates worked out.

Microbial contamination, antibiotic residues and adulteration in milk, meat and animal feed is rampant. Quality control for veterinary drugs and vaccines is almost non-existant. There is a need to establish food testing laboratories duly accredited by the Food Safety and Standards Authority of India (FSSAI) to check adulteration.

The veterinary and animal science services are a highly specialized area and need qualified technical manpower. Only 34,500 veterinarians are employed for field services against the requirement of 67,000. Similarly, against the requirement of 7500 veterinary scientists for teaching and research, only 3050 are available. Availability of Para-vets and other supporting staff is only 52,000 against the requirement of 2,59,000. Shortage of technical manpower for teaching, research and extension and for field services is affecting quality of manpower and services. Further, Veterinary infrastructure in general is poor, inadequate and need strengthening.

Steps to improve productivity

- For achieving targeted growth rate of 5 -6 % in milk production, provision should be made for production of required good quality semen from high genetic sources. To achieve that, the existing semen stations should be strengthened and upgraded to category 'A', and /or new semen stations established to ensure availability of minimum 150 million doses of quality semen to cover 40% breedable cows and buffaloes and 70% AI delivery at farmers' doorstep. Larger focus should on field

progeny testing for quality bull production. Both NPCBB and NDP should be implemented in tandem.

- Profitability in sheep and goat would largely come from increased meat and to some extent wool/ hair production. The focus should be to adopt semi-intensive/ commercial production systems, application of assisted reproductive technologies and provision of improved quality feed and fodder and health care specially control of PPR. A community/ institutional approach, establishing meat processing plant and developing adequate market linkages are suggested.
- A mission on Pig Production should be initiated in North-eastern region and other eastern states. Strengthening/establishment of pig breeding units, arranging feed inputs, quality germplasm, vaccines and diagnostics, processing plants and developing market linkages should be integral part of the Mission.
- For increasing growth rate from present 2% to 3% in rural poultry, a rural poultry mission project with focus on providing low input birds should be initiated. ICAR may participate and make available the low input birds.
- Conservation of AnGR (animal genetic resources) should be a national responsibility and conservation activities implemented with 100 percent central assistance. Threatened breeds with unique characteristics should receive priority. There must be at least one farm for each breed in its native tract.
- The DAHDF should initiate a major 'Feed and Fodder Mission' for addressing the problem of shortages of quality fodder seed production, and nutritional enhancement of crop by-products with effective collaboration with DAC and ICAR. A comprehensive strategy for rejuvenation of natural grasslands/ pastures/ common property resources for enhancing their productivity is also required.
- The existing Immunization programs for FMD, PPR, Brucellosis and other important diseases should be the national commitment with 100% central funding. A comprehensive national network of diagnostic laboratories should be established. The vaccine and diagnostic production should be privatized with suitable incentives. Existing State Biological Vaccine production units should be phased out in a given time frame. Mobile veterinary services should be introduced and treatment provided at cost. A Veterinary Drug Control Authority should be put in place.
- Dairy plants should have inbuilt mechanism for anaerobic waste treatment and dairy by-product utilization. Government should defray a sizable portion of the capital costs. Some incentives in the form of tax holiday may be given to milk by-product industry to attract private investment in this sector.
- Suitable incentives should be provided for setting up of rural abattoirs, establishment of new and modernization of existing slaughter houses, meat processing units, and high value by-product plants for ensuring quality meat production. Rearing of buffalo male calves for meat should receive priority.
- Well-equipped laboratories for testing adulterants, antibiotics residues, and food borne pathogens should be established to enhance safety and quality of animal feeds and foods.
- The share of animal husbandry in agricultural credit should be increased at least to 10% and interest rate on animal husbandry credit should be at par with crop loan. The facility of the Kisan credit cards should be extended to all livestock farmers. Livestock insurance coverage should be expanded to all types of production systems and species with appropriate incentive framework.

- Livestock economics, business management and market intelligence should be strengthened. The earlier recommendation of XI Plan for establishment of Institute for Livestock Information and Policy Studies is reiterated.
- A differentiated approach of providing extension and input services at the farmers' doorstep should be adopted. Dedicated KVKs exclusively for livestock should be established for training and demonstration. Para-vets should receive larger focus in respect of trainings and delivery of technologies. Public–Private-Partnership (PPP) in extension should be promoted for convergence and sharing of resources. Major program on livestock extension, delivery of services and women empowerment should be initiated in 12th plan to enhance efficiency of production.
- The issue of shortage of manpower in veterinary and animal sciences should be addressed on priority and appropriate funds for strengthening of infrastructure for veterinary education and research must be made available. Veterinary colleges/ veterinary universities should receive special grants to develop appropriate infrastructure to meet the manpower shortage in a given time frame.
- Establishment of Indian Council of Veterinary and Animal Science Education and Research (ICVAER) as proposed in 11th plan should be done at the earliest. This would greatly help in better coordination and producing appropriate technologies for enhancing livestock productivity and achieving targeted growth rates.
- The ongoing Schemes and new initiatives should be placed under three mega schemes with wider freedom and flexibility for states to choose the components.
- A minimum of 35 – 40% of the allocation under the flagship scheme of RKVY must be earmarked for animal husbandry and dairy sector activities.

Generation of Employment in Food Processing Sector

Food Processing Industry is employment intensive. It has been estimated that for every Rs.1 crore invested, it creates 18 jobs directly and 64 indirectly in the organized sector and 20 jobs in the unorganised sector across the supply chain. At present food processing sector employs about 13 million people directly and about 35 million people indirectly. Government is encouraging Food Processing Sector to increase the processing level from 6% to 20 % and value addition increase from 20% to 30% as a part of Vision 2015 of the Ministry of Food Processing Industries (MFPI).

Under the Scheme for Technology Up gradation/ Modernization/ Establishment of Food Processing Industries, MFPI extends financial assistance to food processing industries in the form of grant-in-aid @ 25% of the cost of plant and machinery and technical civil works subject to a maximum of Rs. 50.00 lakh in general area or 33.33% subject to maximum of Rs. 75.00 lakh in difficult areas such as Jammu & Kashmir, Himachal Pradesh, Uttarakhand, North Eastern States, A&N Islands, Lakshadweep and ITDP areas. In addition, under the Technology Mission for Integrated Development of Horticulture in North Eastern and Himalayan States, higher levels of assistance @ 50% up to maximum of Rs. 4.00 Crore for setting up and Rs. 1.00 Crore for Up gradation of fruit and vegetables processing is available. A National Horticulture Mission (NHM) has been launched with an objective to boost the horticulture sector.

In the 11th Plan, the Ministry has approved new scheme to establish 30 Mega Food Parks with a view to provide state-of-the- art infrastructure for food processing sector in the country on a pre-identified cluster basis with a strong backward and forward linkage and to provide value addition of agricultural commodities including poultry, meat, dairy, fisheries etc. in a

demand driven manner. Financial assistance up to 50% of project cost excluding land component in general areas and 75% in difficult areas, subject to a maximum of Rs. 50.00 Crore is provided for setting up of Mega Food Parks.

To encourage setting up of cold chain facilities and backward linkages in the country, Ministry of Food Processing Industries (MFPI) has a Plan Scheme for Cold Chain, Value Addition and Preservation Infrastructure during the 11th Plan to provide financial assistance to project proposals received from public / private organizations for cold chain infrastructure development. The scheme envisages financial assistance in the form of grant-in- aid @ 50% of the total cost of plant and machinery and technical civil works in general areas and 75% for North Eastern Region and difficult areas subject to a maximum of Rs.10.00 Crore.

National Mission on Food Processing

The NMFP scheme would help the States / UTs in maintaining requisite synergy between agriculture plans of States and Development of food processing sector, which in turn would help in Increase in farm productivity thereby increase in farmers' income also. This would also help in ensuring efficient supply chain by bridging Infrastructural / institutional gaps. A National Food Processing Development Council (NFPDC) has been set up under the Chairmanship of Minister (Agri. & FPI) with representatives of State Governments, Industry associations and related Govt. of India Departments. This will provide guidance to all schemes of Ministry of Food Processing Industries (MOFPI) including the NMFP.

The basic objective of NMFP is decentralization of implementation of Ministry's schemes, which will lead to substantial participation of State Governments / UTs. Beneficiaries of MOFPI schemes will also find it easier to deal with State Governments. This would be a paradigm shift in the Ministry's approach and is driven by the need to make food processing truly a national initiative.

The following schemes being implemented by Government of India directly will be implemented through State Governments under this scheme in 2012-13:

i. Scheme for Technology Up-gradation / Establishment / Modernization of Food Processing Industries.

ii. Scheme for Cold Chain, Value Addition and Preservation Infrastructure for Non-Horticultural Products.

iii. Scheme for Human Resource Development (HRD)

iv. Scheme for Promotional Activities

Subsequently more activity will be added during the 12th Plan. Flexibility will also be given to States to add components and deviate from central guidelines subject to approval from the National Food Processing Development Council (NFPDC).

Animal Husbandry Schemes to be Restructured for Better Focus, Efficiency

Schemes relating to the livestock sector are likely to get a big boost in the 12th Plan. The Department of Animal Husbandry, Dairying and Fisheries has got approval for Rs. 14,179 crore from the Planning Commission under various plan schemes. The Department proposes to expand control programmes for major animal diseases such as the foot and mouth disease (FMD). Rs. 3114 crore have been provided in the 12th Plan under a mega scheme for animal diseases the Livestock Health and Disease Control (LH&DC) scheme. In a major restructuring exercise, a number of existing schemes relating to animal husbandry are being subsumed in the National Livestock Mission. A sum of Rs. 2800 crore has been proposed under the Mission.

In order to meet the rapidly growing demand for milk with a focus to improve milch animal productivity and increase milk production, the Government approved National Dairy Plan Phase-I(NDP-I) in February, 2012 with a total investment of about Rs.2242 crore to be implemented from 2011-12 to 2016. NDP-I will help to meet the projected national demand of 150 million tonnes of milk by 2016-17 from domestic production. The strategy involves increasing the genetic potential of bovines, producing required number of quality bulls, producing superior quality frozen semen and adopting adequate bio-security measures. To improve productivity of milk by genetic improvement, the existing schemes relating to development of bovines and dairy development are proposed to be merged to a new schemes of National Programme for Bovine Breeding and Dairy (NPBBD), which will be implemented along with the National Dairy Plan (Phase-1) (NDP-1). Efforts for conservation of quality indigenous breeds will be strengthened further in the 12th Plan under NDBBD and NDP-1.

In fisheries sector, a major initiative has been taken by Government of India by launching the National Fisheries Development Board (NFDB) since September, 2006, as a special purpose vehicle to achieve sustainable development of the fisheries sector through integration of wide array of activities. NFDP would be strengthened by integrating all schemes relating to fisheries development under it and enhancing investment for the sector.

Food processing

Basics of food processing

There are three basic stages of food processing. Primary processing involves cleaning, grading, conditioning, packaging and/or storage. There is no physical transformation of the commodity. The secondary processing involves processes like conversion of paddy to rice, wheat to flour, oil seeds to oil, etc. there is physical transformation in the product, yet it is not ready to be eaten. In the tertiary processing, the commodity is transformed into ready to eat products, like cooking of raw rice.

Supply chains: a supply chain is network of business entities collectively responsible for activities related to collection, storage, processing, distribution and marketing of food commodities.

In India, the farm produce can either be sold directly in the local markets or through the APMC, FCI or contract farming. The food through the latter channel is either stored or processed and finally sold either to the retail customers or wholesale customer.

Compared to this is the Japanese supply chain. The produce can be sold through two channels: one, to the wholesalers/brokers, and two, direct one-on-one sale to the intermediary wholesaler/ broker. The sale from the wholesaler/broker again has two channels: one, to the intermediary wholesalers/brokers (which is through transparent auctions), or two, direct sale to the retailers/restaurants, etc. from where the final consumer can purchase the food products. The intermediary wholesaler/brokers also sell their stock to the retailers/restaurants, etc.

What is needed is that the farmer must get price according to the nutrient content of the produce, must get remunerative price, and may also get a share in the profits generated by the intermediaries up in the supply chain. Produce-specific transport is also desirable to reduce the wastage and increase the proportion of processed food. Market must be incentivised to

invest in a big way to improve the output of the food processing sector. This would also call for appropriate regulation of the market to prevent exploitation of the producers.

Scheme for Infrastructure Development

Under the initiatives of MOFPI for strengthening infrastructure in agro and food processing sector, it had launched the Mega Food Parks Scheme, Scheme for Cold Chain, Value Addition and Preservation Infrastructure and Scheme for Modernization of Abattoirs in the 11th Five Year Plan.

Mega Food Parks Scheme: The Mega Food Parks Scheme provides for a capital grant of 50 percent of the project cost in difficult and ITDP notified areas(with a ceiling of Rs 50 crores). The grant shall be utilized towards creation of common infrastructure in CPC and PPCs in the park. Such facilities are expected to complement the processing activities of the units proposed to be set up at the CPC in the Park. Each Mega Food Park may take about 30-36 months to be completed. Out of 30 Mega Food Parks proposed during the 11th five year plan, the Ministry has taken up 15 projects under the Scheme so far.

Scheme for Cold Chain, Value Addition and Preservation Infrastructure: The Scheme was approved in 2008 with an objective to provide integrated and complete cold chain, value addition and preservation infrastructure facilities without any break, for perishables from the farm gate to the consumer. The assistance under the Scheme includes financial assistance (grant-in-aid) of 50% the total cost of plant and machinery and technical civil works in General areas and 75% for NE region and difficult areas subject to a maximum of Rs 10 crore. Taking note of the high demand and the gap in the requirement of cold storage, processing, preservation and cold logistics facilities in India, the Ministry is planning to upscale the Scheme and Planning Commission has already accorded 'In-principle' approval for the same.

Modernization of abattoirs Ministry has approved 10 projects in 1st phase which are at various stages of progress.

Scheme for Technology Upgradation/Establishment/ Modernization of Food Processing Industries.

Financial assistance is provided in the form of grants-in-aid for setting up of new food processing units as well as Technological Upgradation and Expansion of existing units in the country. Ministry extends financial assistance in the form of grant-in-aid to entrepreneurs @ 25% of the cost of Plant & Machinery and Technical Civil Works subject to a maximum of Rs. 50 lakhs in general areas or 33.33% subject to a maximum of Rs. 75 lakhs in difficult areas. Ministry has also engaged an agency (CMI) to maintain the data and to monitor the scheme closely. Under this arrangement, the details of all the pending applications along with their present status have been put in the public domain on the website of the Ministry.

Quality Assurance, Codex Standards and Research & Development and Promotional Activities

Apart from domestic standards for food products, processes and management practices, Codex prescribes international standards for safety and quality of food as well as codes of good manufacturing practices, which are accepted worldwide. Further, equal emphasis is required to be accorded to R&D activities for development of innovative products, cost effective processes and efficient technologies for food processing sectors. The scheme for

food safety, codex and R&D has been successful in making a dent in this area in the country. The scheme comprises of following components:

(i) Setting up/Upgradation of Food Testing Laboratories (maximum grant Rs. 2.50 crore per project). (22 projects assisted in XI Plan so far)

(ii) Implementation of HACCP / ISO / GMP / GHP / Safety Management System in food processing units (maximum grant Rs. 15.00 lakh / Rs. 20.00 lakh per project in general area / difficult area). (18 Projects assisted in XI Plan so far).

(iii) Research & Development in food processing sector. (40 projects assisted in XI Plan so far)

(iv) Promotional activities including advertisement & publicity. (Rs. 46.78 crore spent in XI Plan so far)

Human Resource Development

The MOFPI has taken the following measure to promote human resource development:

(i) Creation of infrastructural facilities for running degree/ diploma courses in food processing (maximum grant Rs. 75.00 lakh per project). (33 projects approved in XI Plan so far)

(ii) Entrepreneurship Development Programmes (EDP) (maximum grant Rs. 2.00 lakh per programme). 846 EDPs assisted during 11th Plan so far.

(iii) Setting up of Food Processing Training Centres (FPTC) (maximum grant Rs. 6.00 lakh / Rs. 15.00 lakh per project for single line/multi line products). (140 Centres assisted in XI Plan so far)

(iv) Training at recognized national / state level institutes etc. sponsored by MFPI or other training programme.

During 11th Five Year Plan, the Ministry is expected to provide assistance for setting up of about 270 FPTCs, organize 750 EDPs and facilitating need based professional development training programmes. In addition about 55 Universities/Colleges/ Institutions would be assisted for creating infrastructure facilities for degree/diploma courses in food processing.

Strengthening of Institutions

Indian Institute of Crop Processing Technology: The mandatory activities of IICPT are teaching, research and outreach activities in post harvest processing, preservation and value addition of agricultural and horticultural produces. IICPT focuses research in major theme areas to address problems like: development of indigenous technology knowledge based food, composite grains foods, energy saving in parboiling, improving milling techniques of cereal grains, pulses, oil seeds and millets, food processing effluent treatment, creating ready to use dry mix fermented batter for idly and other Indian foods, new food product development based on grains, fruits and vegetables, fortification of processed foods for making health foods at affordable prices, development of new equipments for puffing, multipurpose yard drying, parboiling, for producing hand pound rice, reducing storage losses, economic utilization of biomass, food industries by-product and waste utilization. Some of the major achievements of IICPT in the last four years have been as under:-

(i) Filed 11 patents and got 4 patents approved.

(ii) Developed Mobile Processing Unit for Tomatoes.

(iii) Conducts approx 320 one day outreach programme for farmers all over the country.

(iv) Developed 10 new products and done their commercial testing.

(v) Established a Food Testing Lab of International Standards at Thanjavur.

National Meat and Poultry Processing Board: The Government of India established the National Meat and Poultry Processing Board on 19th Feb 2009. The Board is an autonomous body and would initially be funded by the Government of India for 3 years and would be managed by the industry itself. The Board has 19 Members including CEO of the Board. The Chairman is from the industry. This industry driven institution has been launched to work as a National hub for addressing all key issues related to Meat and Poultry processing sector for the systematic and proper development of this sector. The Board serves as a single window service provider for producers/manufacturers and exporters of meat and meat products, for promoting the meat industry as a whole and it would result in large number of employment opportunities.

National Institute of Food Technology, Entrepreneurship & Management (NIFTEM): NIFTEM would work as —Sector Promotion Organisation/Business Promotion Organisation of the food processing sector. The other major objectives of NIFTEM are:

- Working as a —One Stop Solution Provider to all the problems of the sector.
- Working for —Skill Development and Entrepreneurship Development for the sector.
- Facilitating business incubation services with its ultra modern pilot plant for processing of fruits and vegetables, dairy, meat and grain processing.
- Conducting Frontier Area Research for development of the Sector.
- Developing world class managerial talent with advanced knowhow in food science and technology.
- Providing intellectual backing for regulations which will govern food safety and quality and at the same time foster innovation.
- Functioning as a knowledge repository on various aspects of food processing such as product information, production and processing technology, market trends, safety and quality standards, management practices among others.
- Working for upgradation of SME food processing clusters.
- Facilitating business incubation services with its ultra modern pilot plans for fruit and vegetables, dairy, meat and grain processing.
- Promoting cooperation and networking among existing institutions within India and as well as with international bodies.

National Food Processing Policy

The growth potential of this sector is enormous and it is expected that the food production will double in the next 10 years and the consumption of value added food products will grow at a fast pace. This growth of the Food Processing Industry will bring immense benefits to the economy, raising agricultural yields, meeting productivity, creating employment and raising the standard of very large number of people throughout the country, specially, in the rural areas. Economic liberalization and rising consumer prosperity is opening up new opportunities for diversification in Food Processing Sector. Liberalization of world trade will open up new vistas for growth.

The Food Processing Industry has been identified as a thrust area for development. This industry is included in the priority lending sector. Most of the Food processing Industries have been exempted from the provisions of industrial licensing under Industries (Development and Regulation) Act, 1951 with the exception of beer and alcoholic drinks and items reserved for Small Scale Sector, like vinegar, bread, bakery, . As far as foreign investment is concerned automatic approval for even 100% equity is available for majority of the processed food items.

Value addition to the raw produce in the country is only seven per cent, compared to as much as 23% in china, 45% in the Philippines and 188 in the U.K.

Background of the policy:

The small scale and unorganized sectors today account for 75% of the total industry having only local presence without much access to knowledge, technology and marketing network. The differential between the farmer's realization and the final consumer price is very high in our country even in the fresh produce. In processed food products the high price on account of cumulative effect of low productivity, high cost of raw material, spoilage due to poor infrastructure, inefficient and costly transportation, high cost of finance an high incidence of taxes and duties, leads to the vicious cycle of low demand, low capacity utilization, high per unit cost, low demand. Despite the existence of a strong and wide network of R&D institutions (CSIR labs, ICAR institutions, ICMR Establishments, Universities and Private institutions), their linkage with the users like farmers and industry, is not well established resulting in lack of technology flow, pure & academic research rather than applied and commercial, lack of involvement of industry in research work, and resource crunch. The unattractive nature and the high risk profile of food processing industry has impeded required flow of credit from financial institutions who are yet to acquire the proper understanding of this sector to attain the requisite levels of appraising skills. Low margins, seasonality and high perishability being the distinct features of this industry, the access to seed capital and working capital is not easy. Despite having been declared a priority-lending sector, there is hardly any growth in capital flow to this industry. With the coming in of WTO regime the country has to prepare for meeting the requisite quality standards in order to compete with imported goods in the domestic market itself. This calls for adoption of high tech machine and technologies as also development of entire chain of the infrastructure. Weak database and lack of market intelligence are the prevailing features of this sector. Multiplicity of laws and regulatory authorities throttle the industry in its further growth calling for harmonization of laws, development and administration of standards in consonance with international standards like Codex through a single authority. Cooperative institutions and other parastatal organizations are weak and peoples participation, either through Panchayat Raj Institutions or NGOs or farmers organizations, industries association in food sector remains far from adequate.

The policy: it has five sections, as given below:

CREATING ENABLING ENVIRONMENT:

An appropriately enabling environment for the entrepreneur will be created through:

a. Fiscal initiatives/interventions like rationalization of tax structure on fresh foods as well as processed foods and machinery used for the production of processed foods.
b. Harmonization & Simplification of food laws by an appropriate enactment to cover all provisions relating to food products so that the existing system of multiple laws is replaced and also covering issues concerning standards Nutrition, Merit goods, futures marketing, equalisation fund etc.
c. A concerted promotion campaign to create market for processed foods by providing financial assistance to Industry Associations, NGOs/Cooperatives, Private Sector Units, State Government Organization for undertaking generic market promotion.
d. Efforts to expand the availability of the right kind and quality of raw material round the year by increasing production, improving productivity.

e. Strengthening of database and market intelligence system through studies and surveys to be conducted in various States to enable planned investment in the appropriate sector matching with the availability of raw material and marketability of processed products.
f. Strengthening extension services and to the farmers and co-operatives in the areas of post harvest management of agro-produce to encourage creation of pre-processing facilities near the farms like washing, fumigation, packaging etc.
g. Efforts to encourage setting up of agro-processing facilities as close to the area of production as possible to avoid wastage and reduce transportation cost.
h. Promotion of investments, both foreign and domestic.
i. Simplification of documentation and procedures under taxation laws to avoid unnecessary harassment arising out of mere technicalities.

INFRASTRUCTURAL DEVELOPMENT

The policy will facilitate:

a. Establishment of cold chain, low cost pre-cooling facilities near farms, cold stores and grading, sorting, packing facilities to reduce wastage, improve quality and shelf life of products.
b. Application of biotechnology, remote sensing technology, energy saving technologies and technologies for environmental protection.
c. Building up a strong infrastructural base for production of value added products with special emphasis on food safety and quality matching international standards.
d. Development of Packaging Technologies for individual products, especially cut-fruits & vegetables, so as to increase their shelf life and improve consumer acceptance both in the domestic and international markets.
e. Development of new technologies in Food Processing & Packaging and also to provide for the mechanism to facilitate quick transfer of technologies to field through a net work of R&D Institutions having a Central Institute at the national level with satellite institutions located strategically in various regions to cover up the whole Country and to make available the required testing facilities. This could be done by establishing a new institution or strengthening an existing one.
f. Development of area-specific Agro Food Parks dedicated to processing of the predominant produce of the area e.g., apple in J&K, pineapple in North East, Lichi in Bihar, Mango in Maharashtra & Andhra Pradesh etc. etc.
g. Development of Anchor Industrial Centre and/or linkage with Anchor Industrial Units having net work of small processing units.
h. Development of Agro-industrial multi-products units capable of processing a cluster of trans-seasonal produces.

BACKWARD LINKAGE

The policy will promote:

a. Establishment of a sustained and lasting linkage between the farmers and the processors based on mutual trust and benefits by utilizing the existing infrastructure of cooperative, village panchayats and such other institutions.
b. Development of Futures Market in the best interest of both the farmers and the processors ensuring a minimum price stability to the farmer and a sustained supply of raw material to the processor.
c. Mechanism to reduce the gap between the farm gate price of agro-produce and the final price paid by the consumer.

d. Setting up of an Equalisation Fund to ensure sustained supply of raw material at a particular price level and at the same time to plough back the savings occurring in the eventuality of lower price to make the Fund self-regenerative.

FORWARD LINKAGE

The policy will promote:

a. Establishment of a strong linkage between the processor and the market to effect cost economies by elimination of avoidable intermediaries.
b. Establishment of marketing network with an apex body to ensure proper marketing of processed products.
c. Development of marketing capabilities both with regard to infrastructure and quality in order to promote competitive capabilities to face not only the WTO challenge but to undertake exports in a big way.

SPECIAL PROVISION

The following shall receive special consideration and higher priority:

a. The North Eastern Region, the Hilly Areas, Islands and the ITDP areas in the country to be given not only special attention but also special consideration.
b. The fiscal incentives like excise duty/sales tax concession and the tax holidays to be provided not only to those units which are set up in these areas but also to those units which though set up outside these areas near the market center, are engaged in processing the produce coming from these areas.
c. Tax holiday for food processing units, with the exception of liquor, cigarettes and aerated drinks and similar luxury items, for a period of 10 years.

Minister Jayanti Natarajan on HFCs

HFCs: What is your position after the recently concluded Montreal Protocol meeting?
The UNFCCC is the forum where HydroFlouroCarbons (HFCs) should be discussed. The attempt to take it to the Montreal Protocol is something that has a long way to go because HFCs are not ozone depleting substances. Therefore even to talk about bringing it anywhere near the Montreal Protocol would involve amending the Vienna Convention at a Conference of Parties, which would only happen next year. Secondly, once it's taken up at the Montreal Protocol, it can no longer be discussed at the UNFCCC, which would be very wrong as the issue of CBDR and equity would then immediately come into play because they are confined to the UNFCCC.

In the spirit of carrying forward the climate change dialogue, we have agreed at the G20 to discuss this in the task force with the U.S. and this also figured in the Prime Minister's talks with President Obama. We have every intention of talking seriously about this in a way that does not impact our economy and country.

Nineteen countries, including some G20 countries, have opposed the U.S. and Micronesia proposal at the recent Montreal Protocol meeting. These included China, Argentina Brazil, South Korea and Saudi Arabia. The BASIC too took the same view at its recent meeting in China.

Samudra Ratnakar

State of art Geo-scientific research vessel **RV Samudra Ratnakar** was dedicated to the the nation at Kandla Port of Gujarat on 12 October 2013. RV Samudra Ratnakar is specially designed to carry out sea bed-mapping, mineral exploration in the deep waters along with geo-scientific oceanographic researches. The Geological Survey of India (GSI) in the last week of September 2013 took the delivery of Korean manufacturer Hyundai Heavy Industries' oceanographic research vessel RV Samudra Ratnakar.

The research vessel RV Samudra Ratnakar is 103 m long, 13 m wide and can travel at an average speed of 11.4 knots. It will be used for survey and exploration of the seabed in Indian and international waters at depths of 10000 m. It will be docked in Mangalore. Cost of the vessel is 600-crore Rupees. The Geological Survey of India entered into an agreement with Shipping Corporation of India for the management, operations as well as maintenance of Samudra Ratnakar.

Maldives and the Constitutional crisis

Presidential elections were held in the Maldives on 7 September 2013. As no candidate received a majority of the vote, a second round was planned for 28 September, to be contested by former President Mohamed Nasheed and Abdulla Yameen after incumbent President Mohammed Waheed Hassan was defeated in the first round of voting. However, on

27 September the Supreme Court cancelled the run-off and annulled the first round results.A re-run of the first round will be held on 9 November, with a run-off if required on 16 November.

Nasheed was contesting the election following his controversial resignation amidst the 2011–12 Maldives political crisis with the aim of returning to the presidency after what he maintains was a coup d'état orchestrated by his deputy and successor Mohammed Waheed Hassan. Abdulla Yameen, half-brother of former president Maumoon Abdul Gayyoom is the candidate from Gayyoom's party, the Progressive Party of Maldives.

People in Maldives and the international community still remain anxious whether the elections would be held. The term of present Mohammed Waheed's government ends on November 11 and a new president has to take over by that date to avoid a constitutional crisis. Elections scheduled on October 19 could not take place due to non-cooperation of the Progressive Party of Maldives (PPM) candidate Abdullah Yameen and the Jumhoory Party (JP) candidate Qasim Ibrahim. However, if there is no outright winner in the November 9 first round then a run-off would be held on November 16. There is a possibility of a constitutional crisis if the elections are not held on the announced date and Maldives, in effect, will be without a president after November 11.

Qasim Ibrahim is member of powerful Judicial Services Commission and is the richest businessman of the Maldives.

In the earlier polls held on September 7, the Maldivian Democratic Party (MDP) candidate Mohamed Nasheed had secured 45.5 per cent of the popular vote. The second and third ranking candidates were a good 20 per cent behind. It was clear that they had little chance of winning.

September 7 elections were endorsed as free, fair and peaceful by the international community.

In the past, Waheed has been inimical to India's security and economic interests and has been a tool in the hands of those extra-regional forces that are trying to strengthen their presence in the Indian Ocean. The multi-party democratic elections in the Maldives at present seem to be a victim of the extra-regional forces who want their presence even if it means scuttling the nascent democracy in the Maldives.

The geostrategic importance of the nearly 1,200 islands of the Maldives underlines the importance for New Delhi of positive bilateral relations with Male. At present, India is dependent on oil for more than 90 percent of its energy needs, and over the next few decades, 90 percent of that oil will come from the Persian Gulf by way of the Arabian Sea. Moreover, coal imports from Mozambique, are set to increase dramatically, augmenting the coal that India already imports from around the Indian Ocean from countries such as South Africa,

Indonesia, and Australia. Beyond refueling stations, by maintaining access to these ports, the expanding Indian Navy can safeguard its interests by providing security for the sea lines of communication and ensuring vital resources reach India's coasts. Moreover, such access provides strategic depth in any potential conflict with China, wherein India could attempt to restrict the flow of oil through the Indian Ocean to the Malacca Strait.

At the same time, similar trade, energy and geostrategic imperatives are driving Chinese ambitions in the Indian Ocean region. Eighty-five percent of China's oil and natural gas passes through the Indian Ocean on its way to China's Pacific Ocean ports.Beijing's already significant "economic aid and diplomatic outreach" will only increase as it looks for increased access to modern deepwater ports.

New Delhi has all along seen itself as "net security provider" to all the littoral nations in the Indian Ocean region, and the presence of Chinese around 500 nautical miles from Kerala in the Maldives will have direct impact on India's strategic interests.

India provides aircraft and warships to several countries, including the Maldives, Mauritius and Seychelles as goodwill gesture and enhance their military capabilities. In addition, Indian ships and aircraft patrol the exclusive economic zones (EEZ) of these countries to check piracy and illegal maritime trade.

Moreover, India took the lead seven years back when it formed Indian Ocean Naval Symposium (IONS) to bring together all the countries in this region under one umbrella to address issues like piracy, terrorism and securing lanes.

As regards securing its interests in the Indian Ocean region, the Indian Navy has over the years increased its strategic reach by inducting faster moving warships besides long range maritime reconnaissance aircraft.

Cable Television Networks (Regulation) Amendment Act, 2011

Cable Television Networks (Regulation) Amendment Act, 2011 has made it mandatory for switchover of the existing analogue Cable TV networks to Digital Addressable System (DAS) by December 2014, in a phased manner and the digital switchover in the four metros of Delhi, Mumbai, Kolkata and Chennai was mandated to be completed by October end , 2012.Highlights:

a. The Cable Television Networks (Regulation) Amendment Act 2011 mandates that all cable TV operators will have to transmit TV signals in an encrypted format through a digital addressable system. This will be done through the installation of a set top box in every cable TV home.
b. Consumers will now be able to enjoy better picture and sound quality, enhanced services such as high definition and video on demand content.
c. Viewers will be able to choose and pay for only those channels that they want rather than having to pick from packages with fixed prices. The Bill will prevent Local Cable Operators (LCOs) from bypassing the digital set-top box, and deciding the mix and price of channels according to locality and customer base. The bill will also shift

the balance of power away from LCOs to cable service providers and TV broadcasters who will now be able to monitor their subscriber base and control the flow of revenues.

d. Digitisation, experts say, will increase the broadband penetration in India, and will do so at a much lower cost. Analysts suggest a 10 per cent increase in broadband penetration will increase the GDP by 1.5 per cent.
e. Broadcasters will now be relieved from paying huge sums as carriage fee, thereby increasing profitability and enabling them to focus on better content creation.
f. Subscription revenue will increase for the broadcaster and make them less dependent on advertising and drive higher value creation.
g. Niche and specialist channels will now be able to launch and grow since the artificial shortage of bandwidth created by cable operators will no longer hold true.
h. Transparency in the entire system will ensure accurate reporting of subscriber numbers and revenue, thus creating higher value for the exchequer and preventing the fueling of the black economy. Currently, broadcasters claim cable operators and distributors gain disproportionate revenues through under-declaration of subscribers.
i. Higher growth in profitability for the broadcasters and Multiple System Operators (MSOs) will ensure creation of higher value jobs and drive value in the industry.
j. Cable and broadcasting will become a more interesting option for private investment due to the organisation and transparency. Advertisers too will now be able to create targeted campaigns due to higher visibility into the viewership patterns of users.

India- Myanmar

Myanmar is changing. Promulgation of the 2008 Constitution, elections in November 2010, a new Parliament, and bye-elections in April 2012 are the political reforms along with the release of Aung San Su Chi from house arrest and release of other political prisoners.

Myanmar's government also recently signed ceasefire agreements with the Karen and Shan armed factions, and although no resolution has been reached with the Kachin Independence Army, the government has pulled back from its offensive.

Economic reforms include *float* of the *kyat, its currency.*

India's policy towards Myanmar has stabilised over time and its preference for pragmatism has spanned governments led by parties of different hues. This was a consequence of the realisation, especially since 1993, that the pursuit of India's strategic and economic interests could not await the prolonged political evolution of this important neighbour.

It is in this context that Prime Minister Manmohan Singh undertook a three-day visit to Myanmar on 27 May 2012, the first such visit by an Indian Prime Minister in 25 years. During the visit, Singh met the new civilian leadership in the new capital, Naypyitaw, and NLD leader Daw Aung San Suu Kyi in the old capital, Yangon.

India and Myanmar signed 12 MoUs (Memorandums of Understanding) on matters of mutual concern, wherein *development and connectivity* were the key watchwords. The understanding is that improved connectivity would lead to greater access between the two countries, while cooperation in fields such as agriculture, trade, education and information technology would address Myanmar's developmental needs. One of the important agreements reached was regarding cooperation between a Myanmar and an Indian University and cooperation

between a Myanmar Ministry of Foreign Affairs think tank (MISIS) and two Indian think tanks, one of which is the Institute for Defence Studies and Analyses. Cooperation among strategic studies think tanks is especially welcome because while MISIS is connected with the ASEAN network of think tanks, it has no such link on an institutionalised basis with the think tanks of India or of the South Asian region.

Stability along the Indo-Myanmar border depends in large measure on economic stability that comes through planned development. For instance, Myanmar has many missing road and rail links and over 70 bridges requiring construction before the connectivity deficit can be overcome. It has been decided to initiate steps to upgrade road sections in order to make the trilateral Asian Highway (connecting Moreh in Manipur to Mae Sot in Thailand) a reality. Besides initiating improvements in road connectivity, a direct air service between India and Myanmar has also received the green signal. Similarly, hope has been generated for eventual freight transport by rail network extending to other South East Asian countries through Myanmar from India's North East.

Myanmar's energy sector would get a boost with Indian companies investing in that country's gas and oil sectors. It is likely that Indian companies would be considered when more oil blocks are auctioned. In addition, border trade would be improved and the overall trade doubled beyond the current $1.2 billion. Myanmar also once again reassured India support for tackling safe havens of Indian insurgents in its territory.

A realisation began to dawn in New Delhi soon after 1988 that India's support for the pro-democracy forces in the August 1988 uprising failed to make any ground level difference. It was not liked by the State Law and Order Restoration Council (SLORC) regime. It was only in 1991, however, that a decision was taken to discontinue criticism of the Myanmar regime in All India Radio's (AIR) Burmese broadcasts. The visit to Yangon (then Rangoon) by the Indian Foreign Secretary in 1993 started the process of improving relations between the two countries. The Indian Government also made an attempt to curb the anti-SLORC activities of Myanmar students in India. These adjustments in Indo-Myanmar relations occurred in the backdrop of momentous changes on the Indian economic horizon. Liberalisation had been introduced in the early 1990s and the Look East Policy too had its beginnings around the same time. These developments helped in defining India's objectives in Myanmar.

To begin with, Myanmar was seen as an important part of India's Look East Policy for the simple reason that it is the only South East Asian nation with which India shares a land border. By ensuring smooth trade and connectivity between India and Myanmar, the objective of much needed development in India's North Eastern states could be achieved. Myanmar was viewed as a land-bridge to the rest of South East Asia. A second important factor in India-Myanmar relations is the need to control the activities of insurgent groups in their bordering states. Thirdly, India is located between the "Golden Crescent" in the west and the "Golden Triangle" in the east and thus is confronted by the arms-drug nexus and faces a "silent emergency". Myanmar still has the dubious distinction of being the second largest producer of opiates (after Afghanistan) and for having a high HIV rate. Opium poppy cultivation has increased in Myanmar every year since 2006, with cultivation concentrated chiefly in the Shan state in the east. The decline in opium production in 2010 due to a disease in the poppy plant in Afghanistan probably incentivised Myanmar poppy

cultivators.3 Further, the traditional opium-based drugs have been replaced by designer drugs like amphetamine-type stimulants (ATS) ("speed", "ice" and "ecstasy) and Myanmar happens to be a major centre for the manufacture of ATS, notably of metamphetamine. Given all this, India and Myanmar need to take steps keeping in mind a holistic view of security. Fourthly, India and Myanmar also need to work together to prevent the spread of epidemics across borders especially considering the threat of HIV/AIDS and recent outbreaks like swine flu and bird flu. Finally, flowing from all the above factors is the need to ensure the development of India's North Eastern states.

In July 2010, SPDC Chief Than Shwe came to New Delhi. When President Thein Sein representing the new "civilian" government visited in October 2011, two important documents were signed: first, an MoU on the upgradation of Yangon Children's Hospital and Sittwe General Hospital; and second, a programme for Cooperation in Science and Technology for the period 2012–15. India also extended a $500 million line of credit to Myanmar. Military-to-military cooperation continued with the Indian Army Chief visiting Myanmar in January 2012 and assuring a higher intake of Myanmar cadets in the NDA, among other things.

India and Myanmar have also continued to interact at the regional and subregional levels through ASEAN, BIMSTEC, the Mekong Ganga Cooperation forum and SAARC (Myanmar is an Observer since 2008). Myanmar became a BIMSTEC member in December 1997. It took over as the chair of BIMSTEC from India in 2006.

India decided that it needs to engage with the regime in power while gradually attempting to bring about a desirable change in the country. Given its deeper understanding of the ground situation as well as a policy that seeks to aid sustainable development and harmonious growth, India is likely to continue to enjoy a special position in Myanmar. Much goodwill will be generated if India were to work towards addressing the real needs of the people of Myanmar. This, in particular, implies strengthening the health and education sectors in that country's border areas. There are many things that should work in India's favour including geographical proximity, common colonial legacy, common cultural bonds, India's democratic credentials and membership of common organisations/forums, which can be used by both countries to transform their experience of the past into a common strength.

More on energy and connectivity cooperation

The current state of Indo-Myanmar relations appears healthy. Both countries have set a target of doubling bilateral trade to $3 billion by 2015. India has offered assistance to Myanmar "for road development projects to build physical connectivity with Myanmar. These include up-gradation of the Tamu-Kalewa-Kalemyoa road (about 160 km) in Myanmar across the border from Manipur; Kaladan Multi-Modal Transit Transport Project, which envisages development of road and inland waterways from Sittwe port in Myanmar to Mizoram; upgradation of Rhi-Tiddim Road (about 60 km) in Myanmar adjoining Mizoram; and some segments of Trilateral Highway Project (about 1,360 km) connecting Moreh (Manipur, India) to Mae Sot (Thailand) through Myanmar."

The Kaladan Multimodal Transit Transport Project and the Rhi-Tiddim project, once completed, will transform India' North-East and the bordering Myanmar regions.

President Thein Sein's visit to India in October 2011 was a landmark event that sought to transform India-Myanmar relations. A number of agreements were signed during the visit.

Energy security and the power sector are important areas for mutual cooperation. During President Thein Sein's visit, it was agreed to enhance cooperation in the area of oil and natural gas. In this context, Myanmar welcomed the substantial investments made by Indian companies, including GAIL, ESSAR, ONGC, among others, in off-shore and on-shore blocks, and the construction of natural gas pipelines. Myanmar agreed to encourage further investments by Indian companies, both public and private, in its oil and natural gas sectors. Dr.Singh's visit took it forward.

The two sides reiterated their commitment to cooperate in the implementation of the Tamanthi and Shwezaye projects on the Chindwin River Basin in Myanmar. As Myanmar opens up to the outside world, India can aid it immensely in nurturing its nascent democracy. Myanmar is rich in natural resources, and consistent and long-standing cooperation with India will help it develop its true potential. For India, cooperation with Myanmar will help transform the North-East, bolster its LEP, and help it emerge as a major Asian power.

Major Indian Projects in Myanmar

- Construction, upgrading land resurfacing of the 160 Km long Tamu-Kalewa-Kalemyo road, upgradation of Rhi-Tidim and Rhi-Falam roads.
- Kaladan Multi-modal Transport project
- ADSL project for High Speed Data Link in 32 Myanmar Cities has been completed by TCIL
- ISRO assisted Data Processing centre in Yangon
- A heavy truck assembly of TATAs.
- ONGC Videsh Limited, GAIL and ESSAR have stakes in the energy sector in Myanmar

Myanmar has been given the status of observer in SAARC in 2008

Israel-India Economic Relations

India is Israel's second-largest trading partner after the United States. Bilateral trade has blossomed from just $80 million in 1991 to about $10 billion in 2012.

Non-military trade is also robust, with both countries doing nearly $5 billion in business in 2011. Israel and India are also in the final stages of negotiating a free trade agreement, which is expected to at least triple trade between the two countries. Currently, India is Israel's second largest Asian trading partner, behind China.

India-Israel relations continue to develop strongly in several areas, including agriculture, trade, water resources and cutting-edge technologies. Israeli co-operation with India in the field of agriculture and water technology is growing both through government-sponsored initiatives and private business deals.

Since 1998, Israel has sponsored a $2 million horticultural demonstration farm at the Indian Agricultural Research Institute at Pusa, New Delhi. The project aims to demonstrate different technologies for intensive and commercially oriented suburban cultivation of horticultural crops for improved quality and productivity. The project farm serves as a center for R&D, training and the transfer of new technology.An Agricultural Cooperation Agreement is being implemented in Haryana, Maharashtra, Rajasthan and Gujarat States, and focuses on the

transfer of agricultural technologies including the establishment of demonstration centers in each state. In Haryana and Maharashtra the main focus is given to mangoes, olives, pomegranates and citrus crops, as well as to vegetables and spices. In Rajasthan and Gujarat, agricultural practices focus on irrigation and water management including utilization of wastewater purification technologies for irrigation. Professional training by Israeli experts is conducted in India and in Israel, including courses and consultation missions.

In 2008, Israel and India signed a Memorandum of Understanding in the field of agriculture, establishing six centers of excellence covering production of vegetables and fruit using ultra-modern technologies in Haryana and Maharashtra and new projects for the use of saline water and drip irrigation in Gujarat and Rajasthan.

Since 2009, Israeli company has been working in the Cherrapunjee region in the Indian state of Meghalaya – known as the wettest place on earth – to store rainwater and help reforest after the monsoon season. In 2010, Israel and India agreed to expand the scope of ongoing joint research and development ventures in the field of agro-tech industries, irrigation and water management . The work plan provides for collaborative research in fertigation, soil less culture for growing high value horticulture crops, cooperation in development and evaluation of energy efficient greenhouse structures, studies on recycling of domestic wastewater for irrigation, post harvest management and value addition for fruits, vegetables and dairy products and dairy development through genetic improvement utilising germplasm from Israel.

In 2011, the first Indo-Israel Centre of Excellence for vegetables was inaugurated in Gharaunda town, Haryana. Through the project, Israeli and Indian experts share technology and undertake protected cultivation of various vegetables, including tomatoes, cucumbers and capsicum, providing a live demonstration of Israeli agricultural technology and know-how to local farmers.

National Cyber Security Policy 2013: An Assessment

With an aim to monitor and protect information and strengthen defences from cyber attacks, the National Cyber Security Policy 2013 was released on July 2, 2013 by the Government of India. The purpose of this framework document is to ensure a secure and resilient cyberspace for citizens, businesses and the government. With rapid information flow and transactions occurring via cyberspace, a national policy was much needed.

The document highlights the significance of Information Technology (IT) in driving the economic growth of the country. It endorses the fact that IT has played a significant role in transforming India's image to that of a global player in providing IT solutions of the highest standards.

The Cyber Security Policy aims at protection of information infrastructure in cyberspace, reduce vulnerabilities, build capabilities to prevent and respond to cyber threats and minimize damage from cyber incidents through a combination of institutional structures, people, process, technology and cooperation. The objective of this policy in broad terms is to create a secure cyberspace ecosystem and strengthen the regulatory framework. A National and sectoral 24X7 mechanism has been envisaged to deal with cyber threats through National Critical Information Infrastructure Protection Centre (NCIIPC). Computer Emergency Response Team (CERT-In) has been designated to act as a nodal agency for coordination of crisis management efforts. CERT-In will also act as umbrella organization for coordination actions and operationalization of sectoral CERTs. A mechanism is proposed to be evolved for obtaining strategic information regarding threats to information and communication technology (ICT) infrastructure, creating scenarios of response, resolution and crisis management through effective predictive, prevention, response and recovery action.

The policy calls for effective public and private partnership and collaborative engagements through technical and operational cooperation. The stress on public-private partnership is critical to tackling cyber threats through proactive measures and adoption of best practices besides creating a think tank for cyber security evolution in future.

Another strategy which has been emphasized is the promotion of research and development in cyber security. Research and development of trustworthy systems and their testing, collaboration with industry and academia, setting up of 'Centre of Excellence' in areas of strategic importance from the point of view of cyber and R&D on cutting edge security technologies, are the hallmarks of this strategy laid down in the policy.

The policy also calls for developing human resource through education and training programmes, establishing cyber security training infrastructure through public private partnership and to establish institutional mechanisms for capacity building for law enforcement agencies. Creating a workforce of 500,000 professionals trained in cyber security in the next 5 years is also envisaged in the policy through skill development and training. The policy plans to promote and launch a comprehensive national awareness programme on security of cyberspace through cyber security workshops, seminars and certifications with a view to develop awareness of the challenges of cyber security amongst citizens.

The policy document aims at encouraging all organizations whether public or private to designate a person to serve as Chief Information Security Officer (CISO) who will be responsible for cyber security initiatives. Organizations are required to develop their information security policies properly dovetailed into their business plans and implement such polices as per international best practices. Provisions of fiscal schemes and incentives have been incorporated in the policy to encourage entities to install trustworthy ICT products and continuously upgrade information infrastructure with respect to cyber security.

The release of the National Cyber Security Policy 2013 is an important step towards securing the cyber space of our country. However, there are certain areas which need further deliberations for its actual implementation. The provisions to take care security risks emanating due to use of new technologies e.g. Cloud Computing, has not been addressed. Another area which is left untouched by this policy is tackling the risks arising due to increased use of social networking sites by criminals and anti-national elements. There is also

a need to incorporate cyber crime tracking, cyber forensic capacity building and creation of a platform for sharing and analysis of information between public and private sectors on continuous basis.

Creating a workforce of 500,000 professionals needs further deliberations as to whether this workforce will be trained to simply monitor the cyberspace or trained to acquire offensive as well as defensive cyber security skill sets. Indigenous development of cyber security solutions as enumerated in the policy is laudable but these solutions may not completely tide over the supply chain risks and would also require building testing infrastructure and facilities of global standards for evaluation.

Indian Armed forces are in the process of establishing a cyber command as a part of strengthening the cyber security of defence network and installations. Creation of cyber command will entail a parallel hierarchical structure and being one of the most important stakeholders, it will be prudent to address the jurisdiction issues right at the beginning of policy implementation. The global debate on national security versus right to privacy and civil liberties is going on for long. Although, one of the objectives of this policy aims at safeguarding privacy of citizen data however, no specific strategy has been outlined to achieve this objective.

The key to success of this policy lies in its effective implementation. The much talked about public-private partnership in this policy, if implemented in true spirit, will go a long way in creating solutions to the ever-changing threat landscape.

THE NEW LANDSCAPE OF PRIVACY

How closely are you being watched? A look at recent developments in the field of surveillance

INDIA'S CENTRAL MONITORING SYSTEM (CMS)

The CMS, which became operational on a pilot basis in April this year, is a large-scale surveillance programme that can potentially give arms of the government such as the National Investigation Agency, the Central Bureau of Investigation and even the income-tax department access to every byte of an individual's communication data, including phone calls, emails and SMSes.

The CMS is not subject to oversight by the courts or Parliament, which means that there are scant safeguards to prevent the misuse of your personal information against you.

THE PRISM PROGRAM

PRISM is a clandestine electronic surveillance program conceived by the United States National Security Agency. It has been in operation since 2007, accessing electronic communications data from emails, phone calls, SMSes and webchats, via service providers. The PRISM program allows the NSA to obtain data without having to file a request with the service provider or obtaining individual court orders.

It operates under the supervision of the United States Foreign Intelligence Surveillance Court, under the provisions of the Foreign Intelligence Surveillance Act.

PRIVACY AND THE LAW IN INDIA

Unlike many Western countries, India does not have a privacy law. The concept is instead defined by different Supreme Court rulings. In October 2012, the Justice AP Shah Committee — appointed by the Planning Commission and headed by the former chief justice of the Delhi high court — submitted a first-of-its-kind report that attempted to define privacy in the Indian context.

The Justice AP Shah Committee had been constituted to address the fact that, in today's digital age, the government has access to more information about its citizens than ever before.

In its report, the committee recommended nine national privacy principles, including choice and consent for citizens, limits on the collection of individuals' private data and for individual's right to access the personal data collected.

The Department of Personnel and Training is now working on a draft privacy law based on the report.

YOUR RIGHT TO PRIVACY — THE PUBLIC DEBATE

The issue of privacy has been raised repeatedly while implementing the Right to Information Act, as public authorities refused information on grounds of privacy that were not defined.

RTI activists such as Aruna Roy had asked the government to frame a privacy law to protect the personal freedom of individuals and ensure the effective implementation of the sunshine RTI transparency law.

Since 2009, when the government rolled out its plan for the implementation of the unique identification (UID) project — which mandates a biometric identity card for every Indian above the age of five — there was widespread concern that it would infringe on the individual's privacy.

There remains concern about the possible compromise or misuse of this data — since the UID project does not operate within a specific legal or Constitutional framework.

THE PRISM PROGRAM AND INDIA

In March this year alone, NSA had collected a reported 97 billion pieces of intelligence from computer networks worldwide. In a ranking of countries whose data was most widely accessed by prism, India stood fifth, with 6.3 billion pieces of information from India collected by PRISM through computer and data networks — in one month. Among the areas feared compromised are the privacy of Indian citizens and the nation's independent foreign policy decisions.

Some select FAQs

Considering the fact that arms of foreign origin were used in recent Naxal attacks, what is the current state of arms trafficking in India? What specific measures are being taken in this regard?

The terrorist and insurgent groups operating in India get arms and ammunition essentially from two sources. In the first instance, weapons are moved from across the border. These can be pushed in as a result of state sponsorship, as seen in the case of Pakistan in J&K. It could also be smuggled along with drugs and fake currency as composite loads, as is common along the borders of Punjab and Rajasthan. Finally, it is trafficked from countries like Bangladesh, Myanmar and Nepal for profit. This is a major source of weapons for insurgent groups in the Northeast. Most of these weapons are of Chinese origin and reach the clandestine Southeast Asian arms markets. These are then bid for and bought with the aim of trafficking. The Naxals can potentially procure these weapons from groups in the Northeast, given their comfortable financial position.

The second source is indigenous. It needs to be reinforced that most weapons used by the Naxals are of Indian origin and are snatched and looted from the police and central police organisations. Given the large scale of looting that has been in progress, there has not been a very critical need for weapons from outside for the Naxals.

One of the steps initiated for reducing arms trafficking is the establishment of a border fence, which has brought down incidents of smuggling. The deployment of border forces has also been augmented and made more dynamic to improve anti-smuggling measures. The positioning of electronic surveillance devices has helped in keeping an eye on the borders. Improvement in scanning of people and vehicles has also taken place, which has helped reduce trafficking. However, having said this, there is a lot more that needs to be done to stop trafficking of arms, especially in areas which have difficult ground conditions or where borders are porous, as in the case of Nepal.

How is organised crime in India reinforcing terrorism? What are the linkages especially with regard to terror funding?

Crime and terrorism can potentially have a very close linkage. While there may or may not always be a linkage between the two, however, both international case studies and those in India do point towards it.

If we look at some of the regions in the country affected by terrorism, this linkage becomes apparent. In the Northeast, extortion is the fundamental basis for funding all forms of terrorism. In addition to this, kidnapping has been used extensively for spreading terror and raising funds. Human trafficking, drug trafficking and gun running are some of the other criminal activities that have been common in these areas.

In J&K, counterfeit currency has been a major source of funding terrorism.
In the Maoist terror movements, extortion is yet again a common phenomenon. They have also indulged in robberies of banks to fund their movement. There have also been reports of cuts being enforced on drug yielding crops in the region.

The Indian Mujahideen has also resorted to crime to raise funds. This includes robberies, kidnappings, etc.

There are also a number of insurgent groups which over a period of time have morphed into crime syndicates. What began as an ideological movement is now merely a means of generating profit. This is especially the case with insurgent groups in Northeast India.

What are the threats posed by communication networks to the internal security of India?

Communication networks are a part of our critical information infrastructure which was defined in the IT Act, 2000 as "the computer resource, the incapacitation or destruction of which, shall have debilitating impact on national security, economy, public health or safety." Communications networks are crucial to the connectivity of other critical infrastructure, viz. civil aviation, shipping, railways, power, nuclear, oil and gas, finance, banking, communication, information technology, law enforcement, intelligence agencies, space, defence, and government networks. Therefore, threats can be both through the networks as well as to the networks.

Securing the networks is complicated by a number of factors. In the first instance, much of the hardware and software that make up the communications ecosystem is sourced externally; as a case in point, Chinese manufacturers such as Huawei and ZTE have supplied about 20 per cent of telecommunications equipment while Indian manufacturers have about 3 per cent of the market. As recent incidents have shown, foreign governments are not above taking advantage of the market penetration and dominance of their companies to infiltrate and compromise telecommunications networks. This is a potent combination of expertise and resources.

The task of securing the networks is also complicated by the fact that much of the infrastructure is in the hands of private companies who see measures such as security auditing and other regulations and frameworks as adding to their costs. The government in the National Telecom Policy of 2012 has set a target for domestic production of telecom equipment to meet the Indian telecom sector's demand to the extent of 60 to 80 per cent by 2020. The Ministry of Communications and Information Technology has also repeatedly urged telecom companies to take note of vulnerabilities in their equipment and told them they would be held responsible and subject to penalties if the vulnerabilities are not addressed. A number of other measures, such as making local certification mandatory, have been announced, but there is a need for a more integrated and strategic approach to securing the

networks since they are so crucial to the economic, social and political wellbeing of the country.

What is the 'New Silk Road' initiative taken by the United States? What are the benefits for India in this?

The 'New Silk Road' initiative was introduced by the former US Secretary of State Hillary Clinton on the sidelines of the UN General Assembly in September 2011. This US strategy primarily aims at the economic development of Afghanistan by utilising its potential as a land-bridge between the 'East' and the 'West' and connecting Central with South Asia. It has been reasoned that economic incentives will encourage political integration in order to build long-term stability in the region. This is an ambitious though a visionary plan which will require a lot of deft political and economic manoeuvring.

The initiative aims to create new infrastructure like highways, railroads, electricity networks and energy pipelines along with reduced legal barriers to trade. Some specific projects which have been mentioned include the Turkmenistan-Afghanistan-Pakistan-India (TAPI) pipeline project, U.S. sponsored project to transmit electricity from hydropower plants in Central Asia to Afghanistan and a plausible Afghanistan-Pakistan free trade agreement. The transit potential of Afghanistan can help sustain its economy over the long run and at the same time help build political, economic and energy ties across the region.

In the Ancient Silk Road, wherein Afghanistan was centrally located due to its geographical location, goods were transported from Beijing to Bactria and then towards Turkey and the commercial ports of Europe. The 'New Silk Road' broadly highlights the present day geopolitical realities. To an extent, the new US policy can also be seen as an attempt to reduce Russia's influence in Central Asia, a region often referred to as Russia's 'Near Abroad'.

India has backed this multinational initiative aimed at linking the resource-rich Central Asia with South Asian economies. The mutual benefits are enormous. India will gain a direct access to both Afghan and Central Asian markets and from there on to Russian and European markets. This is a much more economically viable route. The energy potential of Central Asian countries can also be tapped into. Moreover, it has been envisioned that the new initiative will help in bringing lasting stability and prosperity to Afghanistan, a goal long strived for by India.

What are the causes for Rakhine unrest? How does it impact democratisation process in Myanmar?

Perhaps, the biggest challenge Myanmar regime faces is the task of national reconciliation among the various ethnic groups. In this respect, its challenge is greater than the challenge Indonesia faced in the post-Suharto era of democratisation. Ethnic minorities constitute an important factor in Myanmar's politics. The Burmans make up about two-thirds of the total population. The ethnic minorities include the Karens, the Shans, the Mons, the Chins, Kachins and the Rohingyas. Only the Rohingyas are not recognised as a national minority.

The deep ethnic animosities in Rakhine state continue to destabilise Myanmar with Rohingyas comprising much of the internally displaced population in the country. They have been seeking refuge in Southeast Asian countries like Malaysia and Indonesia as the boat people. The commission on Rakhine communal violence submitted its over-100 page report to the president on April 22, 2013. It dealt with the causes of the conflict, solution to the problems that led to the conflict and action points for the government. Earlier, the Human Rights Watch had published a report titled "All You Can do is Pray."

Myanmar thus needs to resolve the Rohingya problem: would that be done by granting them citizenship status or by according them ethnic minority status or by reducing the barriers on movement and their absorption in different part of the country, remains to be seen. Many federal solutions, with their respective strengths and weaknesses, have been suggested in this regard, including various models of federalism attempted across Europe and Asia. But the model which would suit Myanmar best would be one which takes the local conditions into account. Could the Indian experience be the one that could be emulated by Myanmar?

Is India's foreign policy flawed considering the declining relationship with its neighbours?

India, like any other country, has to adapt to changing realities and refashion its foreign policy. India has adopted the policy of proactive engagement with all its neighbours since the 1990s. During the mid-1990s, the Gujral doctrine laid emphasis on non-reciprocal concessions to neighbours. Even if his doctrine excluded Pakistan for obvious reasons, India still sought to engage Pakistan despite its reluctance to address the issue of cross-border terrorism in a convincing manner. However, there is a perception that India's neighbourhood policy has not been successful.

A close scrutiny of facts would reveal otherwise. India has managed to develop better economic relations with Sri Lanka, Bangladesh, Bhutan and Nepal, despite concerns about some of the countries using China as a balancer. India realises its limitations in convincing its neighbours about the long-term adverse consequences of such engagement. Therefore, it has, through its quiet diplomacy, sought to ensure that any such relationship between any of its neighbours and an extra-regional power must not be aimed at India. On certain occasions, China has asked leaders in the neighbourhood not to build their relationship with it at the cost of India. While there is a growing anxiety in the Indian strategic community about expanding Chinese footprints in the immediate neighbourhood, the changing pattern of international relations warrant a pragmatic and careful pursuit of national interests through cautious diplomacy. It is also to be noted that India's improved relationship with East Asian and South East Asian countries— especially Singapore, Vietnam, Japan, South Korea (and to some extent with Taiwan)— has induced similar concerns in China about Indian intentions.

Given all this, it is not correct (or rather it is too early) to lament the failure of Indian diplomacy and foreign policy.

How external state and non state actors are creating problems in India's internal security?

India's internal security problems are a manifestation of internal weaknesses and external attempts at waging a proxy war. Inadequate socio-economic development, apathy towards the genuine grievances of the people, political brinkmanship amongst other reasons, has created internal contradictions, which have led to over five decades of internal strife. Similarly, a number of internal security challenges faced today are fuelled and controlled from Pakistan.

If we divide the internal security challenges into four main groups, to include, Jammu and Kashmir, Northeast India, Left Wing Extremism and Terrorism in the Hinterland, then the first and the last are a direct manifestation of Pakistani influence. It is part of Pakistan's state policy to bleed India through a thousand cuts, given its obvious disadvantages on the conventional war fighting front. The use of non-state actors is essentially the employment of a proxy element, which gives the state of Pakistan a degree of deniability. However, there is no doubt that none of the so called non-state actors like the *Lashkar-e-Toiba* (LeT) could have operated with impunity without the active funding, logistical and military support of Pakistan. The close linkages of the ISI and such groups are well documented as is their direct involvement in attacks like 26/11. These groups aim to not only create instability in states like J&K, they also have a larger aim of destabilising the country. This is done through sporadic terrorist strikes, which spreads terror and panic. This could also adversely affect the ability of the Indian state to pursue economic modernisation. The flooding of the country with counterfeits is also a way of weakening the economy.

Therefore, the non-state actors operating from Pakistan are the proxies of the state, functioning under a clear charter of state policy.

What are the ethical issues in international relations?

A basic issue in international politics is how to reconcile one's interests with values one professes. Most nations claim their commitment to universal values and try their best to conform to them. On many occasions, states find it difficult to conduct their behaviour as per their values. While most countries pledge their commitment to non-interference and peaceful conduct of foreign policy, in reality, their national interests are defined in realist terms that hurtles them in the path of power maximisation and pits them against their co-aspirants. In certain cases, some states are compelled to put aside their values in their quest for survival and dignity. India's pursuit of nuclear power in spite of its commitment to non-violence and peace could be cited as an example here. The balance-of-power politics around the world, born out of mutual distrust and sense of insecurity, make it often difficult for nations to strictly adhere to values they profess.

Recent examples can be India's resentment over the plight of Tamils in Sri Lanka; India's food security and the WTO opposition; CDR in climate talks; conditionalities in IMF/WB loans; Austerity programmes that are insisted upon by the donors; R2P etc.

What is India's approach towards the Indo-Pacific region?

The term "Indo-Pacific" has gained currency in recent times, largely due to statements regarding the United States' Rebalance to Asia strategy and an acknowledgement of linkage between the Indian and Pacific Oceans. However, as far as India is concerned, this linkage between the Indian Ocean and the Pacific traversing the waters of Southeast Asia is nothing new. In 2004, the Indian Maritime Doctrine alluded to "the shift in global maritime focus from the Atlantic-Pacific combine to the Pacific-Indian". Therefore, beyond the Indian Ocean, the Western Pacific has for some time now been identified as falling within the ambit of India's security interests.

The focus on maritime issues is evident from the increase in maritime exchanges led by the Indian Navy with countries, such as, Vietnam, Singapore and Japan. India's approach to the region is exemplified by its evolving Look East Policy, beginning with economic engagement with Southeast Asia and now expanding to strategic cooperation beyond Southeast Asia. The US' Rebalance to Asia no doubt highlights the importance of the "Indo-Pacific" concept and generates much speculation regarding the interaction between the US, its regional allies, India and China. It has been identified as a realm of great power rivalry by many. However, for India the region's importance is neither a new development nor is it dictated by a shift in the American focus.

Naxals have created a Red Corridor, a narrow but contiguous strip passing through Jharkhand, Chhattisgarh and Odisha. What are its security implications?

The term "red corridor" has been in usage for some time both within the media and security circles. In fact, there was a time when the Naxal influence was seen to be spreading from "Tirupati to Pashupati". This indicated its likely spread between the two famous temples in South India and Nepal. This was at the peak of the Maoist movement in Nepal. However, as events proved, this was an exaggeration of the nature of threat. Similarly, the very concept of a "red corridor" is also an over simplification of the real threat of the Maoist challenge. The critically affected areas of the Maoist influence represent approximately 30-32 districts. Most of this falls in the Dandakaranya which include areas of Chhattisgarh, Orissa, Maharashtra and Andhra Pradesh. This further includes the core area of Abhujmad .

The security implications of this are:

- The area straddles different states thereby giving the Maoists a distinct advantage.
- The Maoists understand that interstate boundaries are fissures which can be exploited given poor coordination between state police forces.
- The area is heavily forested and has a weak communication infrastructure which enables free movement of Maoists.
- Pressure in one state allows easy movement into another.
- There is little influence of routine administration in the area, which allows the Maoists to run their camps, collect taxes, extort money and conduct a virtual parallel government.
- Differences in policies of state governments to include surrenders, talks and policing strategy are exploited by the Maoists.

How can environmental issues, including climate change, have security implications?
The "environment" comprises all entities, natural or man made, external to oneself, and their interrelationship, which provide value, now or perhaps in the future, to humankind. Environmental concerns relate to their degradation through actions of humans. Hence, there is a need to revisit the classic and traditional definition of security in the contemporary world, i.e., the standard answers to questions, such as security for whom, security from what, and who provides security. For example, water/food shortages, droughts, climate change related extreme weather events, and pandemics, cannot be prevented by guns, aircrafts, ships and tanks. Added to it now is the human security dimension beyond just the security of a state.

A future with rising expectations and populations will strain the ecosystem and natural resources. The UN Secretary General's High level Panel on Global Sustainability in its report, *Resilient People, Resilient Planet: A Future Worth Choosing*, released in January 2012, stated that by 2030: "for a population of nine billion - the world may need 50 per cent more food, 45 per cent more energy and 30 per cent more water". It suggests that there is a need for a new political economy, there is a need to eradicate poverty, reduce inequality and promote inclusive growth, sustainable production and consumption, while combating climate change.

The fifth edition of the *UN Global Environmental Outlook (GEO-5)*, released prior to Rio+20 meeting in June 2012, "assessed 90 of the most important environmental goals and objectives and found that significant progress had only been made in four." The UN Under-Secretary General and UNEP Executive Director Achim Steiner, speaking on the occasion, stated that, "if current trends continue, if current patterns of production and consumption of natural resources prevail and cannot be reversed and 'decoupled', then governments will preside over unprecedented levels of damage and degradation".

Summaries of resource conflict theories are available in *SIPRI Yearbook 2011*. It is important to note that most of these issues are not securitised for then they may be more difficult to address as tools are mostly non-military. Yet, environmental issues are among the main security concerns today.

What is the importance of Myanmar for India?
Myanmar's importance lies in its geo-strategic location at the tri-junction of east, south-east and south Asia. It is the only south-east Asian country with which India has a land border which accounts for its significance in the development of India's northeast and in the context of India's Look East Policy. Added to this is the China factor, need for stability in the Indian Ocean, and its potential as a proximate source of energy. Besides, India's democratic credentials (for a country in transition), and historical and cultural ties (for a nation which reveres Buddhism), makes Myanmar an apt avenue for the exercise of India's soft power.