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- Content of Government Plan Programme
- Content of India & The World
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- Content of Gist of The Hindu Articles & Editorials
- Content of Science & Technology

Sample Study Material of Our Study Kit 24-177

- Sample Material of Gist of Economic Survey
- Sample Material of Gist of Yojana Magazine
- Sample Material of Government Plan Programme
- Sample Material India & The World
- Sample Material of Public Information Bureau
- Sample Material of The Hindu Articles & Editorials
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AADHAR

FINANCIAL INCLUSION AND ECONOMIC GROWTH

Q. In the Context of the Financial Inclusion, Examine the Initiatives of R.B.I.

Financial inclusion is the delivery of financial services, at affordable cost, to vast sections of disadvantaged/low-income groups excluded from the formal financial system. The Reserve Bank provides overall macropolicy direction and supports new products and services such as the No Frills Accounts, GCC and KCC, relaxed regulatory dispensation on branch authorisation & KYC norms, besides providing financial support through the two funds operationalized through NABARD namely Financial Inclusion Technology Fund and the Financial Inclusion Fund.

Opening of no-frills Accounts

Basic banking 'no-frills' account with 'nil' or very low minimum balances as well as charges that make such accounts accessible to vast sections of the population were introduced as per RBI directive in 2005. As on March 2011, 7.44 crore 'no frills accounts' have been opened by banks with outstanding balance of Rs.6565.68 crore.

Small Overdrafts in No-frills accounts

Banks have also been advised to provide small ODs in no frill accounts. Up to March 2011, banks had provided 41.77 lakh ODs amounting to Rs.198.73 crore.

General Credit Cards

Banks have been asked to consider introduction of a General Purpose Credit Card (GCC) facility up to Rs. 25,000/- at their rural and semi-urban branches. The credit facility is in the nature of revolving credit entitling the holder to withdraw up to the limit sanctioned. Based on assessment of household cash flows, the limits are sanctioned without insistence on security or purpose. Interest rate on the facility is completely deregulated. As on March 2011, banks had provided credit aggregating Rs.1287.66 crore in 8.83 lakh General Credit Card (GCC) accounts.

Relaxed Regulatory Dispensation on KYC Norms

Know Your Customer (KYC) requirements for opening bank accounts have been relaxed since August 2005 and simplified for accounts with balances not exceeding Rs. 50,000/- and aggregate credits in the accounts not exceeding Rs. one lakh a year. Introduction by an account holder who has been subjected to full KYC drill would suffice for opening such accounts or the bank can take any evidence as to the identity and address of the customer to the satisfaction of the bank.

Simplified branch Authorisation

To address the issue of uneven spread of Bank branches, since December 2009, domestic scheduled commercial banks are permitted to freely open branches in Tier 3 to Tier 6 centres with population of less than 50,000 under general permission, subject to reporting. In the North Eastern States and Sikkim, domestic scheduled commercial banks can now open branches in rural, semi urban and urban centres without the need to take permission from Reserve Bank in each case, subject to reporting.

Business Correspondent/ Business Facilitator Model

In January 2006, the Reserve Bank permitted banks to utilise the services of non-governmental

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organizations (NGOs), micro-finance institutions (other than Non-Banking Financial Companies) and other civil society organisations as intermediaries in providing financial and banking services through the use of business facilitator and business correspondent (BC) models. The BC model allows banks to do 'cash in - cash out' transactions at a location much closer to the rural population, thus addressing the last mile problem. From September 2010 banks have been permitted to engage the following individuals/entities as BC.

- (i) Retired bank employees, retired teachers, retired government employees and ex-servicemen, individual owners of kirana/ medical /Fair Price shops, individual Public Call Office (PCO) operators, agents of Small Savings schemes of Government of India/Insurance Companies, individuals who own Petrol Pumps, authorized functionaries of well run Self Help Groups (SHGs) which are linked to banks, any other individual including those operating Common Service Centres (CSCs);
- (ii) NGOs/ MFIs set up under Societies/ Trust Acts and Section 25 Companies ;
- (iii) Cooperative Societies registered under Mutually Aided Cooperative Societies Acts/ Cooperative Societies Acts of States/Multi State Cooperative Societies Act;
- (iv) Post Offices; and
- (v) Companies registered under the Indian Companies Act, 1956 with large and widespread retail outlets, excluding Non Banking Financial Companies (NBFCs). Banks have reported employing 40942 BCs which covered 78078 villages.

As on March 2011, 281.33 lakh smart cards have been issued by banks as part of their efforts to drive Information and Communication Technology (ICT) - based financial inclusion.

FIF and FITF

Based on the recommendations of the "Committee on Financial Inclusion" set up by the Government of India under Dr. C. Rangarajan, two Funds, the "Financial Inclusion Fund (FIF)"

for meeting the cost of developmental and promotional interventions for ensuring financial inclusion, and the "Financial Inclusion Technology Fund (FITF)", to meet the cost of technology adoption has been set up at NABARD with an overall corpus of Rs. 500 crore each.

Special Package for North Eastern States

To improve banking penetration in the North-East, the Reserve Bank asked the State Governments and banks to identify centres where there is a need for setting up either full-fledged branches or those offering forex facilities, handling government business or for meeting currency requirements. It has also offered to fund the capital and running costs for five years provided the State Government concerned is willing to make available the premises and put in place appropriate security arrangements. Meghalaya has been the first off the block, and eight centres have been allotted to three public sector banks, following a bidding process. Branches at two of the agreed centres in Meghalaya have been opened in January at Gamberge and in Nongshillong in February 2011 and the third such branch is expected to be opened shortly.

A lot of Stress is also being laid on spreading financial literacy and financial education.

Policy Interventions to Strengthen Financial Inclusion

CBS in RRBs: Given the strategic positioning of Regional Rural Banks (RRBs), the Reserve Bank has directed all RRBs to be CBS- compliant and by September 2011, this is expected to give a further fillip to financial Inclusion efforts given the penetrative outreach of the RRBs in the rural areas.

Scaling up IT: Banks had been urged in May 2007 to scale up IT initiatives for financial

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inclusion speedily while ensuring that solutions are highly secure, amenable to audit, and follow widely-accepted open standards to ensure eventual inter-operability among the different systems.

Mobile Banking: Mobile banking guidelines for banks were issued in October 2008. Since December 2009, banks have been permitted to offer this service to their customers subject to a daily cap of Rs 50,000/- per customer for both funds transfer and transactions involving purchase of goods/services.

Roadmap for Banking Services: In November 2009, banks were advised to draw up a roadmap to provide banking services through a banking outlet in every village with population over 2,000, extending financial inclusion to more than one lakh villages. Banking services may not necessarily be extended through a brick and mortar branch but provided through any of the ICT- based models, including through Business Correspondents (BCs). A total of 72,814 such unbanked villages were identified and as on March 2011, 24,710 banking outlets have been opened in various villages across the country.

Financial Inclusion Plan for Banks: All domestic commercial banks- public and private sector were advised in January 2010 to draw up specific Board approved Financial Inclusion Plans (FIP) by March 2010 incorporating some basic minimum qualitative features, and quantitative indicators with a view to rolling them out over the next three years. Such Board- approved FIPs are an integral part of their business plans and include criteria on financial inclusion in the performance evaluation of their field staff.

Can ICT and government macro policies support the expansion of financial access so as to build an inclusive Financial Sector?

Q. Throw some lights on the role of UID in Financial Inclusion.

The Unique Identification Authority proposes to furnish an identity card that will satisfy the Know Your Customer (KYC) norms of banks, thereby giving a fillip to financial inclusion. Aadhaar aims to provide a Unique Identification in the form of 12-digit unique number with some basic demographic and biometrics information to every Indian citizen. As the UID numbers would be acceptable for KYC compliance, UIDAI can act as a major facilitator for financial inclusion through opening of bank accounts. While UID would provide a strict check on customer's identity through biometric authentication, the costs and time required by the customer for opening accounts would be reduced substantially. Further, online authentication system will save the cost of issuing smart cards for the banking sector while increasing security. It would also help new generation service providers, such as BCs and other technology service providers (UIDAI, 2010). Banks can be registrars to the UID and through this collaborative process are moving to rapidly extend financial inclusion in the hitherto unserved and under-served geographies.

The issuance of a unique identification number that can be verified and authenticated online, in a cost effective manner and is robust enough to eliminate duplicate and fake identities is expected to provide a further fillip to financial inclusion efforts. NREGA payments and payments under other government benefit programmes as also all state benefit transfers are expected to be routed through UID cards to eliminate all leakages and malpractices and ensure that the right beneficiary receives timely and adequate recompense.

UID would also help in widening the scope of financial inclusion by bringing those employed in the unorganised segments into the ambit of formal finance. This would be possible by linking pension, provident fund and medical insurance plans provided to employees to their accounts through the UID. It would thus open up a whole new vista.

The scale and magnitude of this programme is unprecedented and requires effective coordination between different tiers of the Government and between regulators. It also seeks effective support from various public and private sector agencies. Public policy and

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technology changes, can now fundamentally alter banking. Banks need to mobilize resources from a wide deposit base and extend credit to the unbanked and unreached, hitherto not financed by banks. Amartya emphasizes that capability and freedom enhancing social policies generate stable civil societies. Thus financial inclusion which enables attainment of equity with growth is a global public good. Universal financial inclusion by 2012 is our policy commitment. We have promises to keep and miles to go before we sleep.

CENSUS 2011

LITERACY TRENDS IN THE CENTURY

Q. In the 15th Census of India what are the outcomes in literacy?

The pace of progress in literacy rates as revealed by decennial census is very slow in India. In the span of fifty years i.e from 1951 (18.33) to 2001 (64.83), there has been only marginal increase of 46.5 percent in literacy rate. Between 1951 to 2001, female literacy shows a mere 44.7 percent increase which is only five times for the whole point.

According to census 2011, out of 74.04 percent of literacy rate, the corresponding figures for male and female are 82.14 and 65.46 percent respectively which means four out of every five males and two out of every three females of the age seven and above are literate in the country. Though the target set by Planning Commission to reduce the gender gap by 10 percent in 2011-12 has not been achieved yet the reduction by 5 percent (4.99%) has been achieved which is a positive stride towards decreasing illiteracy.

Table: Literacy Rate Trend in India 1951-2011

Census Year	Persons	Decadal Increase	Males	Females	Gender gap
1951	18.33	27.16	8.86	18.30	
1961	28.3	9.97	40.40	15.35	25.05
1971	34.45	6.15	45.96	21.97	23.99
1981	43.57	9.12	56.38	29.76	26.62
1991	52.21	8.64	64.13	39.29	24.84
2001	64.83	12.62	75.26	53.67	21.59
2011	74.04	9.21	82.14	65.46	16.68

It is quite clear from the chart that the female literacy has increased and gender gap has decreased, so both are showing a positive development in 2011.

A significant milestone of Census 2011 is that the total number of illiterates has come down from 30.4 crores in 2001 to 27.2 crores showing a decline of 3.1 crore. Out of total 21.7 crores literates, female (11.0 crores) outnumber males (10.7 crores). Another striking feature is that, out of total decrease of 3.1 crore of illiterates, the females (1.7 crores) top male (1.4 crore) in the list. This trend of rising female literacy will have far reaching consequences which may lead to development of the society. The growth in number of male and female literates is represented by pie.

When we portray the literacy picture of India we find that the ordering of the states are almost same as it was in 2001 as Kerala still continues to top the list with 93.91 percent literacy rate whereas Bihar remains at the bottom of the ladder with 63.82 percent. Although Bihar has performed well in 2011 census compared to literacy rate in 2001 (47.00 %) still it lies in the lowest rank. States like Punjab (76.68%), Haryana (76.64%), Madhya Pradesh (70.63%), Andhra Pradesh (75.60%), Karnataka (67.66%)

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and Tamil Nadu (80.33%) and UTs like Andaman & Nicobar Islands (86.27%), Chandigarh (86.43 %) were downgraded from their previous rank whereas Tripura (87.75 %), Sikkim (82.20%), Manipur (79.85 %), Nagaland (80.11%) and UTs like Dadra & Nagar Haveli (77.65%), NCT of Delhi (86.34%), Puducherry (86.55%) and Lakshadweep (92.28%) have shown higher rankings than before.

India's literacy rate has shot up during the past decade and now, except Bihar, all other states lie above the national average. Even though Bihar has shown 17 percent increase in literacy rate but still it is below the national average. Out of 38 districts of Bihar, 21 districts have shown an improvement in female literacy rate, with naxal affected region Munger topping the list in female literacy with 63.53 per cent.

Empowered Action Group States Versus Non- Empowered Action Group States

Literacy rate in non-EAG states is higher than the literacy rate of EAG states but the change in percentage points of literacy rate between 2001 and 2011 is higher in EAG states compared to non-EAG states which shows that EAG states are also picking up with non-EAG states.

It can be noted that the gender gap in EAG states is declining faster than the non-EAG states. The decline in gender gap between 2001 and 2011 is 5.92 percent in EAG states whereas it is 4.38 in non-EAG states. It is really interesting to note that the percentage increase in number of literates is remarkable in EAG states between 2001 and 2011. Bihar (74.83 %), Jharkhand (59.24%) and Uttar Pradesh (56.40%) are in the highest position followed by Rajasthan (40.68%) and Chhattisgarh (39.61%) whereas Madhya Pradesh (38.73%), Uttarakhand (37.05%) and Orissa (36.68%) are still lagging behind.

In the First Five Year Plan, the program of Social Education, inclusive of literacy, was introduced as part of the Community Development Program in 1952. The National Policy on Education in 1968 not only endorsed the recommendations of the Education Commission but also reiterated the significance of universal literacy and developing adult and continuing education as matters of priority. The formal elementary education program was supplemented by a non-formal education system. A multi-pronged approach of universalisation of elementary education and adult literacy has been adopted for achieving total literacy.

Major thrust of these programs was on promotion of literacy among women, Scheduled Castes and Scheduled Tribes particularly in the rural areas. The National Adult Education Program (NAEP) was inaugurated on 2nd October, 1978. The eradication of illiteracy from a vast country like India beset by several social and economic hurdles is not an easy task. Realising this the National Literacy Mission was started on 5th May, 1988 to impart a new sense of urgency and seriousness to adult education. After the success of the areas specific, time bound, voluntary based campaign approach first in Kottayam city and then in Ernakulum district of Kerala in 1990, the National Literacy Mission had accepted the literacy campaigns as the dominant strategy for eradication of illiteracy. In 1989, the district-based Total Literacy Campaigns (TLC) emerged as a program strategy for the National Literacy Mission.

The 'Sarva Shiksha Abhiyan', a flagship programme of the Government of India was started for achievement of universalization of elementary education in a time bound manner, as later mandated by the 86th amendment to the Constitution of India making free and compulsory education to children of ages 6-14, as a fundamental right. Now Sarva Shiksha Abhiyan is doing rounds in all the districts in most of the states for which there is huge fund allocation under 9th and 10th Five year plans. In the 11th Five Year Plan, by 2011-12, Planning Commission has targeted to increase literacy rate by 85 percent and reduce the gender gap by 10 percent.

In spite of these massive efforts by the Government, we are still lagging behind the world literacy rate of 84 percent. Many states have shown rising trend but even then major group of states lie in the

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average rank i.e. just above national level of 64.8 percent and below 80 percent. Bihar is still lying below the national average. But the stride towards a completely literate India has become surer and more confident. It is also clear that the individual and the community need to play active roles as stakeholders in this process and their role needs to be recognized and built upon for realizing the objective of a fully literate India.

Do You Know?

RECENT STEPS TO CHECK GENERATION AND SPREAD OF BLACK MONEY What, broadly, has been the Government's Strategy for tackling illicit funds?

The Government has adopted five-fold strategy to tackle the menace of illicit funds. This consists of:

- i) Joining global crusade against 'black money';
- ii) Creating an appropriate legislative framework;
- iii) Setting up institutions for dealing with Illicit Funds;
- iv) Developing systems for implementation; and
- v) Imparting skills to the manpower for effective action.

What steps have been taken recently by the Central Government to check the generation and spread of black money ?

The government has recently taken several steps to check the generation and spread of black money. Some of these include:

Constitution of a Committee under the Chairmanship of Chairman, Central Board of Direct Taxes (CBDT) to examine ways to strengthen laws to curb the generation of black money in the country, its illegal transfer abroad and its recovery.

Commissioning fresh study through top national level institutions for estimation of unaccounted income/wealth both inside and outside the country.

Creation of new Directorate of Income Tax (Criminal Investigation)

The government will introduce a Bill in the monsoon session of Parliament that will enable confiscation of illegal money.

What is the constitution of the committee set up to examine ways to strengthen laws to curb the generation of black money ?

The Committee will be headed by Chairman, Central Board of Direct Taxes (CBDT). It includes Member (L&C), CBDT; Director, Enforcement Directorate (ED); Director General, Directorate of Revenue Intelligence (DRI); Director General (Currency); Joint Secretary (FT&TR), CBDT; Joint Secretary, MoL; Director, FIU-IND, all as its Members. The Commissioner of Income Tax (CIT)(Inv), CBDT would be its Member Secretary.

What are the functions of this committee?

The Committee will examine the existing legal and administrative framework to deal with the menace of generation of black money through illegal means including, inter alia,

- (a) Declaring wealth generated illegally as national asset;
- (b) Enacting/amending laws to confiscate and recover such assets; and

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(c) Providing for exemplary punishment against its perpetrators.

The Committee will also consult all the stakeholders and submit its report within a period of six months.

Which are the national level institutions conducting the study for estimation of unaccounted income ?

The study is being undertaken by the following national institutes:-

(a) National Institute of Public Finance and Policy (NIPFP); (b) National Institute of Financial Management (NIFM) ; and (c) National Council of Applied Economic Research (NCAER).

What is the purpose of the study ?

This study will bring out the nature of activities that encourage money laundering and its ramifications on national security. The study has already commenced in March, 2011 and is expected to be completed within a period of 18 months. The terms of reference of the study are as follows:-

- (i) To assess/survey unaccounted income and wealth both inside and outside the country. (ii) To profile the nature of activities engendering money laundering both inside and outside the country with its ramifications on national security.
- (iii) To identify important sectors of economy in which unaccounted money is generated and examine causes and conditions that result in generation of unaccounted money.
- (iv) To examine the methods employed in generation of unaccounted money and conversion of the same into accounted money.
- (v) To suggest ways and means for detection and prevention of unaccounted money and bringing the same into the mainstream of economy.
- (vi) To suggest methods to be employed for bringing to tax unaccounted money kept outside India.
- (vii) To estimate the quantum of non-payment of tax due to evasion by registered corporate bodies.

So far there are no reliable estimates of black money generated and held within and outside the country. The different estimates on quantum of black money range between USD 500 billion to USD 1,400 billion. The Government has therefore, commissioned these institutions to get an estimation and sense of the quantum of illicit fund generated and held within and outside the country.

What would be the function of the newly created Directorate of Income Tax (Criminal Investigation) ?

The DCI will perform functions in respect of criminal matters having any financial implication punishable as an offence under any direct tax law. The DCI will be required to perform the following functions:

- (a) To seek and collect information about persons and transactions suspected to be involved in criminal activities having cross-border, inter-state or international ramifications, that pose a threat to national security and are punishable under the direct tax laws;
- (b) To investigate the source and use of funds involved in such criminal activities;
- (c) To cause issuance of a show cause notice for offences committed under any direct tax law;
- (d) To file prosecution complaint in the competent court under any direct tax law relating to a criminal activity;
- (e) To hire the services of special prosecutors and other experts for pursuing a prosecution complaint filed in any court of competent jurisdiction;
- (f) To execute appropriate witness protection programmes for effective prosecution of criminal offences

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under the direct tax laws, i.e. to protect and rehabilitate witnesses who support the state in prosecution of such offences so as to insulate them from any harm to their person;

- (g) To coordinate with and extend necessary expert, technical and logistical support to any other intelligence or law enforcement agency in India investigating crimes having cross- border, interstate or international ramifications that pose a threat to national security;
- (h) To enter into agreements for sharing of information and other cooperation with any central or state agency in India;
- (i) To enter into agreements for sharing of information and other cooperation with such agencies of foreign states as may be permissible under any international agreement or treaty; and
- (j) Any other matter relating to the above

What will be the broad structure of DCI ?

The DCI will be headed by a Director General of Income Tax (Criminal Investigation), who will be an officer of the rank of Chief Commissioner of Income Tax, and will be located in New Delhi. The DCI will function under administrative control of the Member (Investigation) in the Central Board of Direct Taxes (CBDT) and will be a subordinate office of CBDT. The DCI shall have eight Directors of Income Tax (Criminal Investigation) located at Delhi, Chandigarh, Jaipur, Ahmedabad, Mumbai, Chennai, Kolkata and Lucknow.

SERVICES SECTOR

NUCLEARPOWERPROGRAMMEOFINDIA What is

India's 3-Phase Nuclear Power Programme?

In view of the limited fossil fuel availability with in the country, the relevance of Nuclear Power in meeting the short and long term needs of our energy was recognised right at the initial stage. From the very beginning, as a long term strategy, the Nuclear Power Programme formulated by Dr. Homi Bhabha embarked on the three stage nuclear power programme, linking the fuel cycle of Pressurised Heavy Water Reactor (PHWR) and Fast Breeder Reactor (FBR) for judicious utilisation of our limited reserves of Uranium and vast Thorium reserves. The emphasis of the programme was self-reliance and thorium utilisation as a long term objective.

The PHWR was chosen due to extensive research and development facilities covering diverse areas for supporting technology absorption.

What are the three stages of our Nuclear Power Programme?

Stage-I : envisages, construction of Natural Uranium, Heavy Water Moderated and Cooled Pressurised Heavy Water Reactors (PHWRs). Spent fuel from these reactors is reprocessed to obtain Plutonium.

Stage-II : envisages, construction of Fast Breeder Reactors (FBRs) fuelled by Plutonium produced in stage- I. These reactors would also breed U-233 from Thorium.

Stage-III : would comprise power reactors using U-233 / Thorium as fuel.

How is environment surrounding Nuclear Plant monitored?

This is done by the Environmental Survey Laboratory (ESL) set up well before starting the operation of the plant. The ESL collects data on forest, flora and fauna, marine products, food and air etc., to set up base level data on their quality prior to commencement of the operation of the plant. Samples are drawn and regularly analysed to ascertain the status on a continuous basis. The ESL functions independent of plant authorities and the data collected is checked by the regulatory authorities for control purposes

Can a Chernobyl type accident take place in Indian Nuclear Power Plants?

Nuclear power has a very good safety record for a period spanning more than three decades. The Three Mile Island (TMI) accident in March, 1979 and the Chernobyl accident in April, 1986, have raised apprehensions in the minds of the public all over the world. In the case of TMI, no radiation injury had occurred to any member of the public. In

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fact all the safety systems had worked as designed and no radioactivity was released to the atmosphere. At Chernobyl, thirty-one people died and they were all plant personnel. However, it must be recognised that the Chernobyl accident occurred due to the negligence of operators who violated the safety procedures. Besides, the Chernobyl reactor is a totally different type. It employed Graphite as a moderator. Graphite is a form of carbon and its combustible property contributed to explosion in the reactor core. Such a sequence of events in the Nuclear plants is not possible and explosion in the core is ruled out as it is cooled and moderated by heavy water. Adequate safety features in the plant are provided to ensure its safe operation. Paramount importance is given in setting up of nuclear power installations, to the safety of operating staff, public and environment. Safety experts and regulatory personnel are associated at all commissioning and operation of nuclear power plants. Thus Chernobyl type accident is ruled out in Indian Nuclear Power Plants.

NON GOVERNMENTAL ORGANIZATIONS

RESPONSE TO CHILD LABOUR IN INDIA

Q. Child Labour in India

In India, there are several temples of 'Bal Krishna', 'Bal Hanuman' i.e. child God. According to Hindu Philosophy, a child is considered to be the form of God. India is better known to be the country of Dhruv, Prahlad, Lav-kush and Abhimanyu, the children possessing multifaceted talents, wisdom, intelligence, and exuberance. In spite of India's rich heritage and culture we have more than 20 million child labourers. They constitute 36 percent of Indian population. More than 14 percent of the total child population between 5-14 years is involved in child labour. In 2001 the ILO estimated that 11.6 percent of children aged 10-14 in India are part of child labour. More than 20 million children are out of schooling system. One out of every 6 children is a victim of some sort of social evil. Child labour is a violation of human rights and yet is considered to be a 'necessary evil' in a developing country like India. They are working in hazardous and unhygienic Conditions in manufacturing industries. Child labour continues to be a serious problem which hampers the health and growth of child i.e. the growth of future India.

- i. Hazardous form of child labour: It is the worst form of child labour where children carry out heavy work in utmost unhygienic, uncongenial working conditions. It has serious impact on physical and mental development of children. The work includes working in mines; cracker making industry, heavy metal industry, glass industry etc.
- ii. Non hazardous form of child labour : It comprises of light natured work which does not affect the children. It is that form of work in which children help their parents in light form of work such as working in agriculture sector, working in food industry, restaurants, dabhas, roadside stalls etc.
- iii. Debt bondage : It is a phenomenon in which money lenders would enslave people for nonpayment of exorbitant debts. Usually, these people were charged heavy rates of interest on debts and they were so poor that they did not have much for collateral security. Therefore, they were forced to sell themselves and their family members for paying off their debts. Most often these people used to keep their children as collateral securities. These children were forced to work relentlessly for more than 12 hours a day for peanuts.
- iv. Child trafficking : Trafficking in children means the recruitment, transportation, transfer, harbouring or receipt of a child for the purpose of exploitation. It is the extended form of bonded labour. The victims of trafficking are forced to work in various illegal activities such as beggary, robbery, prostitution etc. It is also known as forced form of labour.
- v. Child abuse : Child abuse or maltreatment is all forms of physical, emotional, ill-treatment, sexual abuse, neglect, negligent treatment or commercial or other exploitation, resulting in actual or

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potential harm to the child's health, survival, development or dignity in the context of a relationship of responsibility, trust or power. India is the home of more than 19 percent of the child abused children in the world. The victims of child abuse face lot of physical and mental deformities. Usually there are four types of maltreatment -physical abuse, sexual abuse, emotional abuse, psychological abuse.

Table: Percentage of Child Labour In Developing and Developed Countries

Sl no	Country	Percentage of Child Labor
1.	Africa	26.3
2.	Latin America	9.8
3.	India	14.4
4.	China	11.6
5.	Pakistan	17.7
6.	Turkey	24
7.	Kenya	41.3
8.	Brazil	16.1

Following are some of the causes of child labour:

Extreme poverty is the chief cause of child labour. The children either supplement their parents income or are the only wage earners in the family.

Child labour is deliberately created by vested interest to get cheap labour.

Low level of parental education is also an important factor in determining the incidence of child labour.

A majority of parents prefer to send their children to work rather than to school at the school-going age, primarily on account of their need for a supplementary income. Demographic factors like size of the family also compels children to participate in the labour force.

Social forces such as low-birth seal the fate of many child labourers.

Child Labour Act 1986: It seeks to ban employment of children working in certain hazardous occupations; the hazardous occupations are identified and reviewed by the expert committee from time to time. The Act also regulates the work of children in certain other industries. However there is no specific or all encompassing prohibition on the work for children. There are sectors such as domestic service, agriculture, urban and rural informal sectors where children work in large numbers.

Bonded Labour System (Abolition) Act, 1976: The Bonded Labour System (Abolition) Act purports to abolish all debt agreements and obligations arising out of India's longstanding bonded labour system. It frees all bonded labourers, cancels any outstanding debts against them, prohibits the creation of new bondage agreements, and orders the economic rehabilitation of freed bonded laborers by the state.

The Supreme Court directions in 1996: It gave directions for immediate identification of children in hazardous occupations and their subsequent rehabilitation, including providing appropriate education to the released children.

The National Child Labour Policy 1987: The National Child Labour Policy-1987 addresses the complex issue of child through the legislative action plan by implementing Child labour-Act 1986 and project-based action plan in areas of high concentration of child labour. Under the project-based action plan the released children from the hazardous occupations are provided educational services in specially designed Non-formal education (NFE) centers under the centrally sponsored National Child Labour Project (NCLP). The NCLP is currently in operation in 100 districts in 13 states, in the areas of high concentration of child labour throughout the country. Till September 2004-05, 4077 special NFE schools are in operation throughout the country, with a total enrolment of 203,850 children.

Initiatives Through Five-Year Plan and Others: Allocation under NCLP through five- year

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plan and yearly budget allocation under all schemes on child labour have been also made for eradication of child labour.

Q. Role of NGO to tackle Child Labour

NGOs should concentrate more on the proper rehabilitation of the released child labourers. Their focus of the work should be on children working in hazardous industries and occupations, bonded child labourers, street children, and those in the informal sectors, especially the dhaba and domestic workers.

The initiatives of NGOs should focus on the families of the child labourers as well. Among other things, the NGOs' efforts should be directed towards the use of adults productively since it is because of adult unemployment that children have to work.

Education should be imparted on a much larger scale. Instead of providing an alternative system of education and creating new schools for the working children, NGOs should pressurise the government to improve and raise the standard of education of the existing government schools.

The NGOs should take care of the nutritional needs of the poor children since they are undernourished. Therefore, providing at least one full meal to the children per day should be part of their programme for children.

The vocational training imparted to the child labourers or potential child labourers should be compatible (in terms of remuneration), to the existing income-generating activities already being done by these children.

The NGOs should provide for in their budget proposal the cost of monitoring of the projects. This is important since inadequate monitoring and follow-up of the programmes and projects undertaken, leads to creating only a temporary effect.

NGOs have an important role to play in the protection and eradication of child labour. But, they will have to adopt a different approach if they really want eradication of child labour. Firstly, they will have to interact with each other to put up a collective demand on the basis of their common approach. Secondly, they will have to lobby to pressurise the government to accept the time-bound goal of banning child labour from all activities and to ratify the ILO Convention No. 138 for the purpose, which establishes that no child can be employed in any economic sector below the age designated for the completion of compulsory education and not less than 15 years. Thirdly, they will have to be vigilant about the enforcement of government regulations regarding child labour. And fourthly, they will have to join hands with other outside organisations to create a pressure group at the international level. They will have to shake away their apathy and take up the challenge 'boldly'. Lastly NGOs must make the government realize that children are the only hope for a developing country like India.

NORTH EAST FOCUS: ASSAM

LOOK EAST POLICY: A READING HYPE OR A REALIZABLE HOPE?

Q. India's look east policy: Hype or A Realizable Hope.

The 'Look East' policy (LEP), initiated by the Government of India in the early 1990s, generated considerable optimism in India's Northeast region. Beset with partition-inflicted geographical isolation and persistent economic retardation for decades, the region suddenly saw in the policy an opening of opportunities for breaking free from the shackles of isolation and progressing by linking with the prosperous Southeast Asian economies. These expectations have

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however remained mostly unrealised for nearly two decades now. The present paper looks into the contents of the policy and then takes up the question whether the policy can deliver the expectations of the region from it.

Dated back to 1992, the 'Look East' policy has in fact never been formally stated. In the words of Pudaite, a former Indian diplomat hailing from Mizoram who was involved in shaping the policy, it broadly refers to "the ongoing process of a series of initiatives for broadening and deepening our economic and other cooperation with the countries in the dynamic growth regions of Southeast and Northeast Asia" (Pudaite 2007: 8). Coming at the heel of India embarking upon a market-oriented economic reform programme, the conscious initiative for "deepening and broadening" of ties with the East and Southeast Asian countries was understandably inspired by success of these countries from their market-based outward oriented development approach. In practice, manifestation of the policy can be seen in the form of India's expanding trade relation with countries of East and Southeast Asia and attempts to forge closer economic ties with these countries by involving in multi-country regional formations.

Following the adoption of the Look East Policy, trade relationship of India with the eastern countries expanded rapidly. Apart from a dip in the volume of trade during the East Asian economic crisis in the late 1990s, India's trade with the Nations (ASEAN) region has had a rising trend (Sen et al 2004). The composition of the Indo-ASEAN trade has also undergone change from predominance of primary products to manufactures (Sarma and Mehta, 2002). In the last decade, India's trade ties with China have also had an upward trend.

In a bid to further enhance economic ties with the eastern neighbours, India has got engaged with these countries in several regional formations such as BIMSTEC, Makon Ganga Cooperation (MGC) and Kunming Initiatives. Efforts are now on for formation of India-ASEAN Free Trade Area.

Initially conceived as a group for economic cooperation among Bangladesh, India, Myanmar, Sri Lanka and Thailand, BIMSTEC was expanded in 2004 to include Nepal and Bhutan and renamed as Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation. The group has already adopted a Framework Agreement for a BIMSTEC Free Trade Area, which is scheduled to be established over a period of nine years starting from 2006. The Mekong- Ganga Cooperation (MGC) was launched in Vientiane, Laos on November 10, 2000 when officials from India, Myanmar, Thailand, Cambodia, Laos and Vietnam issued a 'Vientiane Declaration' on the framework for cooperation.

As of now the goals of this project have been kept limited mainly to promotion of tourism, improvement of surface and air connectivity, development of IT network, fostering closer social ties through cultural exchanges and university level networking among the member countries. Adopted in a conclave of non-official think tank groups and businessmen in 1999 in Kunming, the capital of Yunnan Province of China, the Kunming Initiatives aim to explore ways of sub- regional economic and cultural cooperation encompassing Bangladesh, China (especially its South-Western part), India (primarily the Northeast region) and Myanmar (BCIM). The main thrust of the forum has been to exhort government concerned to improve communication between South-western region of China and the North-eastern region of India by developing appropriate road, rail, waterways and air links. More specifically, a call was made to revive the ancient silk route between Assam and Yunnan – the target being on opening the Stilwell Road. The pace of concretization of the different formations has however been uneven and substantial progress has been made so far only in case of BIMSTEC.

The Look East Policy generated considerable optimism in the Northeast region of the country which had persistently lagged behind the rest of India in pace of economic development ever since the time of independence (Bezbaruah 2010). Partition of the country in 1947 snapped most of its connectivity with the rest of India and the world. Resultant geographical isolation and the consequent hike in the cost of movement of man and material to and from the region suddenly halted the industrialization process taking place in the region during the colonial period. The prospect of opening up eastward and

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connecting to the prosperous East and Southeast Asian economies aroused expectation of being freed from this shackle of geographical isolation. But as the initial euphoria settled down, several doubts started surfacing, questioning the prospects of such expectations turning into reality.

Doubts have been raised about Northeast India being able to produce significant exportable surplus to meaningfully take part in the trade. Such doubts are however not necessarily warranted. For, opening up of trading may unleash new dynamics leading to emergence of new opportunities. Assam, for instance, can look to export its excess refinery products in the nearby markets than marketing the same in the distant parts of India which will involve higher transport cost. Indian manufactured products originating outside the region are now informally exported across Indo-Myanmar border. Once trade in these items across this border is legalised, the Indian manufacturers will be able to explore and exploit markets in the east more extensively. The way the Chinese have established production centres near the border and even inside Myanmar to penetrate into cross border markets, the Indian manufacturers can set up production base in the Northeast for catering to the markets in Myanmar and beyond. There are now added economic incentives for doing so as an attractive package of fiscal and other concessions has been provided for new industrial units in the region under the North East Industrial and Investment Promotion Policy 2007 of the Government of India.

Even if the region does not produce exportable goods in any significant scale, the region will still be able to export variety of services, such as transportation, hospitality, financial services, healthcare and education. The ripple effect of trade in services will benefit the goods producing sectors of agriculture and manufacturing at the secondary level.

The critical question in this context is whether the enhanced trade between India and her eastern neighbours will flow through the Northeast India-Myanmar corridor. To the extent that the merchandise needs to be transported between mainland India and Southeast Asia, the continental route through Northeast India and Myanmar has a competing alternative in the form of the maritime route across the Bay of Bengal. Summing up the issue Baruah (2004: p 23) writes, "Northeast India thinks Southeast Asian countries as their neighbours. But in the maritime sense the east coast of India – Orissa, Andhra or Tamil Nadu – is also next-door to Southeast Asia. Indeed, historically mainland India's ties with Southeast Asia is more maritime-oriented than continental. As it has been in the past, even in modern times it is cheaper and less troublesome for India to trade with Southeast Asia by sea than by land. The land route not only goes through a difficult physical terrain, there is a perception that the route is full of danger. It may be tempting, therefore, for India to have relationship with Southeast Asia that is primarily maritime rather than continentally oriented."

It is true that little of the expanding India-ASEAN or for that matter the China-India trade, has moved through the Northeast India-Myanmar continental route. With the existing state of connectivity, the land routes today are perhaps not conducive for India to trade with countries beyond Myanmar. But once the ongoing surface connectivity initiatives across the Northeast India-Myanmar region are implemented, the cost calculations will turn in favour of the continental route. The Asian Railway and Asian Highway projects initiated and pursued by UN-ESCAP are to connect West and South Asia with East and Southeast Asia through Northeast India, Myanmar and Bangladesh. Further, there are several other ongoing projects for improving surface connectivity across the Northeast India-Myanmar region. These include the proposals to extend Moreh-Kalewa road to Kalemmyo and Mandalay in the heart of Myanmar, to connect Champhai in Mizoram with Tiddim and Falam in Myanmar and to connect the Northeast region to the port Sittwe on the Bay of Bengal by developing Kaladyne River in Mizoram and Myanmar as a navigable waterway. As these projects get completed, the connectivity scenario will change markedly and the Northeast India-Myanmar can then turn into an active trade corridor between South Asia and East Asia.

More than the connectivity problem, formidable blocks in Northeast India's prospect of opening

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up eastward remain in the form of the state of affairs in Myanmar and the India-China unease relating to the region.

Between Northeast India and the prosperous East and Southeast Asia stands Myanmar. Not only has the economy of the country remained backward but the economic system there is also anachronistic. Its currency at the official exchange rate is overvalued about 150 times. Modern banking system is virtually non-existent. Though Indo-Myanmar Border Trade agreement has been there since 1995, the official border trade has long been reduced to a trickle. Informal border trade (an honourable sounding phrase for open smuggling) has stagnated following abolition of quantitative trade restrictions by India under the WTO agreement (Bezbaruah 2007). Unless the economic system in Myanmar is reformed, or at least an arrangement is worked out to trade with and through Myanmar at the unofficial exchange rate, it is difficult to foresee the Northeast Indian economy finding a link-up with the prosperous economies beyond Myanmar. Fortunately, there have been some hints of positive development in Myanmar in the recent months.

Despite the upswing in the volume of trade between India and China, little of this traffic has crossed over the border in India's northeast region. Considerable mistrust persists between the two countries regarding exchange and communication across India's north-eastern border. China's periodic claim over Arunachal Pradesh has not made matters easier in this regard.

To enable Northeast India to profit from the 'Look East' policy, it will be necessary for the Government of India to engage the immediate eastern neighbours of Myanmar and China for greater cross country cooperation and closer economic ties. Indeed such a process is an imperative to address the trans-border problems of drug-trafficking, arms smuggling and movement of insurgents that afflict the region. Government of India's policy for addressing the problems of the Northeast region includes components like placing the states in the region in special category for fiscal devolution, earmarking fund in a non-lapsable pool to be invested for clearing backlogs in infrastructure and basic services, and incentive package for inducing industrial investment. It is now becoming increasingly clear that the policy requires another dimension that will be in the purview of the Ministry of External Affairs. Keeping the door shut or taking up only half hearted approach to countries surrounding the region in the name of India's security concerns will amount to missing out on an opportunity for the region. Time is ripe for taking up more intensive diplomatic initiatives and decisive steps forward to give the 'Look East' policy a substantive content from the Northeast perspective.

Do You Know?

SAARC

What is South Asian Association for Regional Cooperation (SAARC) ?

The SAARC is an organisation of South Asian nations. In the late 1970's, President Zia-ur Rahman, proposed the creation of trade bloc consisting of South Asian countries. The Bangladeshi proposal was accepted by India, Pakistan and Sri Lanka during a meeting held in Colombo in 1981. In August 1983, the leaders adopted the Declaration on South Asian Regional Cooperation during a summit which was held in New Delhi.

The heads of Seven South Asian Countries of SAARC i.e. Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan and Sri Lanka signed the charter to establish the South Asian Association for Regional Cooperation (SAARC) on 8th December, 1985. Afghanistan joined SAARC as a Member at the Fourteenth Delhi SAARC Summit in April 2007.

What are the main objectives of SAARC ?

To promote the welfare of the peoples of SOUTH ASIA and to improve their quality of life

To accelerate economic growth, social progress and cultural development in the region and to provide all individuals the opportunity to live in dignity and to realise their full potentials

To promote and strengthen collective self-reliance among the countries of SOUTH ASIA To

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contribute to mutual trust, understanding and appreciation of one another's problems

To promote active collaboration and mutual assistance in the economic, social, cultural, technical and scientific fields

To strengthen cooperation with other developing countries

To strengthen cooperation among themselves in international forums on matters of common interests; and

To cooperate with international and regional organisations with similar aims and purposes.

What are the Principles of SAARC?

Cooperation within the framework of the ASSOCIATION shall be based on respect for the principles of sovereign equality, territorial integrity, political independence, non-interference in the internal affairs of other States and mutual benefit.

Such cooperation shall not be a substitute for bilateral and multilateral cooperation but shall complement them.

Such cooperation shall not be inconsistent with bilateral and multilateral obligations.

What is SAFTA (South Asian Free Trade Area)?

SAFTA was envisaged primarily as the first step towards the transition to a South Asian Free Trade Area (SAFTA) leading subsequently towards a Customs Union, Common Market and Economic Union. In 1995, the Sixteenth session of the Council of Ministers (New Delhi, 18-19 December 1995) agreed on the need to strive for the realization of SAFTA and to this end an Inter-Governmental Expert Group (IGEG) was set up in 1996 to identify the necessary steps for progressing to a free trade area. The Tenth SAARC Summit (Colombo, 29-31 July 1998) decided to set up a Committee of Experts (COE) to draft a comprehensive treaty framework for creating a free trade area within the region, taking into consideration the asymmetries in development within the region and bearing in mind the need to fix realistic and achievable targets.

The SAFTA Agreement was signed on 6 January 2004 during Twelfth SAARC Summit held in Islamabad, Pakistan. The Agreement entered into force on 1 January 2006, and the Trade Liberalization Programme commenced from 1st July 2006. Following the Agreement coming into force the SAFTA Ministerial Council (SMC) has been established comprising the Commerce Ministers of the Member States. To assist the SMC, a SAFTA Committee of Experts (SCOE) has been formed. SCOE is expected to submit its report to SMC every six months. The SAFTA Agreement states that the "the SMC shall meet at least once every year or more often as and when considered necessary by the Contracting States. Each Contracting State shall chair the SMC for a period of one year on rotational basis in alphabetical order."

Where is the Secretariat situated and how it functions?

The SAARC Secretariat is based in Kathmandu, Nepal. It coordinates and monitors implementation of activities, prepares for and services meetings, and serves as a channel of communication between the Association and its Member States as well as other regional organisations.

The Secretariat is headed by the Secretary General, who is appointed by the Council of Ministers from Member States in alphabetical order for a three year term. The SAARC Secretariat and Member States observe 8 December as the SAARC Charter Day.

What are the Working groups of SAARC?

Working Groups (WG) formulate and over see programmes and activities within the framework of SAARC to strengthen and promote regional cooperation in their respective areas. The WGs coordinate, monitor and evaluate programmes in this regard. In recommending target-bound programmes and activities, they would also propose mechanisms and sources of finance to implement them. Further, they would also carry out the directives emanating from SAARC higher bodies. Following WGs meet regularly to provide inputs on their respective areas of co-operation:

Working Group on Biotechnology

Working Group on Energy

Working Group on Information and Communication Technology (ICT) Working

Group on Tourism

What are the Regional Centres of SAARC?

The SAARC Secretariat is supported by following Regional Centres established in Member States to promote regional

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cooperation. These Centres are managed by Governing Boards comprising representatives from all the Member States, SAARC Secretary-General and the Ministry of Foreign/External Affairs of the Host Government. The Director of the Centre acts as Member Secretary to the Governing Board which reports to the Programming Committee. The regional centres are;

SAARC Agricultural Centre (SAC), Dhaka
SAARC Meteorological Research Centre (SMRC), Dhaka
SAARC Tuberculosis Centre (STC), Kathmandu
SAARC Documentation Centre (SDC), New Delhi
SAARC Human Resources Development Centre (SHRDC), Islamabad
SAARC Coastal Zone Management Centre (SCZMC), Maldives
SAARC Information Centre (SIC), Nepal
SAARC Energy Centre (SEC), Pakistan
SAARC Disaster Management Centre (SDMC), India
SAARC Forestry Centre (SFC), Bhutan
SAARC Cultural Centre (SCC), Sri Lanka

FOREIGN TRADE

INDIA AND WORLD TRADE ORGANISATION

Q. Write a short notes on WTO.

The World Trade Organisation(WTO) signifies the reality of the globalization of the economy. In an inter-play of trade and commerce in a global village WTO may be said to be the referee. Economies, small, medium and big, all have a role to play, each important in its own way, in shaping the global economy for the prosperity of all nations. It was created for the liberalization of international trade. It came into existence on January 1, 1995 as the successor to General Agreement on Trade and Tariffs (GATT). WTO deals with the rules of trade between nations at a global level. It is responsible for implementing new trade agreements. All the member countries have to follow the trade agreement as decided by the WTO.

Benefits Of WTO

It helps promote peace and prosperity across the globe.

Disputes are settled amicably.

Rules bring about greater discipline in trade negotiations, thereby reducing inequalities to a large extent.

Free trade reduces the cost of living and increases household income.

Companies have greater access to markets and consumers have wider range of products to choose from.

Good governance accelerates economic growth

Q. In the context of Indo-WTO relation, examine the importance of the Eight Ministerial conference of WTO, 2011.

India is one of the founding members of WTO along with more than 130 other countries. Economists believe that India's participation in an increasingly rule based system in governance of International trade would eventually lead to better prosperity for the nation. Various trade disputes of India with other nations have been settled through WTO. India has also played an important part in the effective formulation of major trade policies. By being a member of WTO several countries are now trading with India, thus giving a boost to production, employment, standard of living and an opportunity to maximize the use of the world resources. Only in mid December last year the Eighth Ministerial

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Conference of World Trade Organization was held in Geneva, Switzerland. India was represented at the meeting by the Union Minister for Commerce, Industry & Textiles Mr Anand Sharma. The conference deliberated on key trade issues on the following themes: "Importance of the Multilateral Trading System and the WTO", "Trade and Development" and "Doha Development Agenda". Prior to the WTO meet, Ministers of BRICS met to discuss issues concerning trade and development among themselves. Significantly, the BRICS group (Brazil, India, China and South Africa) is increasingly being recognized as being pivotal in furthering progress in the stalled Doha Round. At the WTO Conference, India emphasised the key role of the world trade body in keeping protectionist forces at bay. It also told the conference that international trade will play an even more critical role in stimulating economic growth and development during the current global slowdown.

FOREIGN TRADE POLICY

Q. India's Foreign Trade Policy at a Glance.

Foreign Trade plays an important role in the economy of the country and creates approximately 14 million jobs directly or indirectly. The short term objective of the policy is to arrest and reverse the declining trend of exports and to provide additional support especially to those sectors which have been hit badly by recession in the developed world. Other policy measures include fiscal incentives, institutional changes, Procedural rationalization, and enhanced market access across the world and diversification of export markets. The present foreign trade policy is for the period of five years i.e from 2009 to 2014.

Objectives of The Policy

To achieve an annual growth of 15% for the first 2 years till March 2011 with an annual export target of US\$ 200 billion.

To achieve an annual growth of 25% during the remaining period of the policy 3 Years. By 2014 to double India's export of goods and services from the present level of 1.64%

Importer-Exporter Code Number

To carry out export and import business the person should have an IEC Number for which he has to apply to the Regional authorities of DGFT. The Foreign Trade Policy has various schemes for promotion of exports and developing new markets. Some of the policies are enumerated below:

Reward/incentive Schemes

1. Focus Product Scheme

The Objective of the scheme is to incentivize export of such products which have high export intensity / employment potential, so as to offset infrastructure inefficiencies and other associated costs involved in marketing of these products. The Export product notified in appendix 37 D of Hand Book of Procedures shall be entitled for Duty Credit scrip equivalent to 2 % of FOB value of exports (in free foreign exchange). However, Special Focus Product(s) /sector(s), covered under Table 2 and Table 5 of Appendix 37D, (Toys & sports goods, hand made carpets & handicraft products) shall be granted Duty Credit Scrip equivalent to 5 % of FOB value of exports (in free foreign exchange.)

2. Focus Market Scheme

The objective of the scheme is to offset high freight cost and other externalities to select international markets with a view to enhance India's export competitiveness in these Countries. This policy focuses on diversification of Indian exports to other markets, specially those located in Latin America, Africa, parts of Asia and Oceania. Exporters of all products to notified countries . Duty credit scrip and items

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imported against it would be freely transferable. Duty Credit scrip may be used for import of inputs or goods, provided same is freely importable and /or restricted under ITC(HS)

3. Market Linked Focus Products Scrip (MLFPS)

Export of Products/Sectors of high export intensity/ employment potential (which are not covered under present FPS List) would be incentivized at 2 % of FOB value of exports (in free foreign exchange) under FPS when exported to the Linked Markets (countries).

4. Vishesh krishi and gram udyog yojana

The Scheme is to promote exports of

- (i) Agricultural Produce and their value added products; (ii) Minor Forest Produce and their value added variants; (iii) Gram Udyog Products;
- (iv) Forest Based Products

Exporters, of products notified in Appendix 37A of HBPv1, shall be entitled for Duty Credit Scrip equivalent to 5 % of FOB value of exports (in free foreign exchange).

5. Export and Trading Houses

Merchant as well as Manufacturer Exporters, Service Providers, Export Oriented Units (EOUs) and Units Status located in Special Economic Zones (SEZs), Agri Export Zones (AEZs), Electronic Hardware Technology Parks (EHTPs), Software Technology Parks (STPs) and Bio- Technology Parks (BTPs) shall be eligible for status. Exporters in Small Scale Industry (SSI) / Tiny Sector / Cottage Sector, Units registered with KVICs shall be given double weight age

Applicant shall be categorized depending on his total FOB (FOR -for deemed exports) export performance during current plus previous three years (taken together) upon exceeding limit below. For Export House (EH) Status, export performance is necessary in at least two out of four years (i.e., current plus previous three years).

Status Category	Export performance FOB/FOE (Rupees in Crores)
Export House	20
Star Export House (SEH)	100
Trading House (TH)	500
Star Trading House (STH)	2500
Premier Trading House (PTH)	7500

Benefits for Status Holders

- (i) Authorization and Customs Clearances for both imports and exports on self-declaration basis;
- (ii) Fixation of Input-Output norms on priority within 60 days;
- (iii) Exemption from compulsory negotiation of documents through banks. Remittance / Receipts, however, would be received through banking channels;
- (iv) 100% retention of foreign exchange in EEFC account;
- (v) Exemption from furnishing of BG in Schemes under FTP;
- (vi) SEHs and above shall be permitted to establish Export Warehouses, as per DoR guidelines. (vii) For status holders, a decision on conferring of ACP Status shall be communicated by Customs within 30 days from receipt of application with Customs.
- (viii) As an option, for Premier Trading House (PTH), the average level of exports under EPCG Scheme shall be the arithmetic mean of export performance in last 5 years, instead of 3 years.

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6. Status holders incentive scrip

With an objective to promote investment in up gradation of technology of some specified sectors, Status Holders shall be entitled to incentive scrip @1% of FOB value of exports made during 2009- 10 and during 2010-11, of these specified sectors, in the form of duty credit. This shall be over and above any duty credit scrip claimed/availed. Status Holders availing Technology Up gradation Fund Scheme (TUFS) benefits (under Ministry of Textiles) during a particular year shall not be eligible for Status Holders Incentive Scrip for exports of that year. The Status Holders Incentive Scrip shall be with Actual User Condition and shall be used for imports of capital goods (as defined in FTP) relating to the sectors specified in Para below. The Status Holders of the following Sectors shall be eligible for this Status Holders Incentive Scrip:

1. Leather Sector (excluding finished leather);
 2. Textiles and Jute Sector;
 3. Handicrafts;
 4. Engineering Sector (excluding Iron & Steel, Nonferrous Metals in primary or intermediate forms) Automobiles & two wheelers, nuclear reactors & parts and Ships, Boats and Floating Structures;
 5. Plastics; and
6. Basic chemicals (excluding pharma products 7. Served from India Scheme

The Scheme is to accelerate growth in export of services so as to create a powerful and unique 'Served from India' brand, instantly recognized and respected world over.

Services include all 161 tradable services covered under General Agreement on Trade in Services (GATS) where payment for such services is received in free foreign exchange.

Indian Service Providers, of services listed in Appendix 10 of HBPv1, who have free foreign exchange earning of at least Rs. 10 Lakhs in current financial year / current financial year shall qualify for Duty Credit Scrip.

All Service Providers shall be entitled to Duty Credit Scrip equivalent to 10% of free foreign exchange earned during current financial year.

Duty Credit scrip may be used for import of any capital goods including spares, office equipment and professional equipment, office furniture and consumables; that are otherwise freely importable and / or restricted under ITC (HS). Imports shall relate to any service sector business of applicant.

Technological Upgradation & Modernisation

1. Zero duty EPCG scheme allows import of capital goods for pre production, production and post production (including CKD/SKD thereof as well as computer software systems) at zero Customs duty, subject to an export obligation equivalent to 6 times of duty saved on capital goods imported under EPCG scheme, to be fulfilled in 6 years reckoned from Authorization issue-date. The scheme will be available for exporters of engineering & electronic products, basic chemicals & pharmaceuticals, apparels & textiles, plastics, handicrafts, chemicals & allied products and leather & leather products.
2. Concessional 3 % duty EPCG scheme allows import of capital goods for pre production, production and post production (including CKD/SKD thereof as well as computer software systems) at 3 % Customs duty, subject to an export obligation equivalent to 8 times of duty saved on capital goods imported under EPCG scheme, to be fulfilled in 8 years reckoned from Authorization issue date.
3. For SSI units, import of capital goods at 3 % Customs duty shall be allowed, subject to fulfillment of

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export obligation equivalent to 6 times of duty saved on capital goods, in 8 years from Authorization issue-date, provided the landed cif value of such imported capital goods under the scheme does not exceed Rs. 50 lakhs and total investment in plant and machinery after such imports does not exceed SSI limit.

Duty Exemption and Temission Schemes

Duty exemption schemes enable duty free import of inputs required for export production. Duty Exemption Schemes consist of (a) Advance Authorisation scheme and (b) Duty Free Import Authorisation (DFIA) scheme. A Duty Remission Scheme enables post export replenishment / remission of duty on inputs used in export product. Duty Remission Schemes consist of Duty Drawback (DBK) Scheme.

1. Advance Authorisation Scheme

An Advance Authorisation is issued to allow duty free import of inputs, which are physically incorporated in export product (making normal allowance for wastage). In addition, fuel, oil, energy, catalysts which are consumed/ utilised to obtain export product, may also be allowed. DGFT, by means of Public Notice, may exclude anyproduct(s) from purview of Advance Authorisation. Advance Authorisation can be issued either to a manufacturer exporter or merchant exporter tied to supporting manufacturer(s) for:

- (i) Physical exports (including exports to SEZ); and/ or
- (ii) Intermediate supplies; and /or
- (iii) Deemed Exports
- (iv) Supply of `stores' on board of foreign going vessel/ aircraft subject to condition that there is specific SION in respect of item(s) supplied.

Advance Authorisations necessitate exports with a minimum value addition of 15 % .The Export Obligation shall be fulfilled within the period of 36 months.

2. Duty free Import Authorisation Scheme

DFIA is issued to allow duty free import of inputs, fuel, oil, energy sources, catalyst which are required for production of export product. DGFT, by means of Public Notice, may exclude any product(s) from purview of DFIA.

Table: Performance of Exports, Im ports and Balance of Trade in Rupees during 2004-05to 2010-11 (April-Dec) is given in the Table below (Value in Rs. Crores)

S.No	Year	Exports	%Growth	Imports	%Growth	Trade Balance
1.	2004-2005	375,340	27.94	501,065	39.53	-125,725
2.	2005-2006	456,418	21.60	660,409	31.80	-203,991
3.	2006-2007	571,779	25.28	840,506	27.27	-268,727
4.	2007-2008	655,864	14.71	1,012,312	20.44	-356,448
5.	2008-2009	840,755	28.19	1,374,436	35.77	-533,680
6.	2009-2010	845,534	0.57	1,363,736	-0.78	-518,202
7.	2009-10 Dec)	608,882	991,605	-382,723	(Apr-	
8.	2010-11 Dec)	751,633	23.44	1,126,513	13.61	-374,880 (Apr-

This scheme is in force from 1st May, 2006. The Value addition in the scheme should be 20% and Transferability allowed after fulfillment of Export obligation.

Deemed Exports

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Deemed Exports” refer to those transactions in which goods supplied do not leave country, and payment for such supplies is received either in Indian rupees or in free foreign exchange. Following categories of supply of goods by main / subcontractor shall be regarded as “Deemed Exports” under FTP, provided goods are manufactured in India:

- (a) Supply of goods against Advance Authorisation / Advance Authorisation for annual requirement / DFIA; (b) Supply of goods to EOU / STP / EHTP / BTP;
- (c) Supply of capital goods to EPCG Authorisation holders; (d) Supply of goods to projects financed by multilateral or bilateral Agencies / Funds as notified by Department of Economic Affairs (DEA), MoF under International Competitive Bidding (ICB) in accordance with procedures of those Agencies / Funds, where legal agreements provide for tender evaluation without including customs duty.

Benefits for deemed exports

- (a) Advance Authorisation/ Advance Authorisation for annual requirement/DFIA. (b) Deemed Export Drawback.
- (c) Exemption from terminal excise duty where supplies are made against ICB. In other cases, refund of terminal excise duty will be given. Exemption from TED shall also be available for supplies made by an Advance Authorisation holder to a manufacturer holding another Advance Authorization if such manufacturer, in turn, supplies the product(s) to an ultimate exporter.

Exports

India's exports for the month of April- December 2011 have registered a growth of 25.8%, at US \$ 217.6 billion. during the period April—December 2011, the imports were US \$ 350.9 billion with a growth of 30.4% and a Balance of Trade stood at US \$ (-)133.3 billion, during the same period. India's exports in December 2011 were US \$ 25 billion and imports stood at US \$ 37.8 bn Balance of trade for the month of December 2011 stood at (-) 12.8 billion US \$. During April-December 2011, the following sectors have done well viz., engineering, (US \$ 45.3 billion) which registered the growth of 21.6%; petroleum & oil products, 55% (US \$ 43.9 billion); Gems & Jewellery registered the growth of 38.5% (US \$ 33.5 billion); Drugs and pharmaceuticals 21.5% (US \$ 9.1 billion US \$);leather 25.8% (US \$ 3.4 billion) Cotton yarn and fabric made-up 13% (US \$ 5.1 billion) ; electronics, 21.1% (US \$ 6.7 billion); Readymade garments, 23.7% (US \$ 9.6 billion).

As regards to imports during April-December 2011, the growth estimates on the following sectors are: POL, 40.4% (US \$ 105.6 billion); Gold and silver 53.8% (US 45.5 billion).; machinery, 27.7% (US \$ 25.8 billion), electronics, 24% (US \$ 25.2 billion), fertilizers 35% (US \$ 8.2 billion) and coal 62% (US \$ 12.5 billion US \$).

Directions of Export

Out of five major regions of exports markets, Asia and Asean with a share of (53.5%) has emerged as the major exports market for India's trade followed by Europe (20.2%),America (16.5%) Africa(6.7%) and CIS and Baltic (1.1%)

Trade Balance

During 2009-10 trade deficit declined marginally as there was a mild recovery in exports and a marginal decline in imports.

The trade deficit in 2009-10 was US\$ 109.6 billion which was lower than the deficit of US\$ 118.4 billion during 2008-09.

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ENTERTAINMENT INDUSTRY

CHANGING MEDIA AND ITS ROLE IN ECONOMIC AND SOCIAL DEVELOPMENT

Q. Role of Media in Economic & Social Development.

Indian media- private media in particular - has been free and independent throughout most of its history. The three year period of emergency declared by late former Prime Minister Indira Gandhi, was the time when India's media was faced with potential government retribution.

Things have changed drastically since then. Media, the fourth pillar has become a commercial tool to make money, earn huge profits and influence people and government. The hard truth about Indian journalism currently is that proprietors matter, editors do not; money counts, talent does not.

The media industry in India is growing in leaps and bounds. It has gathered an unbelievable momentum and the credit goes to all the pillars – media, advertising, public relations, corporate communications, etc.

For a news media that is often in pursuit of the lowest common denominator of audience taste, the Radia tapes offered a story that had sensation in abundant measure. The story has been consigned to a black hole of neglect. The news media has increasingly been seen as a stenographer to power and an instrument for harnessing every form of dissent to dominant structures. The Radia tapes show that it has been actually engaged in a more sordid enterprise than stenography – it has been an active and eager participant in the abuse of power.

Of late, media is focusing more into sensation. It's all about hype, circulation figures and TRP game. There is perception between journalists that negative sells at least in India.

Is the media responsible for swine flu panic in India two years back?

Consider this. In June, TV channels started creating panic by airing that in next two days the water level of the Yamuna River in Delhi was going to increase, as water was being released from the Hathni Kund barrage in Haryana.

The water level of Yamuna had increased from 50 thousand to 1 lakh cusec. They did not say that upto 3 lakh cusec, is considered normal. Then, the water level came down to 26 thousand cusec. But a few channels continued creating panic. A day later, another channel claimed the water released from Hathni Kund barrage of the Yamuna in Haryana was about to enter Delhi even as the water level of the HK barrage was down to 18 thousand cusec. Some channels even used video clips of a breach in a canal named Dadu Pur Nalvi to hype their story.

On the other hand, millions of rural and urban Indians do not have decent sanitation and thousands die from diarrhoea, the issue is like an abandoned terrain that nobody wants to tread on and media is least bothered.

Why can't media houses keep up a relentless coverage on the unseen and ongoing disaster of hunger — give voices and faces to the voiceless and faceless who live and die in our villages?

Ethics and business do have a turbulent liaison for quite some time. In the last two decades, the Indian economy has recorded an incredible and dependable growth, which has brought it to considerable global attention.

As India is the second largest world economy and growing rapidly just behind China, the business media is getting stronger in the current economic system. Even, business news channels have

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influence from different vested interest groups and there is rivalry between these channels for TRPs.

Like never before, the manner in which we communicate is in a state of change. The Internet has boomed, busted, and re-emerged with technologies and practices that are enabling new conversations that can start locally, and have a global impact. This fundamental shift has created a new landscape of influences and an entirely new ecosystem for supporting the dissemination of information. Monologue has given way to dialogue and in this new social media era of Facebook, Twitter and Google, consumers are in control. People react over these portals in the speed of light and it is almost impossible to predict the reactions.

This is high time when media should focus and act as a catalyst on economic and social development of the nation rather than circulation, TRP, hype and sensational.

It should focus more to reach the mass by taking the opinions from them on critical and important issues. The system has started, but needs to be aggravated on a larger scale. If media becomes a catalyst and acts as a real watchdog, then there is no requirement of a Lokpal Bill.

Though appointing a regulator for the sector would be highly counterproductive, yet the media itself should shoulder the responsibility of maintaining its high standards of objectivity and simultaneously extend constructive criticism to the Government.

Rather, media should develop a concept of having an issue dedicated to good news. Once in a while, it is a pleasant change to be acquainted with what is going right. All the stories should be positive, encouraging and full of hope. And very importantly, the stories should inspire. Even small efforts and innovations can snowball into larger initiatives.

Media has a larger role to play in India's social and economic development as in India, the progress of social-economic development among major states is not uniform.

Development is a multi-dimensional phenomenon. Some of the major dimensions include: the level of economic growth, level of education, level of health services, degree of modernization, status of women, level of nutrition, distribution of goods and services and access to communication

Media and socio-economic development are like two sides of a coin. The role of media is to evaluate the degree of percolation throughout the community.

Social media does play a role in taking India forward. Media helps in broadcasting things which we are unaware of. There is technology, and other advancements in trends. It can be a great way for progress which will help India grow in terms of learning, entertainment and employment opportunities.

Media does play an important role in bringing together the ethical values in us. Most of us watch television everyday and we learn things by watching it. In India, media plays an important role in affecting the mindset of the people. People watch television and they tend to adapt many things which they see on television. If this is used for beneficial purpose, it could bring positive changes in the people and thereby on the social system.

Media is responsible for the coverage of India's growth in all aspects. It tells about the economic growth, local development, latest projects and government involvement all what is possible. The role of media cannot therefore be denied in the growth of the nation.

APPROACH TO 12TH FIVE YEAR PLAN

AGRICULTURE IN THE 12TH PLAN APPROACH

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Q. What 12th Plan's Approach paper says about water?

This is an issue highlighted outside agriculture and yet is critical for it. In fact many issues for agriculture are strictly outside the sector but are critical in the new development ray of the economy. The Approach paper says:

‘Based on the aquifer mapping exercise, we need to develop sustainable groundwater management plans for each aquifer. This requires action on the ground involving *partnerships of stakeholders at the village-level with hydro-geologists and social mobilizers*, who would guide collective sharing and sequential use of groundwater based on a careful *understanding of the storage and transmission characteristics of different aquifers in each of the hydrogeological settings* outlined in the MTA of the XIth Plan. Promising work on a reasonable scale has started in this direction in Andhra Pradesh. *The Andhra Pradesh Farmer Managed Groundwater Systems (APFAMGS)* project is supported by the Food and Agriculture Organization and implemented by NGOs in seven drought-prone districts of Andhra Pradesh. The project employs participatory hydrogeological monitoring, by engaging farmers in data collection and analysis, and building their understanding of the dynamics and status of groundwater in local aquifers. This is complemented with *crop water budgeting, whereby the quantity of water required for crops is assessed* at the aquifer level and compared with the amount of groundwater actually available to arrive at a suitable cropping pattern that would permit sustainable groundwater use. The total outreach of the programme is estimated at 1 million farmers. Such initiatives need to be undertaken at many more locations in the Twelfth Plan.’

reconstruction. In addition to revealing the magnitude of effects caused by a disaster, the damage and loss assessment provides information to define effects and impacts on most geographical areas and sectors of the economy, as well as on overall economic performance.

Damage is defined as total or partial destruction of physical assets existing in the affected area. Damage occurs during and immediately after the disaster and is measured in physical units (i.e. square metres of housing, kilometres of roads, etc). Its monetary value is expressed in terms of replacement costs according to prices prevailing just before the event.

Whereas Loss is change in economic loss arising from the disaster. They occur until full economic recovery and reconstruction is achieved and in some cases lasting for several years. Typical losses include the decline in output, in productive sectors (agriculture, livestock, fisheries, industry and commerce) and lower revenues and higher operational costs in the provision of services (education, health, water and sanitation, electricity, transport and communications). Also considered losses are the unexpected expenditures to meet humanitarian needs during the post-disaster emergency phase. Losses are expressed in current values.

The New Dimension of Disaster Loss in Global Economy

It is being observed that in the time of globalization, disaster happening in one country is leading to huge loss in other countries. The damages of stock (infrastructure) are determining the flow (revenue) of either neighbouring or distantly located countries. For example, during the recent flood in Thailand, the Federation of Thai Industries estimated that the damage of the record flooding to industry will total \$6.2 billion. Disruptions were felt in Japan and to a lesser extent, in United States because the closed industrial estates host high-tech and automotive manufacturers like Western Digital, Seagate, Nissan, Toyota, Isuzu, ON Semiconductor, and TDK Magnecomp. Four automotive factories, accounting for 630,000 Toyotas and 240,000 Hondas annually, have closed. Over 300 Japanese companies were directly affected by the disaster and estimates suggest they will take months to recover. In consumer electronics, the hard disk drive (HDD) industry also felt the flood's effects. California-based Western Digital is expected to see a 40 percent decline in its exports from Thailand, which is worth \$6.5 billion a year, as two of its plants in Bang pa-in have been forced to close. Western Digital produces 33 percent of the world's HDDs and sells to major computer manufacturers like Acer, Dell, and Hewlett-Packard. Apple CEO Tim Cook said that Apple has suffered supply chain snags due to factory closures as well.

Do You Know?

EARTH SYSTEM SCIENCE ORGANIZATION What is

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Earth System Science Organization and what is its vision?

Recognizing the importance of strong coupling among various components of the earth, viz. atmosphere, oceans, cryo-sphere and geo-sphere the Ministry of Earth Sciences was founded in 2006. Soon after in 2007 came in a virtual organisation, an executive arm of the Ministry, the Earth System Science Organisation

(ESSO). It has three major branches of earth sciences viz., (i) Ocean Science & Technology (ii) Atmospheric Science & Technology and (iii) Geoscience and Technology. The sole purpose of the endeavor was to address holistically various aspects relating to earth processes for understanding the variability of earth system and for improving forecast of the weather, climate and hazards.

Primarily aimed to develop and improve capability to forecast weather, climate and hazard related phenomena for societal, economic and environmental benefits including addressing aspects relating to climate change science, climate services and integrated Himalayan meteorology, the ESSO is also responsible for development of technology towards the exploration and exploitation of marine resources in a sustainable way for the socio-economic benefit of the society by taking into account the global developments in the field of marine environment.

The Vision

The overall vision of the ESSO is to excel in knowledge and technology enterprise for the earth system science realm towards socio-economic benefit of the Indian sub-continent and in the Indian Ocean region. It has three major components:

Provide scientific and technical support for both academic and applied research in Earth System sciences as a whole comprising the atmosphere, hydrosphere, cryosphere and the geosphere, with particular reference to the Indian sub-continent and the surrounding oceans as well as the Polar Regions.

Provide the Nation with the best possible services in forecasting the monsoons and other weather/climate parameters, ocean state including early warnings to natural disasters like storm surge, earthquakes, tsunamis and other phenomena through well integrated programs.

Support science and technology development for exploration and exploitation of ocean resources (living and non-living), ensuring their sustainable utilization.

How does ESSO Work?

The ESSO contributes to the areas of Weather (General), Weather advisories specific to agriculture, aviation, shipping, sports, etc. Monsoon, Disasters (cyclone, earthquake, tsunami, sea level rise), Living and non-living resources (fishery advisory, poly-metallic nodules, gas hydrates, freshwater etc), Coastal and Marine Ecosystems and Climate Change, Underwater Technology. One of the major schemes of the ESSO, on defining and deploying satellite based, airborne and in-situ atmospheric, ocean and lithosphere observing systems, acts as backbone for achieving the objectives. These policies/programmes are being pursued through its centres viz., autonomous bodies and subordinate offices. The institutions, viz. India Meteorological Department (IMD), National Centre for Medium Range Weather Forecasting (NCMRWF) and Indian Institute of Tropical Meteorology (IITM), National Centre for Antarctica and Ocean Research (NCAOR), National Institute of Ocean Technology (NIOT), Indian National Centre for Ocean Information Services (INCOIS), Centre for Marine Living Resources (CMLRE) and Integrated Coastal and Marine Area Management (ICMAM) were grouped under the ESSO. These institutions are under Earth System Science Organization (ESSO), managed by the ESSO Council. Each centre has been created with a specific well defined mandate. The ESSO operates through ESSO council, an apex body to formulate policies and plans, and provide programme directions for the Centres/Units and review the implementation of programmers.

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How do you explain Desalination Technology and how does it work?

Desalination refers to the process by which pure water is recovered from saline water by the application of energy. The commercially relevant desalination processes are broadly classified as thermal and membrane processes. The Low Temperature Thermal Desalination (LTTD) is a process by which warm surface seawater is flash evaporated under low pressure and condensed with cold deep seawater, for generation of freshwater. The ESSO has set up till date 4 Low Temperature Thermal Desalination (LTTD) plants successfully in the country, one each at Kavaratti, Minicoy, Agatti, Lakshadweep and at Northern Chennai Thermal Power Station (NCTPS), Chennai. The technology is completely indigenous, robust and environment friendly. Out of this four plants, the Minicoy and Agatti plants were established in April 2011 and July 2011, respectively. The capacity of each of these LTTD plants is 1 lakh litre per day of potable water.

What is South Pole Scientific Expedition?

India had successfully completed a scientific expedition to the South Pole during November-December 2010. It was a very important expedition as it was part of the international celebration of centenary of man's reaching South Pole in 1911. The first expedition to the South Pole started in 1902 and completed in 1911. This expedition was scientific in nature and was carried out with ice trucks, ice vehicles which travel 80 to 90 km/hour against the first expedition which was an adventure expedition where dogs and sledges were used.

What is India's preparedness to monitor Tsunami and is Tsunami Early Warning System in place now?

A state-of-the-art Tsunami Warning System was made operational in September 2007 has been in continuous operation to forewarn of an impending disaster in less than 10 minutes of an occurrence of an earthquake. The National Tsunami Early Warning Centre (NTEWC) is operated 24x7. So this ensures that the warning of a possibility of a Tsunami is given out ahead of it actually hitting the coast, allowing people to evacuate and take necessary precaution.

What is Monsoon Mission?

The ESSO has launched the Monsoon Mission for improving the predictability of the Indian Monsoon. Better monsoon prediction will help the Nation in taking advance action in preparing for the agricultural and other impacts of the monsoon. It consists of two sub-themes- Seasonal and Intra-seasonal Monsoon Forecast and Medium Range Forecast. The mission will support focused research by national and international research groups with definitive objectives and deliverables to improve models in the medium range as well as in the extended and seasonal range scales through setting up of a framework for generating dynamical forecasts and improving skill of forecasts. The Mission will also support observational programme that will result in better understanding of the processes. Under the Mission, Indian Institute of Tropical Meteorology (IITM) will coordinate and lead the effort for improving the forecasts on seasonal and intra seasonal scale. National Centre for Medium Range Weather Forecasting (NCMRWF) will lead and coordinate the efforts for improving the forecasts in the medium range scale. These will be made operational by the India Meteorological Department (IMD). In a bid to improve the skill of the forecasts in various temporal and spatial ranges, proposals will be invited from national as well as international Institutes on very specific projects and deliverables. Provisions for funding the national as well as the international partners will be provided. These partners will be allowed to use the HPC facility at IITM and NCMRWF which will be suitably enhanced for the purpose. A National Steering group is being put in place to steer the programme and review the progress of the mission.

BUDGET 2012-13

TAXATION PROPOSALS

Toleration & Budget 2012-13

Corporate India felt disappointed no major announcement had been made to kick-start an economy in a limbo in the wake of a second recession threatening the global economic order and the individual tax payer grappling with a spiraling inflation did not get the much needed tax reliefs as the exemption limit was pushed to just `2 lakhs from `1.80 lakhs instead of the demand for `3 lakhs. Corporate India fears that the excise hikes and the rise in service tax and widening of the service tax base might push up costs of raw materials and consequently manufacturing costs

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making it less competitive in both the domestic and international markets.

The individual tax payer feels if products become costlier manufacturers will pass on the burden to the customer, then the relief from the marginal rise in the exemption limit of Income Tax would stand negated. Because the cost push inflation will make him pay more for the commodities he seeks to buy with the extra income which does not in real terms become extra at all.

The Finance Minister hopes to mop up an additional tax revenue of ` 45,940 crore (about 10 billion USD), the highest by any finance minister in India and probably the highest by any Finance Minister in the developing world. Mr. Mukherjee has sacrificed revenue of ` 4,500 crore (about 1 billion USD) while extending the exemption limit from the existing ` 1.80 lakhs to ` 2 lakhs, raising the taxation slab of 20 percent to ` 10 lakhs from the existing ` 8 lakhs. The additional revenue accrues from the hike in excise duties, customs levies, hike in service tax from 10 to 12 percent and widening of the service tax base by defining them clearly under 17 heads in tune with best international practices. Net revenue gain would be about ` 41,400 crore (about 9.2 Billion USD).

Again the finance ministry could actually end up with huge amounts of revenue this fiscal as there is a windfall in the offing. As the 122 2G licences have been cancelled, they are up for fresh auctions. Also the 3G and 4G auctions are also due. Finance ministry calculates that they could actually end up with an additional ` 60,000 crores from this. Again the disinvestment target has been fixed at ` 30,000 crores but they could end up with ` 40,000 crore in their hands. Let's look at the taxation proposals.

The new tax slab providing relief at the entry level and again at the 20 percent slab by pushing assessable income from ` 8 lakhs to ` 10 lakhs will put about ` 25,000 on an average to the tax payer. Those above 60 yrs. of age are still exempt from tax till earnings of ` 2,50,000 and those above 80 yrs. of age exempt till ` 5,00,000. Let's look at the indirect taxes. Service tax goes up from 10 percent to 12 percent. Service tax is sought to be widened by defining them under 17 heads clearly in tune with best international practices.

Revenue yield would be about ` 18,660 crore (about 4.14 billion USD). This should not be considered high because service sector today accounts for about 59 percent of the nation's GDP as the finance minister rightly says. Customs and Central Excise hike would yield additional revenue of about ` 27,280 crore (about 6.06 billion USD). Conversion to USD is based on constant exchange parity between the dollar and rupee at ` 45 to a dollar. In brief some of the other taxation proposals are: The FM has allowed a deduction of up to ` 10,000 for interest from savings bank accounts for the individual tax payers. Those with salary incomes up to ` 5 lakhs and interest from savings bank account up to ` 10,000 benefit. They need not file income tax returns. Also, any expenditure of up to ` 5,000 on preventive health check-up is deductible from the tax amount. Senior citizens don't have to pay advance tax. No change is contemplated in the corporate tax. However certain measures are being proposed to allow corporate to access lower cost funds and promote higher level of investments in several sectors. The rate of withholding tax on interest payments on external commercial borrowing is being reduced from 20 percent to 5 percent for three years to provide relief to stress out sectors in infrastructure sector such as power, airlines, roads and bridges, ports and shipyards, affordable housing, fertilizer and dams. In another sop to the corporate sector, the FM has proposed to remove the cascading effect of Dividend Distribution Tax (DDT) in a multi-tier corporate structure. Repatriation of dividends from foreign subsidiaries of Indian companies to India at lower tax rate of 15 percent against existing 30 percent is being allowed for one more year that is up to March 2013. In a measure aimed at boosting the power sector, the FM has proposed to extend the sunset clause by one year for power sector undertakings so that they can set upon on or before March 31, 2013 for claiming 100 percent deduction of profits for 10 years. Also, additional depreciation of 20 percent in the initial year is being

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proposed to be extended to new assets acquired by power generation companies. Focusing on the capital markets, Mukherjee proposed to reduce the Securities Transaction Tax (STT) by 20 percent that is from 0.125 percent to 0.1 percent on cash delivery transactions. At the same time he proposed to extend the levy of Alternate Minimum Tax (AMT) on all persons other than companies, claiming profit linked deductions. He also proposed to introduce a General Anti Avoidance Rule (GAAR) to counter aggressive tax avoidance schemes, while ensuring that it is used only in appropriate cases.

Black Money

Compulsory reporting requirement in case of assets held abroad

Allowing reopening of assessment up to 16 years in relation assets held abroad | Tax collection at source on purchase in cash or bullion or jewellery in excess of ₹ 2 lakh

Tax deduction at source on transfer of immovable property (other than agricultural land) above a specified threshold

Tax collection at source on trading in coal, lignite and iron ore

Increasing the onus of proof on closely held companies for funds received from shareholders as well as taxing share premium in excess of fair market value

Taxation of unexplained money. Credits, investments, expenditures at the highest rate of 30 percent irrespective of the slab of income

Mr. Mukherjee has promised a white paper on black money to be tabled in parliament in the current budget session itself. This is something to look forward to as financial experts believe that at least Rs one lakh crore is parked by high net worth individuals of Indian origin in Swiss banks and other tax havens in islands in Indian ocean or central America.

-- Initiative taken by Finance Minister to tackle Black Money

Other measures include enhancing the duty on large cars from 22 percent to 24 percent and in case of cars attracting a mixed rate of duty of 22 percent plus ₹ 15,000 per vehicle, it would now be a uniform duty of 27 percent ad valorem rate. No change is proposed in the peak rate of customs duty of 10 percent on agricultural goods. He has proposed relief to stimulate investment in the agriculture and related sectors, infrastructure, mining, railways and roads, civil aviation, manufacturing.

On the question of civil aviation getting relief, Mr. Mukherjee proposed to fully exempt from basic customs duty parts of aircraft and testing equipment imported for the purpose. To support the airline industry, he proposed, to fully exempt both new and treaded aircraft tyres from basic customs duty and excise duty.

The minister made no commitment on enhancing foreign participation or equity holding in Indian private airline carriers, but said both were under active consideration. While retaining the ownership pattern in Indian private carriers as Indian, he showed some concessions in external commercial borrowings of up to one billion us dollars for the airlines industry which was severely distressed due to severe competition on fares worldwide and lesser tourist inflow. For airline passengers, he announced a concession of raising the baggage allowance to ₹ 35,000 from the existing ₹ 25,000 for persons of Indian origin. For children up to 10 years it was raised from ₹ 12,000 to ₹ 15,000.

INVESTING IN THE SOCIAL SECTOR

Budgetary allocation for NRHM

The National Rural Health Mission, launched in 2005, envisaged upgrading every district headquarters hospital to provide quality health facilities to all by 2012. This would have been a critical

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measure given that district hospitals play a key role in providing health services to the poor and that substantial improvements in infrastructure and other facilities are required so they can function more effectively. But the budget allocations for this scheme have been minuscule with only 20 percent of the recommended outlays during the entire 11th Plan period.

Budget 2012-13 proposes a 15 percent hike in the allocation from the ₹18,115 crore in 2011-12 to ₹20,822 crore in 2012-13. But given the infrastructure gaps and human resource crunch, this additional funding appears to be inadequate. Spending on Human Resources for Health also projects a gloomy picture, with only 16 percent of the recommended outlays during the entire Plan period. If the National Rural Health Mission is to deliver its goals then substantial budgetary support is required to address the dire need to augment the rural health infrastructure, fill in vacancies of doctors, auxiliary nurse midwives, and paramedics. According to progress report only 27 percent of the primary health care centres are fully functional—just 6,239 of the total of 23,391 primary health care centres. There is a 16 percent shortage in the requirement of doctors at these centres. The norm of one accredited social health activist per 1000 persons is far from being met, the average is currently at 0.74 per 1000 persons. Only 15 percent of primary health care centres have an auxiliary nurse midwife, while male health assistants can be found in 46 percent of primary health care centres, female assistants are more scarce, available in only 38 percent of centres. The gaps in the country's rural health infrastructure are a major issue given that health is a key indicator for development.

ENVIRONMENT AND DEVELOPMENT

DURBAN CONFERENCE: THE ROAD AHEAD AND LESSONS FOR INDIA

Q. What are the outcomes of Durban Conference? (in Indian Context)

In recent past, the seventeenth conference of parties (COP 17) of United Nations Framework Convention on Climate Change (UNFCCC) is concluded at Durban International Convention Centre where 195 nations of the globe participated. The people from throughout the world were anxiously waiting for the positive and stronger outcomes breaking many roadblocks created since the last two COPs at Copenhagen and Cancun. In Durban right from the beginning there were a lot of obstructions in the negotiations and irrespective of intense consultation and dialogue, a common consensus was not reaching out for which the host country south Africa extended the time period of the conference for further thirty six hours. European Union (EU) along with Association of Small Island Countries and United States (US) were insisting that Kyoto Protocol should come to an end and India and China must take a legally binding deal with some financial commitments towards global climate change mitigation. Although China in it's action, was not very strong initially, India from the beginning along with other BASIC countries and G-77 put forward the issues of "Equity", "Intellectual Property Right (IPR)" and "Barriers to Trade", asking some more in planet's carbon space so that it can take a new deal at least after 2015, as per it's cabinet decision.

Major Decisions / Out Come in Durban Climate Change Conference

New Deal in a post Kyoto Protocol to be finalized by 2015 and launched by 2020 | Second Commitment Period in Kyoto Protocol to be operational in 2013 and continue

Green Climate Fund (GCF) Launched to boost *technology transfer* and promote *Clean Tech*
"Equity" finds a place back in future Climate talks

More importance to Adaptation mechanism

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Geo-political Impacts of the Negotiations

India regains Leadership of the Developing World

Developed Nations Leadership remains in EU's hand

Small Island States weakens their ties with G-77, becoming EU front

BASIC Countries look more united, although China was in weak bond at the beginning

India's Gains

Equity along with Common But Differentiated Responsibility (CBDR) Principle retained

Secures 10 years of Economic Growth without Carbon containment

India's Losses

IPR and technology not as well anchored in new deal

Emissions from Agriculture Sector finds more importance in Negotiation texts

Agenda ahead for India

Ensure that review of existing commitments of developed world is mandated

Smooth Introduction of Kyoto Protocol's Second Commitment Period Fight to place Equity, IPR and Trade issues in right perspective before all

Negotiations for 5 years the hard talks that would set out terms of new global regime

Let us now see how important is Durban conference from India's perspective? Although India was pleading constantly on Common But Differential Responsibility (CBDR), equity and IPR and unilateral technical barrier to trade issues, along with historical burden sharing to have an equitable right on per capita basis; India managed to retain equity with CBDR into negotiation's text and got the extension of Kyoto Protocol to its second commitment period 2013–17 and a new treaty could be finalized by 2015 which would be operational from 2020. These will certainly provide India and other developing countries some more breathing space to facilitate their citizens to grow and to have access to some of the basic necessities where the developed nations will also get some little time to meet their Kyoto commitments, which unfortunately none of them have achieved even 15 percent so far. the technical details of gains and losses will emerge in coming days as deeper assessments are made, but India certainly took the centre-stage and regained its position as the leader and moral voice of the developing world. The principle of equity found its place back and life was infused into Kyoto Protocol which will now continue to be in force beyond 2012. During Durban Climate Change Negotiations, India enjoyed a strong support and backing of African nations particularly on Equity and Common but differentiated responsibility issues.

India very strongly put its stand to go with *Bali Action Plan* which should be implemented in next two years and *Cancun Agreement* should be operationalized along with funds and technology as promised, but said no to a legally binding treaty now. India is one of the least CO₂e emitter and many of its people don't have an access to common basic necessities like food, clothing, shelter and electricity. In 2010, the per capita CO₂e emissions were estimated at 16.9 tonnes for the US and 9.2 tonnes for the EU as compared to 1.5 tonnes for India and 6.8 tonnes for China. When small island countries broke away from G-77 and joined EU and the US in demanding a new deal, India was backed by BASIC countries and developing economies like Egypt, Indonesia and Pakistan. It seems the negotiators from the industrialist countries were able to remove tactfully the text of historical burden sharing from *Cancun Agreement* and a lot of damage was caused to negotiations, particularly in last two COPs.

Another positive outcome of Durban conference is regarding the modalities of a Green Climate

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Fund (GCF). Although GCF remains an empty shell with no new funding commitment, it was decided that the fund will start operating from 2013 and G20 would look into the details of modalities during its sessions in 2012. Nations have backed an intention to raise \$100 billion fund in climate cash by 2020 which would be run by a 24 member board, split evenly between developing and developed countries. The World Bank would remain as an interim trustee subject to a review after 3 years and would be accountable to the board. The fund will provide money and other assistance like technology transfer relating to clean energy technologies and help poorer nations shift towards low emissions power generation and adapt to the impacts of the climate change. Poorer nations can access funds via multi lateral lending agencies or specialist UN bodies or directly after an accreditation process. Countries can nominate domestic agencies to access funds after vetting. The United States desired greater emphasis on the role of private sector and also favoured a model based on multilateral banks playing a leading role with World Bank.

It is at the same time, a matter of concern that emission level of all the individual countries as well as that of the planet is constantly increasing. The 512 metric ton increase amounted to a near 6 percent rise between 2009 and 2010, going from 8.6 to 9.1 billion metric tonnes. These increased emissions released into the atmosphere is the result of burning coal and gas, largely contributed by China, the US and India, the world's top three Green House Gas (GHG) emitters. GHG Emissions from the US has increased to 5.25 in 2010 from 5.04 billion tonnes in 2009 and similarly EU-27 had a rise from 3.94 in 2009 to 4.25 billion tonnes in 2010. In terms of absolute annual emissions, India emitted 1.84 billion tonnes of CO₂e in 2010, just 35 percent of the emissions of the US, even though the population of the US is one third of India. More over, India has already announced a cut of 20-25 percent in its Carbon Intensity by 2020.

Another important discussion of the Conference is imposition of "Carbon Tax" on aviation and maritime transport. The International Civil Aviation Organisation (ICAO) and International Maritime Organisation (IMO) have proposed "Carbon Tax" on the line European Union enforced the scheme for flights landing or passing through European skies, starting next year 2013 (was proposed to start from January 2012 at Durban Climate Change Negotiations but could not be approved) under Emission Trading Scheme (ETS) and to extend the same to the shipping sector in 2015. This EU move was opposed and resisted by India, China, the US and Russia as they have agreed collectively to a bouquet of counter-measures, if EU does not withdraw its scheme of charging additional levy, which in fact does not have the Concurrence of the apex decision making body Conference of Parties to UNFCCC yet. Indian Environment Minister Ms Jayanthi Natarajan took this issue with partners in BASIC group in a recent meeting at New Delhi.

It is quite alarming to notice that there is a geometric rise of global green house gas emissions, from 8.6 to 9.1 billion metric tons (more than 6 percent) during 2009 to 2010 in just one year time period. It is high time the whole world comes forward for rapid actions to combat climate change collectively to protect our planet. Although developing nations are doing a lot voluntarily as India is going through its Eight national missions mode approach, at this hour, we need to shape its outcome and be more visible and look aggressive to the world.

MONSOONS

MONSOON VARIABILITY, CLIMATE CHANGE AND AGRICULTURE

Q. Evaluate the impact of the Monsoon on Food Grain Production.

The impact of droughts on agricultural production has been known for a long time. There are major dips in the FGP in all the droughts beginning with those in 1965,66 and ending with that in 2002. Most of earlier work in identifying appropriate strategies for monsoon variability was focused on

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droughts. For estimation of the economic value of forecasts of the monsoon or the benefit of alternative strategies etc., a quantitative assessment of the impact of the entire range of variation of the monsoon is required.

The deviation of the FGP, from the long term trends, for a specific year is taken as a measure of the impact of the monsoon in that year, and is denoted by IFGP. It is seen that the IFGP is negative for all droughts (with value up to -20 percent) and positive for ISMR anomaly larger than 10 percent (with values up to +10 percent). IFGP is highly correlated with the IMMR anomaly. With the correlation coefficient of 0.76, which is significant at 1 percent level. Thus the impact of the monsoon on the all-India food grain production is high, although a large fraction of the FGP comes from the irrigated regions.

The most striking feature of the variation of the IFGP with the anomaly of ISMR is the asymmetry in response to deficits versus excess of ISMR. This asymmetry in response to monsoon variability has important implications of our food security. It implies that even when over a long period, the mean monsoon rainfall does not decrease (i.e., deficits in some seasons are balanced by above normal rainfall in other), the negative impact of the deficit monsoon seasons cannot be made up by increase in FGP in good monsoon seasons.

Some insight into how such a asymmetry can arise is gained by a comparison of the response of the yields of rained crops to an increase in the growing season rainfall, on the farmers' fields via a vis on agricultural stations in the same regions.

The major management difference between the farmers' field and the agricultural stations are fertilizer and pesticide applications enhance yield substantially (and hence are cost-effective) only when there is sufficient rainfall. Thus the increase in the yield with rainfall is rather small on the farmers' fields leading to the asymmetry in the response of the FGP to the monsoon.

It is important to note that the impact of these applications on the yields has increased in the last three decades. Since the 70s, there have been major changes in the cropping patterns due to various factors including larger impact of the market economy introduction of new varieties etc. and the traditional complex cropping system is now replaced by mono-cropping over large tracts of land. We find that the asymmetry has, indeed increased. In the era up to 1980, a deficit in rainfall of 15 percent is expected to reduce the FGP by about 10 percent and surplus to increase FGP by about 6 percent. In contrast, in the era beginning in 1980, the expected effect of a deficit of 15 percent on the FGP is about 9 percent while the estimated impact of a surplus of 15 percent on the FGP is only 0.7 percent! Thus, in the earlier era, the magnitude of the impact of a drought and a surplus on FGP were comparable in magnitude; while after 1980 the impact of surpluses has become almost negligible. Clearly there is a window of opportunity of better utilization of normal and good monsoon years for enhancement of production.

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Sample Material of Our Study Kit Gist of Economy

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BALANCE OF PAYMENTS

Introduction

As in 2008, the transmission of the crisis has been mainly through the balance-of-payments (BoP) channel. Export growth has decelerated in the third quarter of fiscal 2011-12, while imports have remained high, partly because of continued high international oil prices. At the same time, foreign institutional investment flows have declined, straining the capital account and the rupee exchange rate that touched an all-time low of Rs. 54.23 per US dollar on 15 December 2011.

Balance of Payment (bop)

- As per the Balance of Payment Manual (Fifth Edition),
- BoP comprises current account, capital account, errors and omissions, and change in foreign exchange reserves.
- Under current account of the BoP, transactions are classified into merchandise (exports and imports) and invisibles.
- Invisible transactions are further classified into three categories. The first component is Services comprising travel, transportation, insurance, government not included elsewhere (GNIE), and miscellaneous.
- Miscellaneous services include communication, construction, financial, software, news agency, royalties, management, and business services.
- The second component of invisibles is income.
- Transfers (grants, gifts, remittances, etc.) which do not have any *quid pro quo* form the third category of invisibles.
- Under capital account, capital inflows can be classified by instrument (debt or equity) and maturity (short- or long-term).
- The main components of capital account include foreign investment, loans, and banking capital.
- Foreign investment comprising foreign direct investment (FDI) and portfolio investment consisting of foreign institutional investor (FIIs) investment and American depository receipts /global depository receipts (ADRs/GDRs) represents non-debt liabilities.
- Loans (external assistance, external commercial borrowings [ECB], and trade credit) and banking capital including nonresident Indian (NRI) deposits are debt liabilities.
- The trade deficit increased by 10.5 per cent in 2010-11 over 2009-10. However, as a proportion of gross domestic product (GDP), it improved to 7.8 per cent in 2010-11 (8.7 per cent in 2009-10).

Current Account

Merchandise Trade

- During 2010-11, exports crossed the US\$ 200 billion mark for the first time, increasing by 37.3 per cent from US\$ 182.4 billion in 2009-10 to US\$ 250.5 billion.
- This increase was largely driven by engineering goods, petroleum products, gems and jewellery, and chemicals and related products.
- The improvement in exports was accompanied by a structural shift in the composition of the export basket from labour-intensive manufacture to higher valueadded engineering and

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petroleum products.

- There was also a diversification of export destinations with developing countries becoming our largest export market in recent years.
- Like exports, imports also recorded a 26.8 per cent increase to US\$ 381.1 billion in 2010-11 from US\$ 300.6 billion in 2009-10.
- Oil imports showed an increase of 19.3 per cent in 2010-11 (as against a decline of 7.0 per cent a year ago) and accounted for 28.1 per cent of total imports (30.2 per cent in 2009-10).
- Growth in imports has primarily been led by petroleum and related products and pearls and semi-precious stones.
- The trade deficit increased by 10.5 per cent to US\$ 130.6 billion as compared to US\$ 118.2 billion in 2009-10.
- This was primarily on account of higher increase in imports relative to exports on the back of a robust domestic economic performance in 2010-11.
- In terms of GDP, however, the trade deficit improved from 8.7 per cent in 2009-10 to 7.8 per cent in 2010-11 due to relatively higher increase in GDP at market prices vis-a-vis trade deficit.

Invisibles

- The invisibles account of the BoP reflects the combined effect of transactions relating to international trade in services, income associated with non-resident assets and liabilities, labour and property, and cross-border transfers, mainly workers' remittances.
- In 2010-11, there was a sharp increase in both exports and imports of services.
- Private transfer receipts, comprising mainly remittances from Indians working overseas, also increased by 3.7 per cent to US\$ 55.6 billion in 2010-11 from US\$ 53.6 billion in the previous year.

Capital Account

- Capital inflows can be classified by instrument (debt or equity) and maturity (short-term or longterm). The main components of capital account include foreign investment, loans, and banking capital.
- Foreign investment comprising FDI and portfolio investment represents non-debt liabilities, while loans (external assistance, ECBs, and trade credit) and banking capital including NRI deposits are debt liabilities.
- In India, FDI is preferred over portfolio flows as the FDI flows tend to be more stable than portfolio and other forms of capital flows.
- Rupee-denominated debt is preferred over foreign currency debt and medium- and long- term debt is preferred over short-term.
- Push and pull factors explain international capital flows.
- Push factors are external to an economy and inter alia include parameters like low interest rates, abundant liquidity, slow growth, or lack of investment opportunities in advanced economies.
- Pull factors like robust economic performance and improved investment climate as a result of economic reforms in emerging economies are internal to an economy.
- The Non-debt flows or foreign investment comprising FDI and portfolio investment (ADRs/ GDRs and FIIs) on net basis decreased by 21.4 per cent.
- Inward FDI showed a declining trend while outward FDI showed an increasing trend in

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- 2010-11 vis-a-vis 2009-10. Inward FDI declined from US\$ 33.1 billion in 2009-10.
- Investment routed through Mauritius remained the largest component of FDI inflows to India in 2010-11 followed by Singapore and the Netherlands.
- Other categories of capital flows, namely debt flows of ECBs, banking capital, and short-term credit recorded a significant increase in 2010-11.

Foreign Exchange Reserves

- India's foreign exchange reserves comprise foreign currency assets (FCA), gold, special drawing rights (SDRs), and reserve tranche position (RTP) in the International Monetary Fund (IMF).
- The level of foreign exchange reserves is largely the outcome of the RBI's intervention in the foreign exchange market to smoothen exchange rate volatility and valuation changes due to movement of the US dollar against other major currencies of the world.
- Foreign exchange reserves are accumulated when there is absorption of the excess foreign exchange flows by the RBI through intervention in the foreign exchange market, aid receipts, and interest receipts and funding from the International Bank for Reconstruction and Development (IBRD), Asian Development Bank (ADB), International Development Association (IDA), etc.
- FCAs are maintained in major currencies like the US dollar, euro, pound sterling, Australian dollar, and Japanese yen.
- Both the US dollar and euro are intervention currencies; however, reserves are denominated and expressed in the US dollar only, which is the international numeraire for the purpose.
- The movement of the US dollar against other currencies in which FCAs are held therefore impacts the level of reserves in US dollar terms.
- The level of reserves declines when the US dollar appreciates against major international currencies and vice versa.
- The twin objectives of safety and liquidity have been the guiding principles of foreign exchange reserves management in India with return optimization being embedded strategy within this framework.

India's Foreign Exchange Reserves

- Beginning from a low level of US\$ 5.8 billion at end March 1991, India's foreign exchange reserves gradually increased.

FCAs

- 6.41 FCAs are the major constituent of India's foreign exchange reserves.
- In line with the principles of preserving the long-term value of the reserves in terms of purchasing power, minimizing risk and volatility in returns, and maintaining liquidity, the RBI holds FCAs in major convertible currency instruments. These include deposits of other country central banks, the Bank for International Settlements (BIS), and top-rated foreign commercial banks and securities representing debt of sovereigns and supranational institutions with residual maturity not exceeding 10 years, to provide a strong bias towards capital preservation and liquidity.

Foreign Exchange Reserves of other Countries

- India continues to be one of the largest holders of foreign exchange reserves. Country-wise details of foreign exchange reserves reveal that India is the sixth largest foreign exchange reserves holder in the world, after China, Japan, Russia, Brazil, and Switzerland at end December 2011.

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Exchange Rate

- The exchange rate policy is guided by the broad principle of careful monitoring and management of exchange rates with flexibility, while allowing the underlying demand and supply conditions to determine exchange rate movements over a period in an orderly manner.
- Subject to this predominant objective, RBI intervention in the foreign exchange market is guided by the objectives of reducing excess volatility, preventing the emergence of destabilizing speculative activities, maintaining adequate level of reserves, and developing an orderly foreign exchange market.
- A sharp fall in rupee value may be explained by the supply-demand imbalance in the domestic foreign exchange market on account of slowdown in FII inflows, strengthening of the US dollar in the international market due to the safe haven status of the US treasury, and heightened risk aversion and deleveraging due to the euro area crisis that impacted financial markets across emerging market economies (EMEs).
- Apart from the global factors, there were several domestic factors that have added to the weakening trend of the rupee, which include increasing CAD and high inflation.

Exchange Rate of Other Emerging Economies

- Currency depreciation during 2011-12 was not specific to India. The currencies of other emerging economies, such as the Brazilian real, Mexican peso, Russian rouble, South Korean won, and South African rand, also depreciated against the US dollar, reflecting the increased demand for the US dollar as a safe haven asset in the wake of the sovereign debt crisis in the euro zone.

Nominal Effective Exchange Rate (NEER) and Real Effective Exchange Rate (REER)

- The NEER and REER indices are used as indicators of external competitiveness of the country over a period of time.
- NEER is the weighted average of bilateral nominal exchange rates of the home currency in terms of foreign currencies,
- While REER is defined as a weighted average of nominal exchange rates, adjusted for home and foreign country relative price differentials.
- REER captures movements in cross-currency exchange rates as well as inflation differentials between India and its major trading partners.
- The RBI has been constructing six-currency (US dollar, euro for euro zone, pound sterling, Japanese yen, Chinese renminbi, and Hong Kong dollar) and 36-currency NEER and REER indices.

External Debt

- At end March 2011, India's external debt stock was US\$ 306.4 billion (Rs. 13,68,477 crore) recording an increase of US\$ 45.4 billion (17.4 per cent) over the end March 2010 level of US\$ 261.0 billion (Rs. 11,78,994 crore).
- This increase was primarily on account of higher commercial borrowings and shortterm debt, which together contributed over 80 per cent of the total increase in external debt. The rise in short-term trade credits is in line with the increase in imports associated with reasonably strong domestic economic activity.
- Under long-term debt, components such as commercial borrowings, NRI deposits, and multilateral borrowings taken together accounted for 61.3 per cent of total external debt at the end of September 2011 while other long-term debt components (bilateral borrowings, export credit, IMF, and rupee debt) accounted for 16.8 per cent. Thus long-term debt, taking into account all

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the components, accounted for 78.1 per cent of total external debt,

- The currency composition of India's total external debt shows that the share of US dollar denominated debt was the highest in external debt stock at 55.8 per cent at end September 2011, followed by Indian rupee (18.2 per cent), Japanese yen (12.1 per cent), SDR (9.1 per cent), and euro (3.5 per cent).
- The currency composition of government (sovereign) debt indicates predominance of SDR denominated debt (37.3 per cent), which is attributable to borrowing from the IDA, i.e. the soft loan window of the World Bank under the multilateral agencies, and SDR allocations by the IMF.
- The share of US dollar-denominated debt was 26.5 per cent followed by Japanese yen denominated (19.9 per cent).
- Over the years, India's external debt stock has witnessed structural change in terms of composition. The share of concessional in total debt has declined due to the shrinking share of official creditors and government debt and the surge in non-concessional private debt.
- The rising share of nongovernment debt is evident from the fact that such debt accounted for 65.6 per cent of total debt during the 2000s vis-a'-vis 45.3 per cent in the 1990s.
- India's external debt has remained within manageable limits as indicated by the external debt to GDP ratio of 17.8 per cent and debt service ratio of 4.2 per cent in 2010-11.

International Comparison

- A cross-country comparison of external debt of twenty most indebted developing countries, based on the data given in the World Bank's Global Development Finance 2012 which contains the debt numbers for the year 2010 and has a time lag of two years, showed that India was the *fifth* most indebted country, after the China, the Russian Federation, Brazil, and Turkey in 2010 in terms of stock of external debt.
- The ratio of India's external debt stock to gross national income (GNI) at 16.9 per cent was fourth lowest, with China having the lowest ratio at 9.3 per cent.
- In terms of the cover of external debt provided by foreign exchange reserves, India's position was fifth highest at 103.5 per cent after China, Thailand, Malaysia, and Russia.
- A comparison of the share of short-term debt in total external debt across countries reveals that India's position was eighth lowest, with Pakistan having the lowest ratio.

HUMAN DEVELOPMENT

Introduction

The Census projection report shows that the proportion of working age population between 15 and 59 years is likely to increase from approximately 58 per cent in 2001 to more than 64 per cent by 2021. In absolute numbers, there will be approximately 63.5 million new entrants to the working age group between 2011 and 2016. Further, it is important to note that the bulk of this increase is likely to take place in the relatively younger age group of 20-35 years. Such a trend would make India one of the youngest nations in the world. In 2020, the average Indian will be only 29 years old. Comparable figures for China and the US are 37, 45 for West Europe, and 48 for Japan. This 'demographic dividend' provides India great opportunities, but it also poses a great challenge. It will benefit India only if our population is healthy, educated, and appropriately skilled. Therefore, greater focus on human and inclusive development is necessary to best utilize the demographic dividend.

Human and Gender Development

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- The Human Development Report (HDR) published by the United Nations Development Programme (UNDP) estimates the HDI in terms of three basic capabilities: to live a long and healthy life, to be educated and knowledgeable, and to enjoy a decent economic standard of living.
- According to HDR 2011, the HDI for India was 0.547 in 2011 with an overall global ranking of 134 (out of the 187 countries) compared to 119 (out of 169 countries) as per HDR 2010. However, a comparable analysis of the trends during 1980-2011 shows that although lower in HDI ranking, India has performed better than most (including high and very high human development) countries in terms of average annual HDI growth rate. India is behind only China and Bangladesh in this regard. If average annual HDI growth of 2000-11 is viewed, India (1.56 per cent) is even ahead of China (1.43 per cent).
- While China performed very well in terms of growth of HDI in the 1980s, there was a deceleration in the 1990s and 2000s. On the other hand India, which seems to have faltered in the 1990s, has picked up again with its growth rates during 2000-11 surpassing even those of the 1980s.
- However, there should be no room for complacency as India is still in the medium human development category with countries like China, Sri Lanka, Thailand, Philippines, Egypt, Indonesia, South Africa, and even Vietnam having better overall HDI ranking within the same category.
- The existing gap in health and education indicators as compared to developed countries and also many of the developing countries indicates the need for much faster and wider spread of basic health and education.
- Life expectancy at birth in India was 65.4 years in 2011 as against 81.1 years in Norway, 81.9 years in Australia, 74.9 years in Sri Lanka, 73.5 years in China, and the global average of 69.8 years. However, it has increased by one percentage points from 64.4 in 2010 to 65.4 in 2011. The other countries referred to are almost stagnant during this period.
- Similarly, the performance of India in terms of mean years of schooling is not only much below that of countries like Sri Lanka, China, and Egypt which have higher per capita incomes but also below that of Pakistan, Bangladesh, and Vietnam which have lower per capita incomes. It is also much lower than the global average.
- The National Human Development Report (NHDR) 2011 of the Institute of Applied Manpower Research and Planning Commission states that India's HDI between 1999-2000 and 2007-8 has increased by 21 per cent, with an improvement of over 28 per cent in education being the main driver.
- In terms of the gender inequality index (GII), India with a value of 0.617 ranks 129 out of a total of 187 countries as per HDR 2011. The GII captures the loss in achievement due to gender disparities in the areas of reproductive health, empowerment, and labour force participation with values ranging from 0 (perfect equality) to 1 (total inequality). The GII value of 0.617 indicates a higher degree of gender discrimination in India compared to countries like China (0.209), Pakistan (0.573), Bangladesh (0.550), Bhutan (0.495), and Sri Lanka (0.419). It is even higher than the global average 0.492.

Inclusive Development

- Inclusive development can be viewed in terms of progress in social and financial inclusion.
- Central government expenditure on social services and rural development (Plan and non- Plan) has consistently gone up over the years. It has increased from 13.38 per cent in 2006-7 to 18.47 per cent in 2011-12.

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Poverty

- The Planning Commission, the nodal agency for estimating the number and proportion of people living below the poverty line at national and state levels, separately for rural and urban areas, makes poverty estimates based on a large sample survey of household consumption expenditure carried out by the National Sample Survey Office (NSSO) approximately every five years. The methodology for estimation of poverty has been reviewed from time to time.
- The Planning Commission constituted an Expert Group under the Chairmanship of Professor Suresh D. Tendulkar in December 2005, which submitted its report in December 2009. The recomputed poverty estimates for the years 1993-4 and 2004-5 as recommended by the Tendulkar Committee have been accepted by the Planning Commission. As per the Tendulkar Committee Report, the national poverty line at 2004-5 prices was a monthly per capita consumption expenditure of Rs. 446.68 in rural and Rs. 578.80 in urban areas in 2004-5. The above poverty lines which refer to the national average, vary from state to state because of price differentials.
- The Tendulkar Committee has mentioned in its report that the proposed poverty lines have been validated by checking the adequacy of actual private expenditure per capita near the poverty lines on food, education, and health by comparing them with normative expenditures consistent with nutritional, educational, and health outcomes.
- In order to have a two-point comparison of changes in head count ratio, the Expert Group has re-estimated poverty for 1993-4. The head-count ratios for 1993-4 and 2004-5 as released earlier by the Planning Commission and using the Tendulkar methodology, are given in Table 13.5.
- Even though the Tendulkar methodology gives higher estimates of headcount ratios for both 1993-4 and 2004-5, the extent of poverty reduction is 8.1 percentage points which is not very different from the reduction of 8.5 percentage points during the same period as per Lakdawala Methodology.

Financial Inclusion in North Eastern States

- The North Eastern Region (NER) covers 8 per cent of the geographical area of the country, accounting for 3.9 percent of the population and 2.7 per cent of the all-India net domestic product (NDP).
- Prior to nationalization of banks in 1969, no bank branch of commercial banks existed in Arunachal Pradesh and Mizoram.

Inequality

- According to HDR 2011, inequality in India for the period 2000-11 in terms of the income Gini coefficient was 36.8. India's Gini index was more favourable than those of comparable countries like South Africa (57.8), Brazil (53.9), Thailand (53.6), Turkey (39.7), China (41.5), Sri Lanka (40.3), Malaysia (46.2), Vietnam (37.6), and even the USA (40.8), Hong Kong (43.4), Argentina (45.8), Israel (39.2), and Bulgaria (45.3) which are otherwise ranked very high in human development.

Employment

- For growth to be inclusive it must create adequate livelihood opportunities and add to decent employment commensurate with the expectations of a growing labour force.
- The Eleventh Five Year Plan (2007-12) aimed at generation of 58 million work opportunities.

Employment in the Organized Sector

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- Employment growth in the organized sector, public and private combined, has increased by 1.9 per cent in 2010, which is lower than the annual growth for the previous year.
- The annual growth rate for the private sector was much higher than that for the public sector.
- However, in respect of both sectors, annual increase in employment had slowed down in 2010 vis-à-vis 2009.
- The share of women in organized-sector employment was 20.4 per cent in 2010 March end and has remained nearly constant in recent years.

Socio-economic Profile of the States and Inter-state Comparisons

- The rank correlation between the ranking of the states by HDI in 1999-2000 and in 2007-8 as given in NHDR 2011 is extremely high (0.97), which suggests that almost same states have performed well in both the time periods and likewise for the worst performing states. The top five ranks in both the years go to the better performing states of Kerala, Delhi, Himachal Pradesh, Goa, and Punjab. At the other end of the spectrum are the eight relatively poorer states which are below the national average HDI of 0.47. Among them Bihar, Chhattisgarh, and Rajasthan have slipped in their rankings in 2007-8, while Assam and Jharkhand have improved theirs. What is noteworthy is that the seven north-eastern states excluding Assam (taken together) have done remarkably well in terms of human development outcomes. Over the eightyyear period, this group has moved up by three ranks.
- The best performer in terms of growth in 2009-10 was Uttarakhand, followed by Odisha, Chhattisgarh, and Gujarat and the worst performers were Karnataka, Rajasthan, and Jharkhand. States with above 10 per cent growth rate for the period 2004-5 to 2009-10 are Uttarakhand, followed by Maharashtra, Gujarat, and Bihar.
- The state-wise estimates of poverty as recomputed by the Tendulkar Committee show that the highest poverty headcount ratios (PHRs) for 2004-5 exist in Odisha (57.2 per cent), followed by Bihar (54.4 per cent) and Chattisgarh (49.4 per cent) against the national average of 37.2 per cent.
- The unemployment rate (per 1000) according to usual status(adjusted) as per the NSS 66th round 2009-10 among the major states is lowest in Rajasthan(4) and highest in Kerala(75) in rural areas and the lowest in Gujarat(18) and highest again in Kerala(73) and Bihar(73) in urban areas.
- Health-wise, Kerala is the best performer and Madhya Pradesh the worst in terms of life expectancy at birth(both male and female) during 2002-6. IMR in 2010 is also the lowest in Kerala and highest in Madhya Pradesh. Kerala has the lowest and Uttar Pradesh the highest birth rate in 2010, followed by Bihar and Madhya Pradesh. Odisha has the highest and interestingly West Bengal the lowest death rate.
- In the area of education, Madhya Pradesh has the highest GER (6-13 years) in 2008-9 while Punjab has the lowest. Pupil-teacher ratios in primary and middle/basic schools are the lowest in Himachal Pradesh and high in states like Bihar and Uttar Pradesh.
- The percentage of households provided employment under the MGNREGA in 2010-11 is the highest in Uttar Pradesh and lowest in Haryana. Progress in terms of 24x7 primary health centres (PHCs) under the National Rural Health Mission (NRHM) as on September 2011 is the highest in Tamil Nadu and lowest in Jharkhand. Bihar, followed by Uttar Pradesh, has the highest percentage share of total houses constructed during 2010-11 under the IAY while Himachal Pradesh has the lowest.

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SOCIAL SECTOR INITIATIONS

1. FOOD & PUBLIC DISTRIBUTION

The National Food Security Bill was introduced in the Parliament to provide for food and nutritional security, by ensuring access to adequate quantity of quality food at affordable prices.



To strengthen the public distribution system, modernization and end-to-end computerization has been accorded top priority. States/UTs have taken several measures towards digitization of beneficiary database, fair price shop automation, computerization of supply chain, and creation of grievance redress mechanism. Steps have been taken to create additional storage capacity in the country for food grains. 2 million tonnes of storage capacity will be created in the form of modern silos. Nearly 15 million tonnes capacity is being created under the Private Entrepreneur's Guarantee Scheme.

INITIATIVES TAKEN IN RURAL AREAS

PANCHAYATI RAJ

A. Backward Regions Grant Fund

During 2011-12, ₹ 3917 crore was released under the Backward Regions Grant Fund which is being implemented through panchayats and urban local bodies.

B. e-Governance for Panchayati Raj Institutions

To make panchayats more transparent, accountable and effective, a wide range of web based applications have been rolled out under e-Panchayat - an e- Governance project for panchayati raj institutions. More such applications are scheduled to be launched soon. Over 65,000 panchayats are using PRIASoft, a web-based accounting software and over 75,000 plans

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of different urban local bodies, rural local bodies and line departments are available online on the PlanPlus application.

INITIATIVES TAKEN TO IMPROVE INDIAN ECONOMY

NATIONAL MANUFACTURING POLICY

The National Manufacturing Policy was announced this year, with the specific objectives of enhancing share of manufacturing in GDP to 25% by 2022, creation of an additional 100 million jobs, setting up of National Investment and Manufacturing Zones, increasing the level of domestic value addition and enhancing global competitiveness and making India an international manufacturing hub.

INITIATIVES TAKEN TO SUSTAINING THE ENVIRONMENT

NATIONAL ACTION PLAN ON CLIMATE CHANGE

The National Action Plan advocates a strategy that promotes, firstly, the adaptation to Climate Change and secondly, further enhancement of the ecological sustainability of India's development path. The eight missions under the PM's Council on Climate Change are the Jawaharlal Nehru National Solar Mission, the National Water Mission, the National Missions on Enhanced Energy Efficiency, Sustainable Habitat, and Strategic Knowledge for Climate Change, and the National Missions for Sustaining the Himalayan Ecosystem, a Green India and Sustainable Agriculture.

TIGER CONSERVATION

A detailed report on the country level status of tigers, co-predators and prey in India was released in July, 2011. This was the second round of country level snapshot assessment.

The earlier estimation made in 2006 indicated that there were 1411 tigers in the country; the current estimates show that this number has increased by about 20% to 1706.

INITIATIVE TAKEN TO IMPROVE

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THE GOVERNANCE SYSTEM

ANTI-CORRUPTION MEASURES

The Group of Ministers (GoM) set up in January 2011 to consider measures to tackle corruption has submitted two reports. Government has accepted the recommendations of the Group with minor modifications. In pursuance of this, Government has directed that requests for sanction of prosecution are to be decided upon by the competent authority within a period of three months. Government decided that for all officers of the central government above the rank of Joint Secretary, the competent authority to approve initiation of enquiry/investigation under Section 6A of the Delhi Special Police Establishment Act will be the Minister-in-charge in the Government of India. Government has also accepted the recommendation of the GoM to put in place regulatory parameters for exercise of discretionary powers by Ministers and to place them in public domain.

A comprehensive 'Lokpal and Lokayuktas Bill, 2011' was passed by the Lok Sabha this year. 'The Whistle Blowers Protection Bill 2011' intended to provide protection to whistle-blowers, was passed by the Lok Sabha and is presently with the Rajya Sabha. India ratified the United Nations³ Convention Against Corruption in May, 2011. The Convention has entered into force for India on 8th June 2011. With a view to ensuring full compliance with this Convention, 'The Prevention of Bribery of Foreign Public Officials and Officials of Public International Organizations Bill 2011' was introduced in the Lok Sabha. The Report of the Parliamentary Standing Committee on the Bill is under consideration of the Government.

INITIATIVE TO IMPROVE BETTER RELATIONS WITH FOREIGN COUNTRIES

GLOBAL ISSUES

India hosted the Fourth BRICS Summit in New Delhi, and took over the Chairmanship of the Group. Highlights of the Summit included a decision by the leaders to examine the feasibility of setting up a BRICS Development Bank. India played an active role as a nonpermanent member of the United Nations Security Council. Under India's Chairmanship, the Security Council's Counter-Terrorism Committee adopted a document at a Special Meeting in September 2011 that introduced into the UN lexicon the concept of 'zero tolerance' for terrorism and support to terrorist actions. India became a founding member, along with 29 other countries, of the Global Counter Terrorism Forum which was launched in New York in September 2011. During its presidency of the Security Council in August 2011, India organized a thematic debate on UN Peacekeeping that highlighted the critical importance of consulting troop contributing countries in decisions related to mandates of peacekeeping missions. Along with other like-minded countries, India launched a major initiative to build support for an expansion of the UN Security Council in both permanent and non-permanent categories of membership. India continued to contribute to global efforts to

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strengthen nuclear security and reduce the threat of nuclear terrorism.

Prime Minister Dr. Manmohan Singh attended the Second Nuclear Security Summit in Seoul in March 2012. In the G-20 process, India emphasized the development dimension and the need for promoting global economic growth.

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INDIA—WEST ASIA

INDIA – ISRAEL RELATIONS

Political Relations

On 17 September 1950, India announced recognition of Israel. Soon after India's recognition of Israel, the Jewish Agency established an immigration office in Bombay. This was converted into a Trade Office and later a Consulate. Following decision to establish diplomatic relations, Israel opened its Embassy in Delhi in February 1992 and India opened its Embassy in Tel Aviv on 15 May 1992. Since then relations have seen rapid growth across a broad spectrum.

Bilateral

2012 marks the 20th anniversary of the establishment of full diplomatic relations between India and Israel. The relationship has thrived on the common bedrock of parliamentary democracy, Common Law structures, liberal system of education, knowledge of the English language and a history of British colonial rule. The relationship also benefitted from similar strengths in the knowledge industry and highly qualified scientific and technical manpower. The long and peaceful Jewish presence in India and presence of 70,000 Indian Jews in Israel further made things easier. India is a destination of choice for over 35,000 Israelis who visit India every year for tourism and business.

Bilateral Visits

Since the establishment of Embassies, a large number of ministerial visits have taken place. The period since 1992 has been utilized to put in place the framework of normal state-to-state relations, including agreements and MOUs in diverse areas of cooperation. Important high level recent visits include the following:

From Israel

Minister of Agriculture and Rural Development Shalom Simhon (January 2008);
Minister of Industry, Trade and Labour Binyamin Ben Eliezer (January 2010); Minister of Agriculture Orit Noked (May 2011);
Minister of Tourism Stas Misezhnikov (September 2011);
Minister of Internal Security Yitzhak Aharonovitch (October-November 2011); Minister of Finance Yuval Steinitz (December 2011);
Minister of Energy & Water Resources, Uzi Landau (February 2012);

From India

Justice K G Balakrishnan, Chief Justice of India (December 2008); Chief Minister of Punjab, Parkash Singh Badal (November 2009)
Chief Minister of Himachal Pradesh Prem Kumar Dhumal (November 2009); Minister of State for Commerce and Industry, Jyotiraditya Scindia (February 2010); Minister of State (I/C) Science & Technology Prithviraj Chavan (March 2010);
Chief Minister of Haryana Mr. Bhupinder Singh Hooda (April 2011);
Comptroller and Auditor General Vinod Rai (May 2011);
Minister of State for Communications and IT Mr. Sachin Pilot (June 2011)

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RBI Governor D. Subbarao (June 2011); Group
of Indian MPs (November 2011);
External Affairs Minister Shri S.M. Krishna (January 2012) Minister of
Urban Development Shri Kamalnath (February 2012)

Visit of External Affairs Minister Shri S.M. Krishna to Israel in 2012

External Affairs Minister Shri S.M. Krishna visited Israel on January 9-10, 2012 against the backdrop of 20th anniversary of diplomatic relations between India and Israel. EAM met President Peres, Prime Minister Netanyahu, and the Ministers of Foreign Affairs and Finance. He reviewed bilateral cooperation, recent developments in South Asia and the Middle-East and charted out areas of cooperation for the future including in energy, trade, agriculture and human resource development.

EAM and his counterpart signed an Extradition Treaty and an Agreement for Transfer of Sentenced Persons. He announced approval of Government of India for opening of a Consulate General of Israel in Bengaluru. EAM visited the Indian Hospice in Jerusalem and announced a special grant of US\$ 25,000 by the Government of India for setting up a Baba Farid Heritage Centre at the Indian Hospice.

Commercial and Economic Relations

Since establishment of diplomatic relations in 1992, bilateral trade and economic relations have progressed rapidly. From a base of US\$ 200 million in 1992 (comprising primarily of diamonds), merchandise trade has diversified and reached US\$ 5.15 billion in 2011. In 2011, India was the 8th largest trade partner of Israel in the world, and 3rd largest trade partner in Asia following China and Hong Kong (trade data includes diamonds). Although bilateral trade increased in 2011, as compared to 2010, India's position among Israel's trading partners fell from sixth to eighth. India is the 11th largest import source of Israel including diamonds, and 16th largest import source excluding diamonds (in Jan-Dec 2011). India is the 5th largest export destination of Israel (including diamonds) and 7th largest excluding diamonds (Jan-Dec 2011).

India-Israel two-way trade in 2011 increased by 8.8% from US\$ 4.73 billion in January- December 2010 to US\$ 5.15 billion in January-December 2011. However balance of trade was in Israel's favor by US\$844 million. Although India's exports to Israel in areas other than diamonds increased over the years, diamonds continue to be an important segment at 56.4% of total bilateral trade in 2011 (US\$ 2.91 billion out of US\$ 5.153 billion). Major exports from India to Israel include precious stones and metals, chemical products, textile and textile articles, plants and vegetable products, mineral products, rubber and plastic products, base metals and machinery. Major exports from Israel to India include precious stones and metals, chemical and mineral products, base metals, machinery, and transport equipment

Free Trade Agreement

A Free Trade Agreement is currently under negotiations between the two countries.

Investment

According to figures released by the Department of Industrial Policy & Promotion (Government of India), FDI inflows from Israel to India from April 2000 to April 2011 totalled US\$ 53.24 million placing it at 39th rank (0.04% of total FDI inflows to India).

While the traditional business thrust in diamonds, agriculture, chemicals, information & communication technology and pharmaceuticals remains strong, there is a growing interest from

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Israeli companies in doing business in other sectors. Israeli companies have invested in India in energy (Leviathan Energy) renewable energy (Focal Energy), telecom (Tower Vision) real estate (Levinstein), water technologies (Tahal and Nisko Ardan). Israeli companies are focusing on setting up Research and Development (R&D), development centres or production units in India.

Indian companies are marking their presence in Israel through mergers and acquisitions and by opening branch offices. TCS started operation in Israel in 2005. State Bank of India opened a branch in Tel Aviv in 2007. The first major acquisition occurred in 2007 when Jain Irrigation of India purchased 50% stake in Naan-Dan, a major Israeli irrigation equipment manufacturing company. India's Sun Pharma has 65.2% stake in Israel's Taro Pharmaceutical Industries (as of Nov 2010). In 2009 Israeli companies were acquired by India's telecom companies Tejas Networks and Connectiva Systems.

Agriculture

In December 1993 India and Israel signed a bilateral agreement for cooperation in the area of agriculture. Under the agreement the first Joint Committee was set up 2006 and an inter-Governmental "Work Plan" outlining cooperative activities was signed the same year. The Work Plan was followed by an Action Plan 2008-2010 under which projects have been undertaken with help of experts from Israel in Haryana, Maharashtra, Rajasthan and Gujarat. As part of the Action Plan, a Center of Excellence for fruits at Sirsa, Haryana will be inaugurated in 2012. A Center of Excellence for vegetables is functional at Karnal. A Joint Declaration was signed in May 2011 by Agriculture Ministers of the two countries. A bilateral Action Plan for the period 2012- 2015 has been finalized for projects in Haryana, Maharashtra, Karnataka, Rajasthan, Gujarat, Tamil Nadu and Punjab. In Maharashtra, Israel proposes to set up Centers of Excellence for Mango, Citrus and for Pomegranate respectively. India has benefited from Israeli expertise and technologies in horticulture mechanization, protected cultivation, orchard and canopy management, nursery management, micro-irrigation and post-harvest management particularly in Haryana and Maharashtra. India-Israel Action Plan for second phase has been finalized for implementation from April 2012 to 2015 in the States of Haryana, Maharashtra, Karnataka, Rajasthan, Gujarat, Tamil Nadu and Punjab.

Located in one of the world's most arid regions, Israel has developed novel and efficient water technologies for waste water management, recycling of waste water, desalination, water security, and water conservation. Local water know-how and technology is exported to more than 100 countries. With a 75% water recycling rate, Israel is the world's number one waste water recycler and home to the world's largest Seawater Reverse Osmosis (SWRO) desalination plant, annually producing 100 million m³ of water at the low cost of about US\$ 0.52 per m³ of water. India's companies and official delegations regularly visit the annual event WATEC in Israel which showcases Israel's water and energy technologies.

Some Israeli companies and experts are providing their expertise to manage and improve dairy farming in India given their expertise in high milk production of milch animals in hot climatic conditions and genetic engineering. Jain Irrigation Company purchased 50% stake in Israel's Naan-Dan Irrigation in 2007 and became the world's second largest irrigation company. Israel-based Netafim is the second biggest player in India in micro-irrigation and sprinklers, with a 15% market share. Indian official and business delegations regularly attend Israel's triennial event Agritech which showcases Israel's achievements in agriculture. The 18th International agricultural Exhibition (Agritech 2012) will be held on May 15-17, 2012 in Tel Aviv.

Cooperation in Science & Technology

India-Israel cooperation in science and technology has evolved on two tracks. There is joint research by S&T institutions under S&T Cooperation Agreement signed in 1993. Secondly under an MOU on Industrial Research and Development Initiative (IIRD) signed on May 30, 2005 between Department of

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Science & Technology, India and Ministry of Industry, Trade & Labor, Israel a joint industrial R&D fund “i4RD” has been set up to promote bilateral industrial R&D and specific projects. Under i4RD mechanisms have been created to fund for joint projects by the industry, involving at least one Indian and one Israeli company.

Other Training Programmes

The Centre for International Cooperation with Israeli Foreign Ministry (MASHAV) has conducted training programmes in diverse fields including health, agriculture, education and management.

Culture & Tourism

India is known in Israel as an ancient nation with strong cultural traditions, and in popular Israeli perception India is an attractive, alternative tourist destination. Israeli youth are particularly attracted to India. About 35,000 Israelis, mostly youth, after finishing military service, visit India annually. The level of understanding of and knowledge about India is growing, in some measure as a result of India's economic advancement and image as an important centre for hitech. There is also an abiding interest in Indian culture, which is promoted with a variety of dance, music, traditional arts, crafts and cinema. Courses related to India are taught at the Tel Aviv University, Hebrew University and Haifa University. India has an MoU with Tel Aviv University to set up a Rotating Chair for Indian studies in the Department of East and South East Asian Studies. Hindi is taught at Tel Aviv University and Hebrew University. Seven ICCR scholarships and some Know India Scholarships of Ministry of Overseas Indian Affairs are granted to Israelis every year. A new Cultural Exchange Programme is being negotiated by the two sides. The first ever month long cultural festival of India in Israel entitled ‘Celebrating India in Israel’, produced by the Indian Embassy along with Teamwork Productions which brought together contemporary and classical Indian culture in all its aspects was held in May 2011. The festival was a huge success. A similar Festival of India is planned in May 2012 in Tel Aviv, Jerusalem, and Haifa.

Civil Aviation Links

An Air Services Agreement was signed in April 1994. The Israeli national carrier “El-Al” Airlines currently flies four times a week from Mumbai to Tel Aviv.

Indian Banks, PSUs, Tourist offices, etc.

State Bank of India opened its branch in March 2007. It is located in Diamond Exchange in Ramat Gan.

Indian Community- NRI/ PIO

There are approximately 70,000 Jews of Indian origin in Israel, most of whom are Israeli nationals. The main waves of immigration into Israel from India took place in the fifties and sixties. The majority is from Maharashtra (Bene Israelis) and smaller numbers are from Kerala (Cochini Jews) and Kolkata (Baghdadi Jews). The older generation still maintains an Indian lifestyle and their cultural links with India remain intact, while the younger generation is increasingly assimilated into Israeli society. They are mostly engaged in agriculture or work in the new development towns outside the traditional urban centers.

This community is playing an important role in the development of this country. They are considered to be hard-working, skilful, reliable and a responsible community that has contributed not only in agriculture but also as an effective workforce in many of Israel's industries. A number of members of the community are active in social and political fields. Some entrepreneurs are also successful as restaurateurs, mainly serving Indian food. A few Indians have made a mark in the area of medicine

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and agricultural science. Jews from Cochin have contributed immensely to desert farming in Israel by adopting modern technology. Mr. Eliyahu Bezael hailing from Chennamangalam, Cochin has distinguished himself as an eminent agriculturalist. He also became the first Israeli of Indian origin to receive the “Bhartiya Pravasi Samman” for the year

2005. The resident Indian community of about 700 Indian citizens includes diamond traders, some IT professionals, students and unskilled workers. There are also about 6,000 unskilled workers mainly employed as care-givers. There is a Central Organization of Indian Jews, which brings together a large section of Indian Jews.

INDIA – SYRIA RELATIONS

Political

India and Syria enjoy friendly political relations based on historic and civilizational ties, experience of imperialism and of being colonized, a secular, nationalist and developmental orientation, similar perceptions on many international and regional issues and membership of NAM, positive sentiments towards India at the popular level, and India's traditional support for just Arab causes notably the Palestinian cause and for the return of the occupied Golan Heights to Syria. Mahatma Gandhi, Tagore, Nehru and Indira Gandhi are remembered with great respect.

President H.E. Pratibha Singh Patil paid a state visit to Syria from 26-29 November, 2010: She was accompanied by Union Minister of State for Power Shri Bharatsinh Solanki, two Members of Parliament, senior officials and a large business delegation. This was the first Presidential visit from India to Syria and was a highly successful one. During the visit, an offer of credit line of \$100 million was made by India to Syria. A contribution of 2 million Syrian Pound was made to a Syrian NGO- AAMAL and over 1 million Syrian Pounds to Missionaries of Charity, Aleppo.

The number of scholarships offered to Syria under the ITEC programme was increased from 45 to 90. Two MOU's for cooperation in the field of Media and a Cultural Exchange Programme were signed during the visit. The India-Syria Joint Business Council was launched. Syria reiterated its support for India's permanent membership of UNSC. Syrian Deputy Foreign Minister Dr. Fayssal Mikdad visited India in July-August, 2011.

Economic & Commercial

India-Syria economic relations have bright prospects. The high level visits from both sides in recent years have enhanced the desire to further enhance bilateral economic relations. The

1st Meeting of the India Syria Joint Commission was held in New Delhi in January 2008. The 2nd Session of the Joint Commission was held in Damascus in June 2010, with the Indian co- Chairman being Commerce and Industry Minister and the Syrian one being Minister of Trade and Economy. Some of the bilateral cooperation projects that have been implemented or are being implemented in the last few years are:

- (i) A US \$ 25 million credit line has been extended by India for the rehabilitation and modernization of the Hama Iron & Steel Plant. Apollo International had won the contract for the project through an international tender earlier for the same project. The project is under execution.
- (ii) India has extended another credit line of US\$ 100 million (first tranche of US\$ 240 m credit) to part finance the extension of the Tishreen Power Plant. Indian public sector company, BHEL has signed the contract in October 2009 for installing 2X200 MW power plants and the project is underway.
- (iii) India-Syria Centre of Excellence in IT has been set up at Damascus with the assistance from

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Government of India. The Centre was inaugurated in December, 2010 by the PM of Syria and is running successfully.

- (iv) India is assisting Syria in carrying out a feasibility study on augmentation of its phosphate production. A consortium of Indian companies, comprising of PDIL, RITES and MECON is carrying out the study. The Draft Feasibility Report (DFR) has been submitted to the Syrian side and the final report is under completion.
- (v) India has extended US\$ 1 million assistance for the setting up of Biotechnology Centre in Syria; the Centre was inaugurated during PM Vajpayee's visit in 2003.
- (vi) An MOU on Cooperation in fertilizer sector was concluded in October 2010. The MOU will facilitate Indian involvement in the development of phosphatic fertilizer sector in Syria.
- (vii) India has two significant investments in Syria in the oil sector. Firstly, an agreement signed in January 2004 between ONGC and IPR International for exploration of oil/ natural gas in Block 24 near Deir-e-Zor in northern Syria. Secondly, investment by ONGC India and CNPC China to jointly acquire the 37% stake of PetroCanada in the Syrian Al Furat Petroleum Company.
- (viii) Himalaya Herbals has a joint venture providing technical know-how and materials for manufacture and marketing of herbal drugs and cosmetics in Syria.
- (ix) Mahindra & Mahindra has signed a 10 year contract with M/s Al Furat Tractor Company for supply of tractors with a provision for joint venture assembly in the future that could amount to over Euro 30 million.

Bilateral Double Taxation Avoidance Agreement and the Bilateral Investment Promotion & Protection Agreement have been signed in June 2008 during the visit of President Bashar Al Assad to India and have come into force from 2009. An MOU for cooperation in agriculture and allied sectors has been signed. The MOU provides for a Work Plan and a Working Group. The Work Plan is in place and has been renewed up to November, 2011. Syria- India Joint Business Council (JBC) was inaugurated in November, 2010 during the visit of Presidential visit. The JBC is headed by Mr. V.R.S. Natarajan, CMD, BEML from the Indian side and Mr. Ali Mehran Khwanda of Khwanda Group from the Syrian side.

Major commodities of Export to Syria

Textiles and yarn, petroleum products, transport equipment, machinery & instruments, drugs, pharmaceuticals & fine chemicals.

Major commodities of Import from Syria

Petroleum, crude & products and minerals, machinery except electric & electronic, leather, pearls, precious and semi-precious stones.

INDIA—NORTH EAST ASIA

INDIA – JAPAN RELATIONS

It is something unique that India's relations with Japan are singularly free of any kind of dispute - ideological, cultural or territorial. It is one of warmth emanating from generous gestures and sentiments, of standing by each other at times of need. Exchange between Japan and India is said to have begun in the 6th century A.D., when Buddhism was introduced to Japan. Indian culture, filtered through

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Buddhism, has impacted on Japanese culture and thought, and this is the source of Japanese people's sense of closeness with India. Direct exchange in the modern era, however, began only in the Meiji era (1868-1912), when Japan embarked on the process of modernization. Japan's image in India has historically been positive, going back to the early 20th century when its emergence as a big power was interpreted by India as the beginning of Asian resurgence. Japanese support and assistance to Netaji Subhash Chandra Bose and the Indian National Army (INA) continue to shape popular thinking about Japan.

The immediate post independence experience was no less positive, with the Tokyo tribunal, waiving of reparations, conclusion of a separate Peace Treaty, the Asian Games and extension of yen loans. This spirit was visible as well in 1991, in Japan's support during India's balance of payments crisis. In 1949 Prime Minister Jawaharlal Nehru gifted an Indian elephant to the Ueno Zoo, in Tokyo. This brought a ray of light into the lives of the Japanese children suffering from the aftermath of World War II. The elephant, named Indira after Nehru's daughter, died of old age in August 1983. Her death was widely covered in the Japanese Press.

In the collective Indian perception, there was a strong admiration for Japan's postwar economic reconstruction and subsequent rapid growth. This was reaffirmed a generation later by the unique role of Maruti-Suzuki in revolutionizing industrial technology and management concepts in the pre-economic reform India. Somewhere in Indian thinking was embedded respect for a society which engaged the world on its own terms and preserved its unique character through a process of upheaval and change. The intuitive feeling about Japan was one of friendliness and it was not without reason that Japan consistently ranked as the most admired nation in Indian newspaper polls for a number of years.

Popular goodwill in both societies has been a notable element in the relationship. In Japan, it is not uncommon to hear politicians refer warmly to India's declaration of mourning at the time of demise of the Showa Emperor. Japanese businessmen active in steel, textiles or trading are nostalgic as they recall their Indian connections during the reconstruction period. Even varied sections of the intelligentsia saw much good in our society - the traditionalists as the source of Buddhism, the philosophers and academics as a great intellectual tradition, the post war centre-left admired the Nehruvian approach, while the right wing still kept alive memories of the INA. Surprisingly, the most pervasive Indian presence was gastronomic, through a Japanese concoction known as 'curry rice'. Since diplomatic relations between Japan and India were established in 1952, the two countries have enjoyed cordial relations based on trade and economic and technical cooperation. The cultural agreement between Japan and India was signed in 1956 and took effect the following year. In 1951, India established a scholarship system for overseas students. This system to this day provides an opportunity for young Japanese scholars who are today in the forefront of Indian studies to study in India.

Cultural exchanges picked up in the 1980s, with Japanese local governments becoming involved in exchange activities with their Indian counterparts and traditional Indian performing arts being shown in Japan. The Japan Month was held in October to November 1987. Prime Minister Rajiv Gandhi attended the April 1988 opening ceremony of the Festival of India. In January 1994, the Japan Foundation opened an office in New Delhi that is actively engaged in cultural exchange since 1978. Japan has been extending cultural grant-in-aid to research institutes, universities, and cultural faculties to encourage their activities. In addition, through the UNESCO/Japan Trust Fund for Preservation of the World Cultural Heritage, Japan is helping with the preservation and restoration of the Buddhist monuments of Sanchi and Satdhara by sending experts and in other ways.

At the beginning of the 21st century, Japan and India resolved to take their bilateral relationship to a qualitatively new level. Both realize that the current international situation, characterized by inter-dependence and the advent of globalization, offers fresh opportunities to both

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Japan and India for enhanced engagement for mutual benefit. The foundation for this was laid when Mr. Yoshiro Mori, the then Prime Minister of Japan and Mr. Atal Behari Vajpayee, the then Prime Minister of India agreed during the Japanese Prime Minister's landmark visit to India in August 2000 to establish the "Global Partnership in the 21st Century".

Today, India and Japan share a global vision of peace, stability and shared prosperity, based on sustainable development. Shared democratic values and commitment to human rights, pluralism, open society, and the rule of law underpin the global partnership between the two countries. The global partnership between Japan and India reflects a broad convergence of their long-term political, economic and strategic interests, aspirations, objectives and concerns. Japan and India view each other as partners that have responsibility for, and are capable of, responding to global and regional challenges in keeping with their global partnership. A strong, prosperous and dynamic India is, therefore, in the interest of Japan and vice versa. In the above context and in view of the current international situation, it has been decided to reinforce the strategic focus of the global partnership between Japan and India.

Japan and India are partners in peace, with a common interest in and complementary responsibility for promoting the security, stability and prosperity of Asia as well as in advancing international peace and equitable development. It was agreed during the visit of then Japanese Prime Minister Junichiro Koizumi in April 2005 that the two countries would further strengthen their cooperation and pursue an all round and comprehensive development of bilateral relations, with a particular and urgent focus on strengthening economic ties, through full utilization of the existing and potential complementarities in their economies. It was decided that both the countries would strive to develop closer dialogue and collaboration to secure peace, stability and prosperity in Asia, promote democracy and development, and explore a new architecture for closer regional cooperation in Asia. It was also agreed that the two countries would strengthen cooperation in diverse areas such as environment, energy, disarmament, non-proliferation and security, taking advantage of, and further building on, their strategic convergences. Prime Minister Dr. Manmohan Singh paid an official visit to Japan from December 13 to 16, 2006 at the invitation of the then Prime Minister of Japan, Mr. Shinzo Abe. The visit took place against the backdrop of a marked upturn in India-Japan relations, particularly since former Prime Minister Koizumi's visit in 2005. During the visit, the two Prime Ministers launched the India- Japan Friendship Year 2007 and attended the inaugural event of the Festival of India in Japan on December 14, 2006. A Joint Statement - Towards India Japan Strategic and Global Partnership was signed by the two Prime Ministers.

The dynamic growth of this relationship is reflected in the number of high-level Ministerial and Parliamentary exchanges that have taken place in last two years.. There is a parallel process of business and industry in both countries taking note of the opportunities that recent economic developments in India have created for them. That has led to a very sharp increase in exchange of business delegations.

Former Prime Minister of Japan Mr. Shinzo Abe, accompanied by his spouse, Mrs. Akie Abe, visited India from August 21-23, 2007. A Joint Statement on "the Roadmap for New Dimensions to the Strategic and Global Partnership between India and Japan" and a Joint Statement on the Enhancement of Cooperation on Environmental Protection and Energy Security were signed. Mr. Abe visited Kolkata and attended the opening ceremony of the India - Japan Cultural Centre. Chief Minister of West Bengal called on Mr. Abe. PM Dr. Manmohan Singh visited Japan for the G-8 Summit from 7-9 July, 2008. He participated in the G-5 Leaders' meeting on 8 July, G-8, G-5 and MEM meetings on 9 July 2008 and a BRICs meeting on 9 July. He had a bilateral meeting PM Fukuda on 9 July.

PM Dr. Manmohan Singh paid an Official Working Visit to Tokyo from 21-23 October, 2008. This was Indian PM's second bilateral visit to Japan as Prime Minister, and was part of our regular annual summit which has been agreed between the two countries and which has been

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carrying on for the last four years actually. PM and Smt. Gursharan Kaur had an audience with Their Majesties the Emperor and the Empress of Japan. He held extensive talks with Prime Minister Mr. Taro Aso. Minister for Foreign Affairs and Minister for Economy, Trade and Industry called on PM. The New Komeito Party and the DPJ also called on PM. He had a breakfast meeting with Mr. Yoshiro Mori, former Prime Minister and

President of Indo-Japanese Association and Mr. Shinzo Abe, former PM. He attended a reception in his honour by the Japan-India Association and the Japan- India Parliamentary Friendship League. Former PM Mr. Yoshiro Mori, Former PM Mr. Yasuo Fukuda and Dr. Taro Nakayama, President of Japan-India Parliamentary Friendship League were present at the reception. PM addressed a business luncheon hosted by Nippon Keidanren. The second India- Japan Business Leaders' Forum was held and recommendations by the Forum were presented to the Prime Ministers. A Joint Declaration on Security Cooperation and a Joint Statement on the Advancement of Strategic and Global Partnership between India and Japan were signed.

EAM Shri S. M. Krishna visited Japan from 3-5 July, 2009 for the third EAM/FM level India-Japan Strategic Dialogue. He had a fruitful exchange of views with FM Nakasone on bilateral issues as well as various regional & international challenges. He also called on Prime Minister Taro Aso. During his visit, EAM also inaugurated the New Chancery Building of the Indian Embassy in Tokyo. Defence Minister Shri A. K. Antony visited Japan from 8-10 November, 2009 and met his Japanese counterpart Mr. Toshimi Kitazawa for a comprehensive review of Defence Cooperation issues. Japanese PM Yukio Hatoyama visited India for the Annual Summit Meeting from 27 to 29 December, 2009.

The 1st India-Japan 2+2 Dialogue, which was agreed by the Prime Ministers of both countries at the Annual Summit in December 2009, was held in New Delhi in July 2010. The two sides discussed non-traditional threats to security, anti-piracy operations in the Gulf of Aden and regional and international security situation. The negotiations on a Civil Nuclear Cooperation for the peaceful use of nuclear energy started in Tokyo in June 2010. On 21 August 2010, Japanese Foreign Minister Okada visited India to attend the 4th Japan-India Foreign Ministers' Strategic Dialogue. Japan and India reached agreement in principle in September 2010 on an Economic Partnership Agreement (EPA) to liberalize trade and services between the world's No. 2 economy

and the world's second most populous nation. The Prime Ministers of both countries have met several times in 2010. Prime Minister Dr. Manmohan Singh met with Prime Minister Hatoyama in April 2010 in Washington on the sidelines of the Nuclear Security Summit. Again, in June, Prime Minister Dr. Manmohan Singh met with newly-elected Prime Minister Naoto Kan on the sidelines of the G20 Summit in Toronto.

PM Dr. Manmohan Singh paid an Official Working Visit to Tokyo from 24-26 October, 2010 for the Annual Bilateral Summit. This landmark visit has imparted a further momentum and continuity to the India-Japan Strategic and Global Partnership. PM accompanied by Smt. Gursharan Kaur had an audience with Their Majesties the Emperor and the Empress of Japan. He also held extensive talks, both at restricted and delegation level, with Prime Minister Mr. Naoto Kan. Minister for Foreign Affairs and Minister for Economy, Trade and Industry of Japan called on PM. Opposition Leaders from Liberal Democratic Party, New Komeito Party and Your Party also called on PM. A Joint Statement "Vision for India-Japan Strategic and Global Partnership in the Next Decade" and a Joint Declaration on the India-Japan Comprehensive Economic Partnership Agreement (CEPA) were signed. On 16 February 2011, the Comprehensive Economic Partnership Agreement was signed by Minister of Commerce and Industry Mr. Anand Sharma and Japanese Foreign Minister Mr. Seiji Maehara.

In the wake of the devastation caused by the magnitude 9.0 earthquake and the subsequent tsunami on 11 March in north-eastern and eastern Japan, letters of condolence and sympathy were sent by PM and EAM to their counterparts in Japan. PM made a statement in Parliament on 14 March expressing 'full solidarity' for the people of Japan. Relief material consisting of 25,000 blankets, 10,000 bottles of

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mineral water and 10 tons of high-energy biscuits were sent to Japan. A 46-member Indian Relief and Rehabilitation Team from the National Disaster Management Authority was dispatched to Japan. The highly specialized team carried out relief operations in the coastal town of Onagawa, which came under the direct impact of tsunami waves. Their work has been much appreciated by the Japanese authorities, local people and the Japanese media.

Speaker of Lok Sabha Smt. Meira Kumar, accompanied by a Parliamentary delegation visited Japan from 2-6 October 2011 at the invitation of the Japanese Diet. During the visit, she visited Kobe, Hiroshima and Tokyo. In Kobe, she met with the small Indian community and interacted with them. In Hiroshima, she visited the Peace Memorial and the Peace Museum. In Tokyo, she had interactive meetings with the Speaker of the House of Representatives Mr. Takahiro Yokomichi, an audience with Their Majesties and a call on the Prime Minister Mr. Yoshihiko Noda. Under the Parliamentary exchanges programme between India and Japan, a delegation of India-Japan Parliamentary Forum consisting of six Members of Parliament visited Japan from 25 September to 1 October, and another delegation of six Members of Parliament, sponsored by the Sasakawa Peace Foundation also visited Japan from 16-22 October, 2011. External Affairs Minister Shri S.M. Krishna, accompanied by an official delegation, visited Japan from 28-30 October 2011 for the Annual Strategic Dialogue. This was followed by the visit of Defence Minister Shri A.K. Antony for the India-Japan Defence Ministerial meeting on 2-3 November 2011. Prime Minister Yoshihiko Noda and Mrs. Hitomi Noda paid a State visit to India from 27

- 29 December 2011. During the visit, PM Noda delivered an address at the Indian Council for World Affairs (ICWA) and attended a luncheon meeting hosted by the apex chambers of commerce and industry. He also called on the Vice President of India and held a Summit meeting with Prime Minister Dr. Manmohan Singh, followed by a joint press conference and a banquet hosted by the PM. The two Prime Ministers also signed a Joint Statement entitled "Vision for the Enhancement of Japan-India Strategic and Global Partnership upon entering the year of the 60th Anniversary of the establishment of diplomatic relations". Minister of Tourism, Shri Subodh

Kant Sahai visited Japan from 5 - 8 February 2012 to attend the inaugural ceremony of the 63rd Sapporo Snow Festival at Sapporo, Hokkaido. During the visit, he called on the Governor of Hokkaido and hosted an "India Evening" in connection with the inauguration of the Sapporo Snow Festival where a replica of Taj Mahal was built by the Hokkaido Broadcasting Corporation. In Tokyo, he called on former PM Hatoyama and Minister for Land, Infrastructure and Transport, Mr. Takeshi Maeda. Japan and India are both in the process of globalizing, each of course in their own way, and responding to their compulsions. Ultimately, what is important is that the underlying sentiment is one of convergence rather than of competition. Healthy bilateral relations have a natural downstream flow in terms of international cooperation and in creating a positive ambience in the continent and beyond.

3. KOREA-INDIA FRIENDSHIP ASSOCIATION

The Korea-India Friendship Association was established in February 1970 by the Committee for Cultural Relations with Foreign Countries (CCRFC) for fostering friendly relations and projecting India's cultural image in the DPRK. The society is the nodal point for interaction between the Mission and the CCRFC, which is the counterpart of our ICCR. The Association has been organising events from time to time for promoting relations between the two countries. The Association runs a Friendship School and a Friendship Farm. India has donated 100 Kg of wheat seeds in March 2006 and 5 kg of barely seeds in June 2008. Computers and Audio Visual equipments were also donated to the India-DPRK Friendship School in August 2006. Apart from these, India has been regularly gifting diesel coupons, stationery items and Euro 2000.00 as 'Grant-in-Aid' for the year 2010-11 as approved by Ministry of Culture.

India-Republic of Korea Relations

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India-RoK relations have made great strides in recent years and become multidimensional, spurred by significant convergence of interests, mutual goodwill and highest level exchanges. President Smt. Pratibha Devisingh Patil came on a State Visit to RoK from 24-27 July, 2011 during which the Civil Nuclear Energy Cooperation Agreement was signed. PM Dr. Manmohan Singh visited Seoul from November 10-12, 2010 for the G20 Summit and is scheduled to visit again for the Nuclear Security Summit on 26-27 March 2012. The State Visit of President of RoK Mr. Lee Myung bak to India in January 2010 was an important milestone that elevated the relations to “Strategic Partnership”. President Lee was also the Chief Guest at India’s Republic Day celebrations on January 2010. His visit followed an equally successful State Visit to RoK by President Dr. APJ Abdul Kalam, in February 2006 that heralded a new vibrant phase in India- RoK relations. The visit inter alia led to the launch of a Joint Task Force to conclude a bilateral Comprehensive Economic Partnership Agreement (CEPA), which was signed by Minister for Commerce and Industry Shri Anand Sharma at Seoul on August 7, 2009. CEPA came into force from 1st January, 2010. Rapidly expanding trade and investment flows lie at the core of the bilateral cooperation. Bilateral trade in 2011 has crossed the \$ 20 billion mark and poised to achieve the target of \$ 30 billion by 2014.

Historical and cultural contacts between the two peoples date back to ancient times. According to “Samguk Yusa” or “The Heritage History of the Three Kingdoms” written in the 13th century, a Princess from Ayodhya came to Korea and married King Kim-Suro and became Queen Hur Hwangok in the year 48 AD [the First Lady Mrs. Kim Yoon-ok, former President Kim Dae-jung, former President Kim Young-sam and former Prime Minister Kim Jong-pil, inter alia, claim this ancestry]. The enduring philosophy of the Buddha, which has influenced the lives and thoughts of the people of the two countries, also provides a strong link. The rationale for a close relationship between India and ROK has been reinforced in modern times by political and economic imperatives. Experience of colonial rule and the anti-colonial movements in both countries, revived interest in each other. Nobel Laureate Rabindranath Tagore composed a short but evocative poem in 1929 about Korea’s glorious past and its promising bright future. He wrote:

“In the golden age of Asia
Korea was one of its lamp bearers,
And that lamp is waiting to be lighted once again
For the illumination of the East.”

India played an important and positive role in Korean affairs after the end of Japanese colonial rule in 1945. India was the Chairman of the 9-member UN Commission set up in 1947 to hold elections in Korea. The successful general elections held for the first time in the South in 1948 led to the establishment of the Republic of Korea on 15th August 1948. During the Korean War (1950-53), both the warring sides accepted a resolution sponsored by India, and the ceasefire was declared on 27 July 1953. India contributed a medical unit, including 60 Para Field Ambulances, to the UN multinational force during the war. Also, India, in its capacity as the Chairman of the Neutral Nations Repatriation Commission [NNRC], contributed significantly to resolving the humanitarian issues arising out of the War, and this received all round appreciation from the international community.

India and RoK established consular relations in 1962. In 1973, relations were upgraded to Ambassador-level. In the post-cold war era, RoK’s endeavours towards democratization boosted India-RoK relations by creating a common ground with India’s own democratic ethos. In course of time, RoK’s open market policies found resonance with India’s economic liberalization and ‘Look East Policy’. Consistent Indian support for peaceful reunification of the two Koreas has helped further strengthen the bilateral

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relations.

Today, all major Korean conglomerates such as Samsung, Hyundai Motors and LG have made significant investments into India, which are estimated at \$3.3 billion, till November 2011. Mahindra & Mahindra is the largest Indian investor in RoK, having acquired a majority stake in SsangYong Motors, the country's 4th largest auto manufacturer, in March 2011, with an investment of about \$470 million. Tata Motors acquired Daewoo Commercial Vehicle Company for \$ 102 million in March 2004. Other Indian companies with investment in South Korea are: Novelis Inc., a subsidiary of Hindalco Industries Ltd., and United Phosphorus Ltd producing aluminum and phosphorus respectively.

India-RoK Joint Commission for bilateral cooperation was established in February 1996, which is chaired by the External Affairs Minister and the Minister of Foreign Affairs and Trade from the Korean side. So far, six meetings of the Joint Commission were held, with the last one held in June 2010 in Seoul. Indian Defence Minister Shri A.K. Anthony visited RoK in September 2010. MoUs on Defense Cooperation, as well as, between Defense Research and Development Organisation (DRDO) of India and Defense Acquisition Programme Administration (DAPA) of RoK for cooperation in R&D were signed. Earlier Korean Minister of Defence Mr. Kim Jung-soo had visited India in May 2007. The two countries also established a Foreign Policy and Security Dialogue (FPSD) at Secretary (Vice-Ministerial) level. An Indian Cultural Centre was established in RoK in April 2011 and the Festival of India in Korea was inaugurated by Dr. Karan Singh, President of Indian Council for Cultural Relations on 30 June 2011.

Good air connectivity between the two countries has been established with Air India, Asiana Airlines and Korean Air operating regular flights. Over 81,000 visas were issued in 2011 by the Mission. Indian Community in RoK is estimated at 7500, which includes businessmen, IT professionals, scientists, research fellows, students and workers. There are about 150 businessmen dealing mainly in textiles and gems and jewellery. Over 1000 IT professionals/engineers have recently come to RoK and are working in various companies. There are about 500 scientists/ post-doctoral research scholars in RoK working in prestigious institutions.

India-Mongolia Relations

India and Mongolia have interacted through the medium of Buddhism over a period of 2600 years. Following the emergence of Mongolia as a modern nation state in the 20th century, the two countries have continued to build relations based on shared historical and cultural legacy.

Establishment of Diplomatic Relations: Diplomatic relations between India and Mongolia were established on 24 December 1955. India was the first country outside the Soviet block to establish diplomatic relations with Mongolia. India supported Mongolia in having UN and NAM memberships. In 2010, Mongolia marked 55th Anniversary of the establishment of bilateral diplomatic relations.

Exchange of High Level Visits: Mongolia was visited by Presidents Mrs. Pratibha Devisingh Patil (2011) and President R.Venkataraman (1988); Vice-Presidents Dr. S. Radhakrishnan (1957), Dr. Shankar Dayal Sharma (1992), Mr. KR Narayanan (1996), and Krishan Kant (1999) and Lok Sabha Speakers Dr. G.S. Dhillon (1974), Dr. Balram Jharkhar (1985), Mr. Shivraj Patil (1995), Mr. P.A. Sangma (1997) Mr. GMC Balayogi (2001) and Mrs. Meira Kumar (2010) The important visits from Mongolia to India were the Chairmen of the Presidium U. Tsendenbal (1959) and Mr. Bathmunkh (1989); Presidents P. Ochirbaat (1994), President N. Bagabandi (2001) and President Ts. Elbegdorj (2009); Chairmen of the State Great Hural Mr. N. Bagabandi (1996), Mr. R. Gonchigdorj (1998), Mr. S. Tumor-Ochir (2003) and Mr. D.Demberel (2010); Prime Ministers Mr. Tsendenbal (1973 and earlier in 1959 as Chairman of the Presidium), N. Enkhbayar (2004 and earlier as the then Leader of Opposition in 1999).

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State Visit of President Pratibha Devisingh Patil to Mongolia in July 2011: President of India paid a State Visit to Mongolia from 27-30 July, 2011. She was accompanied by an official delegation, including Cabinet Minister and Members of Parliament, and a composite business delegation. India confirmed providing a line of credit of US \$ 20 million for India-Mongolia Joint Information Technology Education and Outsourcing Centre to be established in Ulaanbaatar. India also agreed to upgrade and modernize Rajiv Gandhi Arts and Production School and the Atal Behari Vajpayee Centre for Excellence in Information and Communication Technology Education and to work with Mongolian authorities on Joint India-Mongolia School to be set up at Ulaanbaatar. During the visit bilateral Defence cooperation agreement, an MOU on media exchanges and an MOU on cooperation between Planning Commission of India and National Development and Innovation Committee (NDIC) were signed. There were discussions on cooperation in peaceful uses of radioactive minerals and nuclear energy and improving air connectivity between the two countries. President of India felicitated President Elbegdorj on Mongolia assuming the Chair of 'Community of Democracies'. Mongolia reiterated its support to India in becoming a permanent member of a reformed and expanded UNSC.

Joint Declaration of 1973 and Treaty of Friendly Relations and Co-operation of 1994: An India-Mongolian Joint Declaration was issued following the visit of Premier Yu. Tsendenbal in February 1973. The Declaration includes general principles to guide bilateral relations. In February 1994, a Treaty of Friendly Relations and Co-operation was signed during the visit of President Ochirbat to India.

Bilateral Ties Strengthened during visits of Mongolian VVIPs: During the state visit of Mongolian President Natsagiin Bagabandi in 2001, a Joint Declaration was issued outlining the future direction of bilateral relations. Six Agreements were also signed during the visit relating to Extradition, Defence co-operation, Co-operation in Information Technology, Investment Promotion and Protection, Mutual Legal Assistance in Criminal Matters and Mutual Legal Assistance concerning Civil and Commercial Matters. The Mongolian Prime Minister N. Enkhbayar paid a State visit to India in 2004. During the visit, a Joint Statement was issued. Three agreements were signed in the fields of Animal Health & Dairy; Space Science, Technology & Applications; and Biotechnology. Both sides also formalized the ratification of the Extradition Treaty and the Treaty on Legal Assistance in Civil and Commercial Matters. The Mongolian President Ts. Elbegdorj paid state visit to India in 2009. A joint declaration was issued on Comprehensive Partnership on September 14, 2009. The following documents were signed: an intergovernmental Agreement on "Stabilization Loan" of USD 25 million, a Cooperation Agreement in Health and Medical Sector, Cultural Exchange Programme for 2009-2012, an MOU on Statistical Cooperation and an MOU on the Peaceful Use of Nuclear Energy.

Bilateral Cooperation Mechanism: There is an institutional mechanism for enhancing bilateral cooperation between India and Mongolia through 'India-Mongolia Joint Committee on Cooperation (IMJCC)', headed by Minister of State for External Affairs on the Indian side and Mongolian Minister of Education, Culture and Science. Third meeting of IMJCC was held at Ulaanbaatar on 30-31 May, 2011.

Bilateral Economic and Trade Relations: During the visit of then Minister for Commerce Mr. Pranab Mukherjee, in 1994 two MOUs pertaining to the establishment of a Joint Trade Sub-Committee and Co-operation between the Planning Commission of India and the National Development Board of Mongolia were signed. An agreement for co-operation in the field of geology and mineral resources was signed in September 1996. In 1996 during the visit of the then Vice President, Mr. K.R. Narayanan to Mongolia, an Agreement on Trade and Economic Cooperation between India and Mongolia was signed. The Agreement provides for MFN status to each other in respect of customs duties and all other taxes on imports and exports. During the visit of President Bagabandi in 2001, both sides signed an Investment Promotion and Protection Agreement. The main items of exports to

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Mongolia include medicines, mining machinery and auto parts, etc. Imports from Mongolia include raw wool.

Bilateral Cooperation under ITEC: During President Elbegdorj's visit to India, 120 slots per annum were earmarked to Mongolia under ITEC. During the year 2010-11 against the allocation of 120 slots, 121 slots were actually utilized. Also, under the Colombo Plan, 10 slots have been allotted for 2011-12.

Rajiv Gandhi School for Arts and production (RGSAP): In 1992, the proposal for setting up a Vocational Training Centre in Mongolia was signed during the visit of then Vice President Dr. Shankar Dayal Sharma to Mongolia. The proposal envisaged training facilities in nine fields. The facilities are being upgraded.

Atal Behari Vajpayee Centre for Excellence in ICT: Following an Agreement signed in September 2001 during the visit of Minister for Information Technology Mr. Pramod Mahajan to Mongolia, the Atal Bihari Centre of Excellence (ABVCE) in Information and Communication Technology (ICT) and 5 Community Information Centres (CICs) in 5 provinces were established at a cost of US \$ 1 million. In 2005, five new CIC were established. The process of upgrading these facilities is underway.

Solar Energy: A solar energy electrification project was executed by the Central Electronics Ltd. and formally inaugurated on April 29, 2006 in Dadal Soum.

Bilateral Cultural & Educational Relations: The India-Mongolian Cultural Agreement signed in 1961, has governed the Cultural Exchange Programme (CEP) between the two countries. The Agreement envisages co-operation in the fields of education by way of scholarships, exchange of experts, participation in conferences etc. The CEP was subsequently renewed in 2003, 2005 and 2009 for 3-year periods. Government of India has increased the number of scholarships for Mongolian nationals under CEP and under GCSS to 50 scholarships from the academic year 2012 for pursuing higher studies in India. Also, 6 students are granted scholarships to study Hindi language at Kendriya Hindi Sansthan, Agra every year.

During the visit of Dr. Murli Manohar Joshi, the then Human Resources Development Minister to Mongolia in July 2002, an MOU on cooperation in the field of education, which provided for setting up of an India-Mongolia Joint School in Mongolia and an Exchange Programme in the field of Education was signed. A large number of Indian literary work including Panchtantra, Ramayana, Shakuntala, Ritu Samhara, Kamasutra, Godaan, Gaban and Kati Patang have been published in Mongolian language as also major Buddhist scriptures of Indian origin. Hindi films are fairly popular in Mongolia. The serial Mahabharata, dubbed in Mongolian, has been telecast on Ulaanbaatar TV. A photographic exhibition entitled "Path of Compassion", another one titled "Amrita Shergil Revisited" and an exhibition of 540 Indian paintings based on a private collection have been organised in Mongolia. A 10-member school children troupe of Bal Bhawan visited Mongolia in July 2010.

There were visits of a 5-member 'Odissi'dance troupe led by Ms. Geeta Mahalik (2004), a 6-member Kathak dance troupe led by Ms. Madhumita Roy (2005), a 5-member Odissi dance troupe led by Ms. Meera Das (2007) and a 3-member Sarod classical music group led by Pt. Debojyoti Bose in 2009. Also in 2009, a 10-day film festival was organized.

INDIA—ITS NEIGHBOURING

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COUNTRIES

INDIA-SRI LANKA BILATERAL RELATIONS

India is Sri Lanka's closest neighbour. The relationship between the two countries is more than 2,500 years old and both sides have built upon a legacy of intellectual, cultural, religious and linguistic intercourse. Relations between the two countries have also matured and diversified with the passage of time, encompassing all areas of contemporary relevance. The shared cultural and civilizational heritage of the two countries and the extensive people to people interaction of their citizens provide the foundation to build a multi-faceted partnership. In recent years, the relationship has been marked by close contacts at the highest political level, growing trade and investment, cooperation in the fields of development, education, culture and defence, as well as a broad understanding on major issues of international interest.

The nearly three-decade long armed conflict between Sri Lankan forces and the LTTE came to an end in May 2009. During the course of the conflict, India supported the right of the Government of Sri Lanka to act against terrorist forces. At the same time, it conveyed at the highest levels its deep concern at the plight of the mostly Tamil civilian population, emphasizing that their rights and welfare should not get enmeshed in hostilities against the LTTE. The conclusion of the armed conflict saw the emergence of a major humanitarian challenge, with nearly 300,000 Tamil civilians housed in camps for Internally Displaced Persons (IDPs). The Government of India put in place a robust programme of assistance to help these IDPs return to normal life as quickly as possible. In June 2009, Prime Minister Dr. Manmohan Singh announced a grant of INR 5 billion (SLR 12 billion) for relief and rehabilitation in Sri Lanka. In the immediate aftermath of the end of armed conflict, India provided a total of 250,000 family relief packs for the IDPs. It also established an emergency medical unit in the IDP camps, which treated over 50,000 IDPs and carried out over 3000 surgeries from March to September 2009. Medicines worth SLR 225 million (INR 9.2 crores) were also supplied to Sri Lankan authorities.

India also consistently advocated the need for IDPs to be resettled to their original habitations as early as possible. In order to help with this, India provided shelter assistance by way of supplying 10,400 tonnes of galvanized iron (GI) sheets (a total of over one million sheets) between August 2009 and May 2011 for constructing temporary housing for IDPs. In addition, 95,000 starter packs of agricultural implements were supplied to help resettling families begin livelihood generating activities. The Government of India also supplied 400,000 bags of cement to help IDPs rebuild their shelters. Since the requirement of de-mining was a major constraint on the speed of resettlement, the Government of India fully financed seven Indian de-mining teams, engaged in various sectors in northern Sri Lanka to help expedite resettlement.

With the shift from relief and rehabilitation to reconstruction and development, the Government of India turned its attention to the housing requirements of the IDPs. During the visit of President Mahinda Rajapaksa to India from 8-11 June 2010, an announcement was made by Prime Minister Singh that India would support a programme to reconstruct 50,000 houses in Sri Lanka. The groundbreaking ceremony of the pilot phase of the Project for one thousand houses covering all the five districts of Northern Province was held during the visit of the Minister of External Affairs of India Mr. S.M. Krishna to Sri Lanka in November 2010 at Ariyalai near Jaffna. The work on the pilot phase is in advanced stages of completion. The first lot of completed houses was handed over to beneficiaries during the visit of Minister Krishna to Jaffna on 18 January 2012. An MOU with the Government of Sri Lanka on the modalities of implementation of the next phase of the Project for remaining 49,000 houses was also signed during this visit. The next phase, which is expected to be launched soon, will cover the Northern, Eastern, Central and Uva Provinces in terms of its spatial spread and involve

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construction of new dwelling units and repairs of existing houses.

Since agriculture is the primary means of livelihood in the areas affected by the conflict, Government of India has focused its attention on supporting this sector with a view to jumpstart the revival of the local economy through a wide-ranging programme for agricultural renewal. The proposals that were taken up for urgent implementation include supply of seeds for the Maha and Yala seasons in Sri Lanka in 2010-11 and supply of tractors and other machinery to farmer organizations in northern Sri Lanka. 500 tractors with four implements each (rotovator, tiller, cage-wheel and disk plough) have been supplied to farmer organizations and agrarian service centres in the Northern Province. The total cost of the project is SLR 600 million (INR 25 crores approx). To cater to the transportation needs of persons being resettled and to aid revival of their livelihoods, India has also undertaken a project for supply of 10,000 bicycles to returnees in Northern Province.

Sri Lanka is one of the major recipients of development credit given by the Government of India. A line of credit of \$167.4 million for repair and upgradation of the tsunami-damaged Colombo-Matara rail link is already fully operational. The upgraded coastal railway track between Galle-Matara was inaugurated on 16 February 2011. During his visit to Sri Lanka in January 2012, Minister of External Affairs Mr. S.M. Krishna handed over the Galle-Hikkeduwu segment. Another line of credit of \$800 million for track laying and supply of rolling stock for the northern railway line was announced during the visit of the President of Sri Lanka to India in June 2010. Of this amount, an agreement for a credit line of US \$416.39 million was signed in November 2010 to support construction of Medawachchiya to Madhu, Madhu to Talaimannar and Omanthai to Pallai railway lines in Northern Sri Lanka. Another agreement for a credit line of US \$ 382.37 million for track laying on the Pallai-Kankesanthurai railway line, setting up of signaling and telecommunications systems for the Northern railway line and other projects as may be mutually agreed by the Governments of India and Sri Lanka was signed during the visit of Minister Krishna in January 2012. India is also involved in projects for renovation of Palaly Airport, Kankesanthurai Harbour, construction of Cultural Centre in Jaffna, interconnection of electricity grids between the two countries, construction of a 150-bed hospital in Dickoya and setting up a coal power plant in Sampur as a joint venture between National Thermal Power Corporation (NTPC) and Ceylon Electricity Board (CEB). Work on the wreck removal of the project for rehabilitation of the Kankesanthurai Harbour as a fully GOI grant-funded project (Cost: INR 85.5 crores/SLR 2.05 billion) was completed in January 2012. In the coming months, work is expected to start on setting up a cultural centre in Jaffna.

India also continues to assist a large number of smaller development projects in areas like education, health, transport connectivity, small and medium enterprise development and training in many parts of the country through its grant funding. The MoU on Cooperation in Small Development Projects was renewed during the visit of President Rajapaksa to India in June 2010 enhancing the financial limit for projects to SLR 300 million (approx. INR 12 crores). Projects for providing fishing equipment to cooperatives in the East, supply of equipment to Jaffna Teaching Hospital, renovation of Duraippah Stadium, reactivation of Achuvely Industrial Zone, assistance in repair of schools in Northern Province, supply of fishing equipment to old IDPs in Mannar district and supply of equipment to Kilinochchi and Mulaittivu General Hospitals have already been completed or are in various stages of implementation under this scheme.

India and Sri Lanka enjoy a robust trade and investment relationship, with bilateral trade growing rapidly in the last decade and a number of leading Indian private sector companies investing in Sri Lanka and establishing a presence in this country. Sri Lanka is India's largest trade partner in South Asia. India in turn is Sri Lanka's largest trade partner globally. Trade between the two countries grew particularly rapidly after the entry into force of the India-Sri Lanka Free Trade Agreement in March 2000. Over the next eight years, bilateral trade multiplied nearly five-fold. India has also emerged as the No. 1 source country as far as Foreign Direct Investment and tourist arrivals

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are concerned.

Following a downturn in 2009 on account of the global economic recession, trade rebounded in 2010. According to Sri Lankan statistics, bilateral trade in first eleven months (January- November) of 2011 amounted to US \$ 4.46 billion, which is about 72 % higher than the corresponding period last year (Jan-Nov of 2010 - US \$ 2.59 billion). India's exports to Sri Lanka amounted to US \$ 3.97 billion, which is an increase of about 83 % compared to corresponding period last year. Sri Lanka's exports to India amounted to US \$ 481.85 million, which is an increase of about 14 % compared to corresponding period last year. In recent months, the two countries have also resumed discussions on a Comprehensive Economic Partnership Agreement and steps to finalize the Agreement are expected to be taken in the near future.

Sri Lanka has long been a priority destination for direct investment from India. India is among the four largest overall investors in Sri Lanka with cumulative investments over US\$ 600 million. Our main investments are in the areas of petroleum retail, hospitals, telecom, vanaspati, copper and other metal industries, real estate, telecommunication, hospitality & tourism, banking and financial services, IT and food processing (tea & fruit juices). India was the top investor in Sri Lanka in 2010. Out of the total FDI of US\$ 516.30 million, India's investment was US\$

110.24 million constituting about 21% of the total investment. Known Indian names such as IOC, Tatas, Bharti Airtel, Piramal Glass, LIC, Ashok Leyland, L&T and Taj Hotels are present in Sri Lanka. The last few years have also witnessed an increasing trend of Sri Lankan investments into India. Significant examples include Ceylon Biscuits (Munchee brand), Carsons Cumberbatch (Carlsberg), Brandix (about US\$ 1 billion to set up a garment city in Vishakapatnam), MAS holdings, John Keels, Hayleys, and Aitken Spence (Hotels), apart from other investments in the freight servicing and logistics sector.

The need for national reconciliation through a political settlement of the ethnic issue has been reiterated by India at the highest levels. India's consistent position is in favour of a negotiated political settlement, which is acceptable to all communities within the framework of a united Sri Lanka and which is consistent with democracy, pluralism and respect for human rights. The Government of Sri Lanka has conveyed its assurance that political proposals building on the 13th Amendment to the Constitution will be discussed with the Tamil leadership of the country.

Cultural cooperation is a very important aspect of the bilateral relationship and the Cultural Cooperation Agreement signed by the Government of India and the Government of Sri Lanka on 29 November, 1977 at New Delhi forms the basis on which the periodic Cultural Exchange Programmes (CEPs) between the two countries are signed and implemented. A Programme of Cultural Cooperation (PCC) for 2010-2013 was signed during the June 2010 State visit of President Rajapaksa. The PCC seeks to enhance the level of cooperation in a wide variety of fields such as performing arts, visual arts, libraries, museums, archives & cultural documentation, archaeology, handicrafts, sports and youth affairs, publications and professional exchanges and mass media. The Indian Cultural Centre in Colombo actively promotes awareness of Indian culture by offering classes in Indian music, dance, Hindi and Yoga. Every year, cultural troupes from both countries exchange visits. India is also committed to the restoration of important icons of cultural heritage of Sri Lanka and is setting up an Indian Gallery at the International Buddhist Museum in Kandy and working on the restoration of the Thiruketheeswaram Temple in Mannar.

In the Joint Declaration issued during the State Visit of President Rajapaksa to India in June 2010, India and Sri Lanka also agreed that the 2600th year of the attainment of enlightenment by Lord Buddha (Sambuddhatva Jayanthi) would be commemorated through joint activities by the two countries. An International Buddhist Conference on the theme "Cultural Interface between India and Sri Lanka based on Buddhist History, Art, Literature and Philosophy" organized by the Indian Council for Cultural Relations (ICCR) which was inaugurated by President Rajapaksa was

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held at Kandy from 19-20 March 2011. A 16 feet high idol of Lord Buddha in the Sarnath style from the Gupta Period has been installed at the entrance of the International Buddhist Museum complex in Sri Dalada Maligawa in Kandy.

respect to the safety and security of their sea lanes of communication, informs their bilateral exchanges in this field.

The relationship has been marked by high level exchanges of visits. Minister of External Affairs Mr. S.M. Krishna visited Sri Lanka from 16-19 January 2012. During his visit, he called on President Mahinda Rajapaksa and Prime Minister D.M. Jayaratne. In his meeting with his counterpart, Minister of External Affairs Prof. G.L. Peiris, Minister Krishna reviewed the comprehensive agenda of the bilateral relationship. He also had meetings with the Leader of the Opposition in the Sri Lankan Parliament, Mr. Ranil Wickremasinghe, representatives of the Tamil National Alliance and other Sri Lankan parties. Minister Krishna visited Kilinochchi and Jaffna in Northern Sri Lanka in connection with Government of India assisted projects and also handed over the first lot of housing units at Ariyalai, Jaffna. He also visited Galle in southern Sri Lanka where he inaugurated a segment of the Southern Railway Project implemented under the Line of Credit extended by India. Dr. A.P.J. Abdul Kalam, former President of India, visited Sri Lanka from 20-24 January 2012 to launch the 'National Plan for a Trilingual Sri Lanka', at the invitation of the President of Sri Lanka.

Earlier, the Hon'ble Speaker of Lok Sabha, Smt. Meira Kumar visited Sri Lanka from 11-16 March 2011 to participate as the Guest of Honour at the 3rd CPA Asia Regional Conference. Then Minister of Rural Development and Panchayati Raj Mr. Vilasrao Deshmukh visited Sri Lanka from 4-7 April 2011 to participate at the 4th South Asian Conference on Sanitation. Minister of External Affairs of Sri Lanka, Prof. G L Peiris visited India from 15-17 May, 2011. Speaker of the Sri Lankan Parliament Mr. Chamal Rajapaksa led a Parliamentary delegation to India from 1-4 August 2011 at the invitation of Hon'ble Speaker of Lok Sabha. He also visited India to participate at the 5th Conference of Association of SAARC Speakers and Parliamentarians from 9-12 July 2011. Minister of Health Mr. Maithripala Sirisena visited India from 31 July to 3 August 2011. Minister of Environment Mr. Anura Priyadarshana Yapa visited India on 24-25 May 2011.

Today, the India-Sri Lanka relationship is strong and poised for a quantum jump by building on the rich legacy of historical linkages and strong economic and development partnerships that have been forged in recent years.

Education is a core area of cooperation between India and Sri Lanka. Both countries agreed to launch an India Sri Lanka Knowledge Initiative during the visit of President Rajapaksa to India in June 2010. During the visit of Minister of External Affairs Mr. S.M. Krishna in January 2012, a nearly three-fold increase in scholarship support to deserving Sri Lankan students was announced. The expanded scholarship programme would benefit not only regular undergraduate studies but would also provide opportunities for higher research. In addition, under the Indian Technical and Economic Cooperation Scheme and the Colombo Plan, India offers nearly 200 slots annually to Sri Lankan nationals for short and medium term training courses in a wide variety of technical and professional disciplines.

Tourism also forms an important link between India and Sri Lanka and India is the largest source market for Sri Lankan tourism. India is the largest contributor with every fifth tourist being from India. In 2010, out of the total 654,976 tourists, 126,882 were from India constituting about 20%. In the period from January to November 2011, the tourist inflow to Sri Lanka increased to 758,458 from 570,349 in the corresponding period of 2010 showing an increase of about 33 %. Out of this number of 758,458, 153,919 tourists were from India giving a share of about 20 %. Sri Lankan tourists too are among the top ten sources for the Indian tourism market. In 2011, nearly 200,000 visas were issued by the High Commission in Colombo to facilitate travel between Indian and Sri Lanka.

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The India-Sri Lanka Foundation, set up in December 1998 as an intergovernmental initiative, also promotes greater understanding between the peoples of the two countries, including through enhancement of scientific, technical, educational and cultural cooperation. The Foundation focuses especially on the promotion of civil society cooperation and enhancing contact between the younger generations of the two countries. With a view to this, the Foundation has supported a number of student exchange programmes and activities at the school and university levels. It has also promoted the pursuit of higher studies as well as research in both countries, besides supporting a variety of cultural performances and programmes.

Given the proximity of the territorial waters of both countries, especially in the Palk Straits and the Gulf of Mannar, incidents of straying of fishermen are common. Both countries have agreed on certain practical arrangements to deal with the issue of bonafide fishermen of either side crossing the IMBL. Through these arrangements, it has been possible to deal with the issue of detention of fishermen in a humane manner.

India and Sri Lanka also enjoy a growing defence relationship built on extensive training and Service-to-Service linkages. The commonality of concerns of both countries, including with.

INDIA & WORLD ORGANISATIONS

BRICS [BRAZIL, RUSSIA, INDIA, CHINA AND SOUTH AFRICA] – A SNAPSHOT

The BRIC [Brazil, Russia, India and China] idea was first conceived in 2001 by Goldman Sachs as part of an economic modeling exercise to forecast global economic trends over the next half century. It was institutionalized with the first meeting of BRIC Foreign Ministers on the margins of UNGA in New York in September 2006; a standalone meeting of Foreign Ministers took place in Yekaterinburg, Russia in May 2008. An informal Summit of BRIC Leaders was held in Toyako, Japan in July 2008, on the sidelines of G8-Outreach Summit. The first standalone Summit took place in Yekaterinburg, Russia in June 2009 and the 2nd Summit was held in Brasilia in April 2010. The 3rd Summit was held in Sanya on 14 April 2011. The 4th Summit will be hosted by India in 2012.

Expansion of BRIC into BRICS

BRIC Foreign Ministers at their meeting in New York on 21st September 2010 agreed that South Africa may be invited to join BRIC. Accordingly, China, as the host of 3rd BRICS Summit [in fact the 1st BRICS Summit as South Africa joined BRIC at this Summit], invited South African President to attend the 3rd Summit in Sanya with the concurrence of other BRIC leaders.

Other important Meetings

Besides BRICS Summits and regular meetings of Foreign Ministers, Finance/Economic Ministers have also been meeting regularly. A meeting of Agriculture Ministers (Moscow on 26 March 2010), a meeting of Trade Ministers (Sanya on 13 April 2011 before the 3rd Summit) and 3 meetings of BRIC National Security Advisers have also taken place. Other areas of engagement include supreme courts, competition authorities, development banks, cooperative societies, etc.

Two BRICS Business Forum meetings have taken place; the last in Sanya on the sidelines of the 3rd

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Summit in April 2011. Track-II BRICS meetings have also been organized; China hosted the last meeting in Beijing in March 2011. Mayors of BRICS cities have been meeting regularly. Mumbai Municipal Commissioner has attended these meetings.

Key Joint Statements/documents

BRIC(S) Summits have issued Joint Statements/Declaration. The first Summit also adopted a Joint Statement on Global Food Security. Joint Communiqués/Statements were also issued after standalone meeting of BRIC Foreign Ministers and meetings of BRIC Finance Ministers and BRIC Agriculture Ministers. A Memorandum of Cooperation was signed among BRIC Development Banks (EXIM Bank from India) on the sidelines of the 2nd Summit. A Framework Agreement on 'Financial Cooperation within the BRICS Inter bank Cooperation Mechanism' was signed on 14 April in Sanya; it inter alia envisages extending LoCs in local currencies. An MoU was also signed at the Business Forum in Sanya establishing permanent business contact points; FICCI signed from India. A BRIC Statistical publication was released in Brasilia at the 2nd Summit and its revised edition including South Africa was released at the Sanya Summit.

Issues on BRICS Agenda

Since its inception in 2006, the agenda of BRICS meetings has considerably widened to encompass global issues such as international terrorism, WMDs, climate change, food and energy security, international economic and financial situation etc. BRIC countries share similar positions on many issues including on the reforms of the Bretton Woods Institutions, trade protectionism and the Doha Development Round, international terrorism, achievement of MDG goals, support for multi-polar, equitable and democratic world order, etc. However, there are areas of differences particularly on UNSC reform, climate change, international monetary system etc.

BRICS Joint Study and other projects/proposals

At PM's suggestion at the first BRIC Summit in Yekaterinburg, Russia in June 2009, DEA, Ministry of Finance is coordinating a joint study on the state of world economy during the next two years and the role of BRICS countries. A workshop is likely to be held in Delhi in August 2011 to finalize the Study. Russia has also proposed cooperation in research in genetically modified crops, clean fuels (bio-fuels, bio-gas etc), modernization of helicopters including establishment of their service centres, security systems and counterterrorism systems etc. While these proposals are viewed with an open mind, their feasibility and detailed modalities of their implementation need to be thought through.

Next Steps

A Plan of Action was endorsed at the Sanya Summit to strengthen cooperation among BRICS countries in areas of security, finance, business links, agriculture, health, culture, sports, science and technology and green economy. China has hosted a meeting of BRICS Health Ministers on 11 July 2011 and a meeting of Agriculture Ministers would be hosted later in 2011. Other meetings which are planned are those of National Security Advisers, Agricultural experts, National Statistical Institutions, Competition Conference, etc. Ministers of Finance and Central Bank Governors would meet on the sidelines of other multilateral meetings and External Affairs Ministers would meet on the sidelines of UNGA.

CARIBBEAN COMMUNITY: CARICOM

In 1972, Commonwealth Caribbean leaders at the Seventh Heads of Government Conference decided to transform the Caribbean Free Trade Association (CARIFTA) into a Common Market and establish the Caribbean Community, of which the Common Market would be an integral part. On 4th July

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1973, they signed the Treaty of Chaguaramas establishing the Caribbean Community in Trinidad & Tobago.

CARICOM has 15 members – Antigua and Barbuda, Bahamas, Barbados, Belize, Dominica, Grenada, Guyana, Haiti, Jamaica, Montserrat, St. Kitts and Nevis, St. Lucia, St. Vincent and the Grenadines, Suriname and Trinidad & Tobago. Of the 15, all except Montserrat are nation States. Anguilla, Bermuda, British Virgin Islands, Cayman Islands and Turks & Caicos Islands are Associate Members of the Community. The Chairmanship of the Community is rotated every six months among the member countries Heads with current Chairmanship held by H.E. Desiré Delano Bouterse President Suriname till 30th June, 2012.

Between 1993 and 2000, the Inter-Governmental Task Force (IGTF) which was composed of representatives of all Member States, produced nine Protocols, for the purpose of amending the Treaty. These nine Protocols were later combined to create a new version of the Treaty, called formally, The Revised Treaty of Chaguaramas heralding the establishment of the CARICOM Single Market and Economy.

The CARICOM Single Market and Economy is intended to benefit the people of the Region by providing more and better opportunities to produce and sell goods and services and to attract investment. It will create one large market among the participating member States. The objectives of the Community, identified in Article 6 of the Revised Treaty, are: to improve standards of living and work; the full employment of labour and other factors of production; accelerated, coordinated and sustained economic development and convergence; expansion of trade and economic relations with third States; enhanced levels of international competitiveness; organization for increased production and productivity; achievement of a greater measure of economic leverage and effectiveness of Member States in dealing with third States, groups of States and entities of any description and the enhanced co-ordination of Member States' foreign and foreign economic policies and enhanced functional co-operation.

New issues such as e-commerce, government procurement, trade in goods from free zones, free circulation of goods, and the rights contingent on the free movement of persons have been added to CARICOM agenda. The CARICOM Secretariat is the principal administrative organ of the Community and is headed by a Secretary General who is the Chief Executive Officer of the Community. Ambassador Irwin La Rocque of Dominica took over as new Secretary General on 15 Aug 2011 replacing Sir Edwin Carrington of Trinidad and Tobago.

The international profile of the CARICOM Secretariat has been increasing with its Secretary General attending the high-level retreat of Heads of Regional Organizations hosted by the UNSG in USA in January 2010, the CARICOM-Mexico Summit being held in February 2010 and CARICOM Brazil Summit held in April 2010.

CARICOM-China held the Foreign Minister level consultations in May 2010 and President Jagdeo of Guyana led the CARICOM delegation to the Shanghai Expo 2010 along with the PM of St. Kitts & Nevis and the PM of Grenada in July 2010. The CARICOM-Japan meeting and the CARICOM-Cuba Ministerial meeting were held in September 2010. Haiti-CARICOM meeting was held in July, 2011, Barbadian Prime Minister met CARICOM-SG in November, 2011, CARICOM-Cuba summit was held in December, 2011, UK-Caribbean Ministerial Forum in January, 2012 and CARICOM-Chile Joint Commission was held in Feb 2012. The Second US- Caribbean Security Cooperation Dialogue in November 2011. Most of the resident and non- resident Ambassadors and High Commissioners accredited to Guyana are also accredited to CARICOM.

The Conference of Heads of Government is the Supreme Organ of the Community and consists

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of Heads of States/Governments of all Member States (Chief Minister in case of Montserrat). The Conference determines and provides policy direction for the Community. It is the final authority for conclusion of treaties and entering into relationships with International Organizations and States. 32nd regular meeting of the Conference of Heads of Government of the Caribbean Community was held in St Kitts and Nevis from 1-4 July, 2011. The Principal Organs of the Community are:

- (i) Conference of Heads of Government and its Bureau
- (ii) Community Council of Ministers

There have been increasing concerns among member States over the governance structure of the Community and a special committee was formed at the Summit in Jamaica in July 2010 for reform of the structure with the mandate to report at the next session in November 2010. However, no progress on this front was reported to have been made.

The Community has four organs (now five) and three bodies, viz.

- (i) Council for Finance and Planning (COFAP)
- (ii) Council for Foreign and Community Relations (COFCOR) (iii) Council for Human and Social Development (COHSOD) (iv) Council for Trade and Economic Development (COTED)
- (v) Council of Ministers responsible for National Security & Law Enforcement and
 - (i) Legal Affairs Committee
 - (ii) Budget Committee
- (vi) (iii) Committee of the Central Bank Governors

Besides, there are eight Institutions of the Community:-

- (i) Assembly of Caribbean Community Parliamentarians (ACCP)
- (ii) Caribbean Agriculture Research and Development Institute (CARDI) (iii) Caribbean Centre for Development Administration (CARICAD)
- (iv) Caribbean Disaster Emergency Response Agency (CDERA) (v) Caribbean Environmental Health Institute (CEHI)
- (vi) Caribbean Food and Nutrition Institute (CFNI) (vii) Caribbean Meteorological Institute (CMI)
- (vii) Caribbean Meteorological Organisation (CMO)

There are many institutions within the Community with which CARICOM has functional cooperation, e.g.,

- (i) Caribbean Aviation Safety and Security Oversight System (CASSOS) (ii) Caribbean Community Climate Change Centre (CCCCC)
- (iii) CARICOM Implementing Agency for Crime and Security (IMPACS) (iv) Caribbean Examinations Council (CXC)
- (v) Caribbean Organisation of Tax Administrators (COTA) (vi) Caribbean Regional Fisheries Mechanism (CRFM)
- (vii) Caribbean Telecommunications Union (CTU) (viii) Council of Legal Education (CLE)
- (ix) Caribbean Development Bank (CDB) – Given Tripple ‘A’ rating by Standard & Poor

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- (x) University of Guyana (UG)
- (xi) University of the West Indies (UWI)

India and CARICOM

The High Commissioner of India in Georgetown is accredited as Ambassador to CARICOM headquartered at Georgetown. India established formal relation with CARICOM as a continuation of its diplomatic relations with the individual members of CARICOM. A CARICOM delegation under the leadership of Hon'ble K.D. Knight, Minister of Foreign Affairs and Trade of Jamaica and the then Chairman of the Community Council, visited India in November 2003. The major outcome of the visit was that an agreement was signed between India and CARICOM Secretariat for establishing a Standing Joint Commission on Consultation, Cooperation and Coordination.

The first meeting of India-CARICOM Foreign Ministers was held on 15th February 2005 at Paramaribo (Suriname) on the sidelines of CARICOM Summit. Indian delegation was led by the Minister of State in the Ministry of External Affairs, whereas Foreign Minister of Barbados headed the CARICOM delegation. Possible areas of cooperation identified at this meeting included India's membership of the Caribbean Development Bank (through which India would be able to co-finance development and integration projects in the region), promotion of trade in goods, services and investments with greater Indian participation in Caribbean infrastructure development and regional investment, supply of retroviral drugs for fighting HIV/AIDS. CARICOM has also requested India's contribution to CARICOM Development Fund (CDF) that was established in 2008 to fund economic activities with the CARICOM region.

Government of India funded the US\$ 1.166 million information technology and communication infrastructure, computer software and community studio at the CARICOM Secretariat in 2005-2006. Government of India also provides a few slots annually to CARICOM Secretariat – independent of the slots provided to member States – for courses in India under the ITEC programme.

5. India and the Commonwealth

The London Declaration of 1949 established the modern Commonwealth. In 1965, the Commonwealth Secretariat was established in London, which became the association's independent civil service, headed by a Secretary-General. India is the largest member state of the Commonwealth, with nearly 60% of the total population of the association. It is the fourth largest contributor to the Commonwealth budget and programmes. It provides the largest number of technical experts engaged by the Commonwealth Fund for Technical Cooperation extending assistance to developing Commonwealth countries after the UK. India is a member of key Commonwealth bodies, including the Steering Committee on Commonwealth Connects (earlier Commonwealth Action Programme for the Digital Divide), the Standing Committee on Terrorism, the Commonwealth Advisory Board on Sports, the Grants Committee of the Commonwealth Foundation as well as the Executive and Accreditation Committees of the Commonwealth Secretariat's Board of Governors.

India hosted the Commonwealth Heads of Government Meeting (CHOGM) in 1983 in New Delhi. India hosted the annual Commonwealth Parliamentary Association Conference in 1957, 1975, 1991 and 2007. India also hosted the Conference of Commonwealth Speakers and Presiding Officers in January, 2010. In the arena of sports, India hosted the Commonwealth Youth Games in Pune in October 2008 and the XIX Commonwealth Games in October 2010 in New Delhi. In the 2010 Commonwealth Games which marked the first time the Games were hosted by India, about 7000 athletes from 71 Commonwealth nations and territories participated. India, by winning 101 medals,

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including 38 gold medals, gave its strongest performance ever in the history of the Commonwealth Games to emerge as the second highest medal winner behind Australia.

The present Commonwealth Secretary General, Shri Kamallesh Sharma assumed office on April 1, 2008. He is the first Indian to be elected as Secretary General of the Commonwealth. His first term will be coming to an end in March 2012 and accordingly, Heads of Government will consider his candidature for a second term at the CHOGM in Perth, Australia in October 2011.

CHOGM 2011

The next CHOGM will be held in Perth, Australia from 28-30 October, 2011. The special theme of CHOGM 2011 is 'Building National Resilience, Building Global Resilience'. In addition to the special theme, Heads of Government are expected to discuss a whole gamut of issues ranging from the global economic situation and food security to climate change, sustainable development, trade, poverty alleviation and reform of the Commonwealth.

Significance of the Commonwealth to India

India has a natural partnership with the Commonwealth. It is a community of English speaking countries having a common law system. It has a preponderance of developing countries which want to promote South-South cooperation. It is an association which puts a premium on democracy, rule of law and good governance, where India has much to share with others. It provides a platform to interact and build consensus within a very diverse group of countries, including developed and developing countries and a number of Small States⁷. A large number of Commonwealth countries also have a sizeable population of persons of Indian origin. The promotion, maintenance and strengthening of healthy democratic institutions and rule of law in these countries is relevant to India.

Though the UN remains the principal forum for multilateral action, the Commonwealth is eminently placed to address many issues through its unique style of functioning which is based on consensus-building, informality and goodwill. The informal ways in which dialogue is conducted and decisions arrived at in the Commonwealth bodies provide a very good basis for addressing common concerns on relevant international issues. The Commonwealth also provides a unique opportunity for interaction with many Small States from the Pacific and the Caribbean in an informal setting.

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JNNURM: SERVING THE URBAN POOR

Cities and towns of India constitute the world's second largest urban system. They contribute over 50% of country's Gross Domestic Product (GDP) and are central to economic growth. For these cities to realize their full potential and become true engines of growth, it is necessary that focused attention be given to the improvement of infrastructure and basic services to the poor therein. For achieving this objective, the Jawaharlal Nehru National Urban Renewal Mission (JNNURM) was launched on 3rd December, 2005. The Ministry of Housing & Urban Poverty Alleviation is implementing the Sub-Mission on Basic Services to the Urban Poor (BSUP) and the Integrated Housing & Slum Development (IHSDP) for smaller towns/cities under JNNURM. The basic objective is to strive for holistic slum development with a healthy and enabling urban environment by providing adequate shelter and basic infrastructure facilities to the slum dwellers of the identified urban areas. Basic Services would include improved housing, water supply, sanitation and ensuring delivery through convergence of other already existing universal services of the Government such as education, health and social security. Following are the highlights of achievements under BSUP & IHSDP."

More than 1.61 million houses sanctioned (16,15,775).

1536 projects of housing and basic amenities to the urban poor with an outlay of more than Rs 40,914 crores approved with the Additional Central Share (Grant) of Rs.

22,116.28 crores committed.

ACA of Rs. 11481.52 crores has been released.

All States and 64 Mission Cities are covered under BSUP.

872 medium and small cities/towns are covered under IHSDP so far.

About 4.71 lakh houses have been completed.

4.10 lakh houses are in progress

2.57 lakh houses have been occupied

Progress of 3 key reforms under JNNURM is largely on track

Other Highlights of the programme so far:

Financial support for setting up of Programme Management Units (PMUs) in 27 States/ UTs has been approved to assist States in monitoring BSUP, IHSDP and other urban poverty alleviation/slum development schemes. 22 PMUs have so far been established and the rest are under process.

Financial support for setting up of 119 Project Implementation Units (PIUs) has also been approved at the City/ULBs levels to assist cities/project implementing agencies in monitor BSUP, IHSDP and other urban poverty alleviation/slum development schemes. 95 PIUs have so far been established and the rest are under process.

A framework for Third Party Inspection and Monitoring (TPIM) has been established and 30 agencies for independent third party inspection and monitoring have been empanelled by Mission Directorate. TPIMs for 18 States, namely Andhra Pradesh, Chhattisgarh, Delhi, Gujarat, Haryana, Himachal Pradesh, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Manipur, Orissa, Puducherry, Rajasthan, Tamilnadu, Uttar Pradesh, Uttarakhand and West Bengal have been approved.

In furtherance of the objective of ensuring quality of projects under BSUP and IHSDP, two Agencies have been engaged at the Central level after selecting 126 projects on sample basis from the States/ULBs for purpose of TPIM by Government of India.

An Online JNNURM tracking system as part of an Integrated Poverty Monitoring System (IPoMS) is developed and is under implementation. 20 States have adopted IPoMS so far and sending key progress reports online.

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States have been exhorted to start preparations for social audit of projects under BSUP & IHSDP. The Manual for Social Audit has been circulated to States/UTs for initiating a process of social audit with the involvement of beneficiaries, reputed NGOs and other stakeholders.

Financial assistance is being provided for training and capacity building programmes for personnel at various levels and supporting the establishment of National/Regional/State Urban Resource Centers to promote the development of institutional capacity.

Guidelines on financial support for funding various activities related to 'Project Implementation and Quality Assurance' and 'Community Mobilisation' relating to BSUP/ IHSDP Projects under JNNURM circulated to all States.

More than 200 capacity building/handholding programmes have been conducted across the country and more than 15,500 State/parastatal/local body officials trained in project formulation, design, implementation and monitoring.

EXTERNAL DEBT: DEFINITIONS AND CONCEPTS

A. External Debt

Gross external debt, at a point in time, is defined as "the outstanding amount of those actual current, and not contingent, liabilities that require payment(s) of principal and/or interest by the debtor at some point(s) in the future and that are owed to non-residents by residents of an economy" (External Debt Statistics -Guide for Compilers and Users, International Monetary Fund (IMF), 2003).

B. Original and Residual Maturity

Original maturity is defined as the period encompassing the precise time of creation of the financial liability to its date of final maturity.

Debt by residual maturity (or remaining maturity) includes short term debt by original maturity of up to one year, combined with medium to long term debt repayment by original maturity falling due within the twelve month period following a reference date. External debt is commonly expressed in terms of original maturity.

C. Long and Short-term
One way of classifying external debt is into long and short-term. Long term debt is defined as debt with an original maturity of more than one year, while short term debt is defined as debt repayments on demand or with an original maturity of one year or less.

The coverage of short-term was redefined from 2005-06 by including supplier's credit upto 180 days and FII investment in the Government Treasury Bills and other instruments and further in March 2007 by including external debt liabilities of the banking system and the investment in the Government securities by the foreign central banks and the international institutions.

D. Multilateral and Bilateral Debt

Multilateral creditors are primarily multilateral institutions such as the International Development Association (IDA), International Bank for Reconstruction and Development (IBRD), Asian Development bank (ADB) etc. Bilateral creditors are sovereign countries with whom sovereign and non-sovereign entities enter into one-to-one loan arrangements. Some of India's bilateral creditors who extend loans to both sovereign and non-sovereign debtors include Japan, Germany, United States, France, Netherlands, Russian Federation etc.

E. Sovereign (Government) and Non-Sovereign (Non-Government) debt

Sovereign debt includes (i) external debt outstanding on account of loans received by

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Government of India under the 'external assistance' programme, and civilian component of Rupee Debt; (ii) other Government debt comprising borrowings from IMF, defence debt component of Rupee debt as well as foreign currency defence debt and (iii) FII investment in Government Securities. Non-sovereign includes the remaining components of external debt.

F. Trade Credits/Export Credits

Trade credits/Export credits refer to loans and credits extended for imports directly by overseas supplier, bank and financial institution to sovereign and non-sovereign entities. Depending on the source of finance, such credits can be either suppliers' credit or buyers' credit.

Suppliers' Credit: Such credit is extended by the overseas supplier of goods in the form of deferred payments.

Buyers' Credit: Such credit is provided by a bank or financial institution and is generally governed by OECD consensus terms and carries insurance from export credit agency of the concerned country.

G. External Commercial Borrowings

The definition of commercial borrowing includes loans from commercial banks, other commercial financial institutions, money raised through issue of securitized instruments like Bonds (including India Development Bonds (IDBs) and Resurgent India Bonds (RIBs)), Floating Rate Notes (FRN) etc. It also includes borrowings through Buyers' credit & Supplier credit mechanism of the concerned countries, International Finance Corporation, Washington [IFC (W)], Nordic Investment Bank and private sector borrowings from Asian Development Bank (ADB).

H. NRI Deposits

Non-Resident Indian (NRI) deposits are of three types:

Non Resident (External) Rupee Account {NR(E)RA} Deposits were introduced in 1970. Any NRI can open an NRE account with funds remitted to India through a bank abroad. A NRE account maintained in Indian rupee may be opened as current, savings or term deposit. The amount held in these deposits together with the interest accrued can be repatriated.

Foreign Currency Non Resident (Banks) Deposits {FCNR (B)} were introduced with effect from May 15, 1993. These are term deposits maintained only in Pound Sterling, U.S. dollar, Japanese Yen, Euro, Canadian dollar and Australian dollar. The minimum maturity period of these deposits was raised from six months to 1 year effective October 1999. From July 26, 2005, banks have been allowed to accept FCNR (B) deposits up to a maximum maturity period of five years against the earlier maximum limit of three years.

Non-Resident Ordinary Rupee (NRO) Accounts – Any person residing outside India may open and maintain NRO account with an Authorised dealer or in authorised bank for the purpose of putting through bonafide transactions denominated in Indian Rupee. NRO Accounts may be opened/maintained in the form of current, saving, recurring or fixed deposits. NRI/Persons of Indian Origin (PIO) may remit an amount not exceeding USD 1 million per financial year out of the balances held in NRO Accounts.

I. Concessional Debt

Generally, a loan is defined as 'concessional' when it carries a grant element of 25 per cent or more. In India, loans from multilateral (the International Development Association (IDA), International Fund for Agricultural Development (IFAD)) and bilateral sources (including rupee debt that is serviced through exports) is categorized as 'concessional', based long maturity and less-than-market rates of interest charged on them.

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J. Debt Service Ratio

Debt service ratio is measured by the proportion of total debt service payments (i.e. principal repayment plus interest payment) to current receipts (minus official transfers) of Balance of Payments (BoP). It indicates the claim that servicing of external debt makes on current receipts and is, therefore, a measure of strain on BoP due to servicing of debt service obligations.

CITIZENS CHARTER BILL

"The Right of Citizens for Time Bound Delivery of Goods and Services and Redressal of their Grievances Bill, 2011" is a step forward towards good governance. The salient features of the Bill are:

Right to Citizens

It confers right on every individual citizen to time bound delivery of goods and provision for services and Redressal of grievances.

Publication of Citizens Charter

It requires every public authority to publish, within six months of the commencement of the proposed legislation, a Citizens Charter specifying therein the category of goods supplied and services rendered by it, the time within which such goods shall be supplied or services be rendered the name and addresses of individuals responsible as designated officers for the delivery of goods or rendering of services.

Information and Facilitation Centre

It requires every Public Authority to establish information and facilitation centre for efficient and effective delivery of services and redressal of grievances.

Grievance Redress Officer

It requires every public authority to designate Grievance Redress Officers in all public authorities of the Central, State, district and sub-district levels, municipalities, Panchayats etc. to enquire into and redress any complaints from citizens in a timeframe not exceeding thirty days from the date of receipt of the complaint.

Designated Authority

It provides that any individual aggrieved by a decision of the concerned Grievance Redress Officer may, within thirty days, prefer an appeal to the Designated Authority who shall dispose of such appeal within thirty days from the date of receipt of such appeal. The Designated Authority shall be from outside the concerned public authority.

State/Central Public Grievance Redressal Commission

It provides for constitution of the State Public Grievance Redressal Commission and the Central Public Grievance Redressal Commission consisting of Chief Commissioners and other Commissioners.

It also provides that any person aggrieved by the decision of the Designated Authority falling under the jurisdiction of the State Government may prefer an appeal to the State Public Grievance Redressal Commission and any person aggrieved by the decision of the Designated Authority falling under the jurisdiction of the Central Government may prefer an appeal to the Central Public Grievance Redressal Commission.

Penalty and Compensation

It confers power upon the Designated Authority, the State Public Grievance Redressal

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Commission and the Central Public Grievance Redressal Commission to impose a lump-sum penalty, including compensation to the complainant, against designated official responsible for delivery of goods and services or Grievance Redress Officer for their failure to deliver goods or render services to which the applicant is entitled, which may extend upto fifty thousand rupees which shall be recovered from the salary of the official against whom penalty has been imposed.

It also provides that on the imposition of the penalty, the appellate authority may, by order, direct that such portion of the penalty imposed under the proposed legislation shall be awarded to the appellant, as compensation, not exceeding the amount of penalty imposed, as it may deem fit.

Disciplinary action against Erring Officials

It provides that if any public servant is found guilty of offence, the disciplinary authority shall initiate disciplinary proceedings against such officer of the public authority, who if proved to be guilty of a mala fide action in respect of any provision of this Act, shall be liable to such punishment including a penalty as the disciplinary authority may decide.

Action against Corrupt Practices

It provides that where it appears to the Designated Authority or the State Public Grievance Redressal Commission or the Central Public Grievance Redressal Commission that the grievance complained of is prima facie indicative of a corrupt act or practice in terms of the Prevention of Corruption Act 1988, on the part of the responsible officer of the public authority complained against then it shall record such evidence as may be found in support of such conclusion and shall refer the same to the appropriate authorities competent to take cognizance of such corrupt practice.

Appeal to Lokpal/Lokayukta

It provides that any person aggrieved by the decision of the Central Public Grievance Redressal Commission or the State Public Grievance Redressal Commission, which contains the findings relating to corruption under Prevention of Corruption Act, 1988, may prefer an appeal to the Lok Pal or Lokayukta, constituted under the Lokpal and Lokayukta Act, 2011.

PUBLIC EXPENDITURE REFORMS

Public Expenditure in the Government is managed as per the Appropriation Act which is passed by the Parliament every year. Based on the estimates of expenditure as presented in the Annual Financial Statement, Demands for Grants are presented for the approval of the Parliament. Thereafter, Ministries/Departments seek the approval of Parliament on their respective Detailed Demands for Grants (DDG) that gives service wise estimates of expenditure. During the financial year, expenditures are incurred in accordance with the estimates approved in the DDGs. For the formulation of these estimates to be presented in the Budget, extensive consultations are held with the respective departments/ministries in meetings chaired by Secretary (Expenditure) in which the Internal Financial Units of the respective ministry/ department, headed by the Financial Advisers and the functional heads in the ministries/ departments participate. The Central Government has embarked upon a fiscal consolidation programme to bring down its fiscal deficit over a period of time. With the reduction of the fiscal deficit, it is expected that the debt stock of Government would stabilize within acceptable limits. This would further reduce the interest payments that Government has to

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incur every year, thereby freeing more resources for development spending.

The expenditure of Central Government comprises of certain committed items like salaries, pension, interest payments, Defence etc. One of the important aspects of the salary and pension expenditure of the Government is the impact of revision in the salary structure of employees and the arrears arising out of implementation of Pay Commissions' recommendations. This usually happens once in ten years when Pay Commission recommendations are implemented with retrospective effect. This aspect was also analysed by 13th Finance Commission (FC) which recommended that awards of Pay Commissions should be made to commence from the date on which the recommendations of future Pay Commissions are accepted by the Government.

The 13th FC has further stated that since Finance Commissions are able to present their inter-governmental recommendations without any need for retrospective fiscal transactions, the same should be possible in the case of Pay Commissions as well. The three major subsidies provided by Central Government are Food, Fertilizer and Petroleum Subsidies. Over the years, the subsidy bill of Government has been increasing rapidly and its share in the total expenditure of the Government has become a matter of concern. At present, the subsidy paid by the Government is routed through the provider of the goods and services that are subsidized. For better targeting of subsidy, the Central Government is moving towards a system in which the subsidy amount is directly given to the intended beneficiary.

To implement a solution to the above and to evolve a model of direct transfer of subsidies on Kerosene, LPG and Fertilizers, by re-engineering existing systems, processes and procedures in the implementation process, designing appropriate IT systems and aligning these with the issuance of UID numbers, and bringing about changes in the administration and supply chain management, the Government has constituted a Task Force under the Chairmanship of Shri. Nandan Nilekani, Chairman, Unique Identification Authority of India (UIDAI). Government has also constituted a High Level Expert Committee (HLEC) to suggest measures for efficient management of public expenditure under the Chairmanship of Dr. C. Rangarajan. The HLEC has made recommendations on fundamental aspects of public finance that are under consideration. The Budget of Central Government is a statement of fiscal allocations and has no disclosures on the corresponding outcomes achieved.

The disclosure on outcome had been attempted through separate exercises that report on the outcome achievements separately. Outcome Budget was started in Government consequent to the announcement of the Finance Minister in the budget speech for 2005-06. Detailed guidelines for the Outcome Budget presented by every Ministry in respect of every demand, except those explicitly exempted from doing so, for plan as well as non plan expenditure, are issued by Department of Expenditure every year.

The Performance Monitoring and Evaluation System (PMES) is a system of performing management and reporting which was started from the year 2009-10. Under PMES, each department is required to prepare a Results-Framework Document (RFD). RFD provides a summary of the most important results that a department/ministry expects to achieve during the financial year. This document has two main purposes: (i) move the focus of the department from process-orientation to results-orientation, and (ii) provide an objective and fair basis to evaluate department's overall performance at the end of the year. These measures have increased the transparency in reporting of performance on outcomes. For improving quality of expenditure on schemes, it is very important to ensure that there is robust performance evaluation and reporting mechanism that is tightly linked with the budgeting process and financial decision making. In long term, this would ensure that scarce public resources are optimally utilized for those activities that provide maximum benefit with least cost.

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The Plan expenditure of the Government can be divided into Central Plan and Assistance to State Plans. Central Plan consists of Central Plan Schemes and Centrally Sponsored Schemes (CSS) that are implemented by States. There is a need to rationalize schemes within a Ministry and across Ministries. Rationalisation of both plan and non plan schemes would require dropping of schemes which have out lived their utility, while taking up new schemes. Regular Monitoring and Evaluation of schemes and incorporating changes required to address issues observed during evaluation is extremely essential to ensure that the quality of expenditure is maintained. There are various initiatives taken at Central Government level that have this objective. Programme Evaluation Organisation of the Planning commission regularly evaluates the programmes of Government. It has various Regional and Programme Evaluation Office in the country.

Towards this objective, Cabinet, in November 2010 has approved setting up of an Independent Evaluation Office attached to the Planning Commission. The Comptroller and Auditor General of India also conducts performance audit of the activities of the Government, which analyses the aspects of economy, efficiency and effectiveness of Government activities.

Monitoring and evaluation also includes monitoring the trend and pace of expenditure on schemes. The Central Plan Scheme Monitoring System (CPSMS), which provides real time information on the status of plan schemes of the Government, is an important initiative in this regard. There is a need to strengthen this system to provide more information on expenditure and utilization under plan schemes.

C-BAND POLARIMETRIC DOPPLER RADAR- BETTER

Radars will not tell you if it is going to rain tomorrow. However, when something arises on the horizon and that cloud floats to your city, the Polarimetric Doppler radar will be at your service with precise information with estimated rain, storm structure, snow rates etc. The First C-Band Polarimetric Doppler Radar of the country started working in Delhi on January 15th, 2012 i.e. from the 137th Foundation Day of India Meteorological Department. Most weather radars transmit radio wave pulses that have a horizontal orientation. Polarimetric radars transmit radio wave pulses that have both horizontal and vertical orientation. The horizontal pulses essentially give a measure of the horizontal dimension of cloud (cloud water and cloud ice) and precipitation (snow, ice pellets, hail and rain) particles while the vertical pulses essentially give a measure of the vertical dimension. Since the power returned to the radar is a complicated function of each particle size, shape and ice density, this additional information results in improved estimates of rain, snow rate, better detection of large hail location in storms, and improved identification of rain/snow transition regions in winter storms.

Doppler radar has added capability of being able to measure a frequency shift that is introduced into the reflected signal by the motion of the cloud and precipitation particles. This frequency shift is then used to determine wind speed. The C-Band Polarimetric Doppler Radar at Delhi has the latest state of the art technology used for weather surveillance. It uses advanced algorithms to generate information which is vital for detecting severe weather phenomena such as rain, hail storm etc., with greater accuracy. Due to this additional information it is very useful to issue weather forecasts and warnings for events which are likely to occur within short period of time also known as nowcasting.

Variables Measured

The C-band Polarimetric radar has capability to measure mainly four variables such as Differential

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Reflectivity, Correlation Coefficient, Linear Depolarization ratio and Specific Differential Phase. Besides this, total and horizontal Reflectivity, Radial velocity, Spectral width and Hydromet classification will be measured.

The Differential Reflectivity (ZDR) indicates ratio of the reflected horizontal and vertical power returns. Among other things, it is a good indicator of drop shape. In turn the shape is a good estimate of average drop size. Cross Correlation Coefficient (Rho-HV) is a statistical correlation between reflected horizontal and vertical power returns. It is an indicator of regions of precipitation types, such as rain and snow. It is prominently used for hydrometeor classification. Differential Phase (Phi-DP) and Specific Differential Phase is a comparisons of the returned phase difference between horizontal and vertical pulses, caused by the difference in number of wave cycles (wavelengths) along the propagation path for horizontal and vertically polarized waves. This normalized to a standard displacement is termed as Specific Differential Phase (KDP) which directly correlates with the "propagation effect" and a good estimator of rain rate as it is independent of calibration, and other radar related parameters. It will measure Total Reflectivity (TH) which is measured in the horizontal plane in logarithmic scale equated relative to 1 mm drop in meter cube, without any correction and filtering of unwanted echoes. Horizontal Reflectivity (ZH) is the corrected Total Reflectivity (ZH) for ground returns, non perceptible echoes, interferences, and enhancing the signal quality through signal qualifiers of LOG(weather data gathered in a scientific, consistent manner), SQI (Special Qualification Identifiers), CSR (Coherent Scatter Radars which operate in the frequency range between ionosondes and ISRs who scatter off thermal fluctuations in the plasma) etc. Radial Velocity (V) will be measured which is the Reflectivity averaged radial velocity of the scatterer. Colour coded analogous to frequency red shift in astronomy, i.e. red colour echoes moving away and cool colours moving towards radar will be analyzed. Spectral Width (W) will be measured which is the spread of the return signal attributed directly to the turbulence of the atmosphere. Hydromet Classification (HCLASS) is a special Higher signal processing capability with which radar classify the echoes during data acquisition, based on other moments and proven algorithms employing fuzzy logic.

Benefits

The improvements associated with polarimetric Doppler radars come with their ability to provide previously unavailable information on cloud and precipitation particle size, shape, and ice density. It is independent of calibration errors and has fine tuning. It will greatly help meteorologists, hydrologists, aviation users and society. Polarimetric radar will significantly improve the accuracy of estimates of amount of precipitation (snow, ice pellets, hail and rain). It will now tell difference between very heavy rain and hail, which will improve flash floods watches and warnings and disaster management. The sudden, ferocious thunder storms lash the eastern part of India, particularly the north-east region and states of Jharkhand, Orissa, West Bengal and Bihar during the month of Baisakh (April- May) at regular interval. This kal-Baisakhi take great toll on lives and property. The C-band Polarimetric radar will be a boon to give indication of kal-baisakhi. It will also contribute to increased lead time in flash floods and winter weather hazard warnings and severe hazards like thunder storms, kal- Baisakhis and cyclonic circulations. It has better ability to correct signal attenuation due to atmosphere including attenuation due to rain in cyclonic wall clouds.

Due to advanced algorithms and software which uses polarimetric data, it will generate better estimates of rainfall. Rainfall in catchment areas of dams can be monitored. It will provide critical rainfall estimation information for stream flow hence is very useful for hydrological studies. It will be useful in water management. It will detect aviation hazards such as birds (ornithological echoes), insects etc. It is able to identify no-meteorological echoes with better accuracy than conventional radars. (PIB Feautre).

BIOMASS - A STOREHOUSE OF CLEAN ENERGY

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Agriculture continues to be the main source of livelihood for a large part of population in the country. Biomass, thus, is readily available widely across the country, thereby, overcoming regional limitations. Biomass, which implies biological material from living or recently living organisms, can be used as an important source of energy. It is a renewable and carbon natural source of energy. Biomass resources in India are estimated to be about 565 million tonnes per year. It includes agriculture residues and forest residues. Agriculture residues result from crop harvesting and processing. They include rice husk, bagasse, sugar cane tops and leaves, groundnut shells, cotton stalks and mustard stalks. Forest residues result from logging and wood processing. They include small trees, branches, tops and un-merchantable wood left in the forest.

The surplus biomass resources available for power generation annually are about 189 million tonnes, which could support roughly 25 GW of installed capacity. Further, co-generation plants provide both heat energy, used in the mill, and electricity, which is typically sold to the grid. It is estimated that about 15 GW of electricity generating capacity could be achieved through adding cogeneration capabilities in various industries including sugar mills, breweries, textile mills, distilleries, fertilizer plants, pulp and paper mills, and rice mills. In addition, there exists a potential of setting up 12 million family type biogas plants.

A. Types of Biomass

Biomass includes three distinct categories:

Solid Biomass, which includes tree, crop residues like rice husk, bagasse, coconut shells, jute waste, etc. and animal and human waste.

Biogas which is obtained by anaerobically digesting organic material to produce combustible gas methane.

Liquid biofuels which are obtained by subjecting organic materials to one of various chemical or physical processes to produce usable combustible liquid fuels.

B. Biomass Conversion To Useful Energy

A number of technological options are available to make use of a wide variety of biomass types as a renewable energy source. Conversion may release energy directly in the form of heat/electricity or, may convert it into another form such as liquid biofuels or combustible biogas. There are basically three types of conversions:

Thermal Conversion- A process in which heat is used to convert biomass into another chemical form.

Chemical Conversion - A range of chemical processes may be used to convert biomass into other forms so that fuel may be used more conveniently, transported or stored. **Biochemical Conversion**- It involves anaerobic digestion fermentation and

composting.

C. Benefits Of Using Biomass

It reduces air pollution as biomass emits less Sulphur dioxide and Nitrogen Oxide than fossil fuels. Further, biomass fuels recycle atmospheric carbon, minimizing global warming impacts since zero net Carbon dioxide is emitted during biomass growth phase. Amount of carbon dioxide emitted is equal to the amount of carbon dioxide absorbed from atmosphere during growth phase of biomass.

Using biomass decreases animal and municipal waste. Through anaerobic digestion process biomass in the form of waste is converted into useful energy.

Using biomass as fuel reduces the landfill space required to dump the woody

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biomass, lumber mill waste, etc.

It helps in creating local jobs in a rural areas.

Presently, biomass contributes to around 30% of the total primary energy supply in the country. The major source of energy for cooking for 85% of households in rural India includes firewood, chips, dung cake, etc. Moreover 20% of urban households still rely primarily on traditional fuels to meet their cooking needs.

The Ministry of New and Renewable Energy (MNRE) has initiated various schemes and also promoted various NGOs to work in the field of energy from biomass. The initiatives can broadly be classified into two categories:

Rural Areas Initiatives: National Biomass Cookstove Initiative(NBCI); Family Type Biogas Plant; Biomass Gasification System.

Urban Areas Initiatives: Programme for Energy Recovery from Urban Waste; Biomass Gasifiers and Biomass Cogeneration (Non-Bagasse) Projects.

D. Rural Areas Initiatives

National Biomass Cookstove Initiative(NBCI): In rural areas a large percentage of population continues to depend on biomass. Clean and efficient energy is provided for energy deficient section of population through smokeless chulha, where different types of fixed and portable cookstoves are made available to rural household. In a case study on various Dhabas and roadside hotels in Andhra Pradesh, it was observed that fuel efficient stoves installed were able to conserve about 50-60% of fuel as compared to traditional stoves. There was reduction of smoke and thus increase in productivity with a positive impact on environment.

Family Type Biogas Plant: In family type biogas plants cattle and other organic wastes are used to produce energy and manure. India supports the largest cattle wealth and this scheme helps to answer the growing energy crisis. In this technology, anaerobic fermentation of biodegradable materials such as biomass, sewage, green waste, etc. is done to produce biogas which mainly comprises of methane and carbon dioxide. This biogas is used for cooking purposes in the households.

The National Programme on biogas development has multiple benefits. It helps to save tonnes of fuel wood every year. Biogas technology provides energy in a clean and unpolluted form and makes available enriched organic manure as a by-product for supplementing and optimizing the use of chemical fertilizers. Now-a-days institutional and night-soil-based biogas plants are being deployed increasingly. Toilet linked biogas plants are coming up in places like bus stands and educational institutions.

Biomass Gasification System: In the scheme various biomass gasification systems are set up in rural areas to provide electricity supply in villages as well as develop the industries there. Various gasifiers fed on rice husk, wheat husk, maize, etc are set up in the area depending on the sustainable source of supply available from agriculture or plantation. In gasification process organic material is converted into methane, carbon monoxide, hydrogen, carbon dioxide. It is obtained by reacting the material at high temperature ($>700^{\circ}\text{C}$) without combustion with a controlled amount of oxygen / steam and the resulting gas mixture is called *Syngas* or *Producer Gas* which itself is a fuel.

India is known as an acknowledged leader in conversion of solid biomass into clean gaseous fuel. Small-scale biomass gasifiers of upto 500-600 KW capacity are eminently suited for off-grid electricity supply in our rural areas. A number of projects have already been initiated with private sector participation for supply of 6-8 hrs electricity daily through gasification for domestic lighting and 6-8 hrs

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for other commercial activities like water pumping for irrigation purposes and to micro enterprises and telecom towers. Projects are being carried out in Araria and Purnea districts of Bihar where Daincha/Ipomoea, maize residues and hardwood ensure perennial supply of feedstock.

Rice Husk based power generating units in the villages of West Champaran district in Bihar have been lighting up around 500-700 households spread over 20 villages in the district, and changing the profile of cluster altogether. The west Champaran experiment is supported by the Ministry and implemented by Husk Power System(HPS), an NGO.

The technology employed is simple: It uses the Husk based gasifier technology to provide electricity using 32kWe 'mini power plants' that deliver power on a 'pay-for-use' basis to households in rice producing belt of India. The price paid to procure electricity generated by these mini power plants is very low, Rs 2 per day per household, located within a radius of 1.5 km. It results in a reduction of consumption of kerosene by as much as two thirds. Power is supplied from 5 pm till midnight each day. Success of this initiative has led to further planning for installation of such plants in Samastipur and Lakhisarai. The Ministry of New and Renewable Energy has now plans to take up the rice husk based electricity systems on a 'Mission Mode'. It has enormous potential and even some of the larger rice mills can feed power to grid as well as distribute locally. More than 5000 to 10,000 industries can be benefitted in the next 2-3 years. These systems can lead to saving diesel to the tune of 200-250 million litres annually.

E. Urban Areas Initiatives

Biomass In Urban Areas and Commercial Applications: Crop residues and agro industrial wastes are used through biomass gasification technique for both electrical and thermal energy. Several industries like sugar, paper and pulp, fertilizers, food processing, etc. Require electrical as well as thermal energy for their operations. These requirements can be met through different energy sources or a single source. The simultaneous production of power and thermal energy from a single source is termed as Cogeneration. The Government is providing assistance for setting up of Biomass Gasification and Biomass Cogeneration (Non-Bagasse) Projects.

Programme For Energy Recovery From Urban Waste: According to a recent estimate, about 42 million tons of solid waste and 6000 million cubic meters of liquid waste are generated every year by our urban population. A total of 8 projects for energy recovery from urban waste i.e. an aggregate capacity of 19.05 MWeq have already been set up.

F. Biofuels

Biofuels are a type of fuel whose energy is derived from biological carbon fixation. It includes fuels derived from biomass conversion as well as solid biomass, liquid fuels and various bagasses. Biodiesel and bio-ethanol can be used as diesel additive and gasoline additive respectively. Biofuel development in India mainly centres around the cultivation and processing of JATROPHA plant seeds which are very rich in oil (40%). Jatropha oil can be used directly in diesel generators and engines. While a target of 20% blending of biofuels in diesel and petrol by the year 2017 has been indicated in the National policy on Biofuels announced in December 2009, a mandatory target of 5% blending of ethanol with petrol and recommendatory target of 5% blending of bio-diesel with diesel is in force since October 2009. Indian Railways has already started using Jatropha oil mixed with diesel for meeting the fuel requirements. The potential of biomass energy is yet to be exploited fully for India. Considering the nature and current growth of economy and the future trajectory of growth, optimal exploitation of biomass energy will offer a great respite to India at energy front. (PIB Feature).

SOLAR CITIES ON THE ANVIL

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Our country is passing through a phase of immense and rapid development and hence consequentially the rising demand for energy. Urbanization and industrial growth are only adding to the growing demand. But at the same time, there is also a thrust for using “clean and green” energy so as to reduce the green house gas emissions. Keeping in mind the need of the hour, the Ministry of New and Renewable Energy has initiated the programme of ‘Development of Solar Cities’. The programme has been designed to support/encourage Urban Local Bodies to prepare a Road Map to guide their cities in becoming ‘renewable energy cities’ or ‘Solar Cities’. The Solar City programme aims to consolidate all the efforts of the Ministry of New and Renewable Energy and address the energy problem of the urban areas in a holistic manner. The various initiatives of the Ministry which include promoting solar water heating systems in homes, hotels, hostels, hospitals and industry; deploying Solar Photo Voltaic (SPV) systems/devices in urban areas for demonstration and awareness creation; establishing ‘Akshya Urja Shops’; designing Solar Buildings and promoting urban and industrial waste/ biomass to energy projects would be streamlined under the programme. In a Solar City all types of renewable energy based projects like solar, wind, biomass, small hydro, waste to energy etc. will be installed in an energy efficient manner as well as commensurate with the requirements of the city. The Solar City aims at minimum 10% reduction in projected demand of conventional energy and increasing energy production through renewable energy. The basic aim is to motivate the local Governments for encouraging and adopting renewable energy technologies and energy efficiency measures. The Solar City would be identified on the premise of population; potential of renewable energy resources and energy conservation; initiatives taken by local governments as well as the general public and industry in the same arena. The cities may have population between 0.50 lakh to 50 lakh, however, relaxation is considered for special category States including North-Eastern States and hilly States, Islands and Union Territories. A total of 60 cities/towns were identified to be supported for development as Solar Cities during the 11th Plan period. At least one city in each

State to a maximum of five cities in a State may be supported by the Ministry as Solar City.

A. Aims of Solar City Programme

To enable and empower Urban Local Governments to address energy challenges at City - level.

To provide a framework and support to prepare a Master Plan including assessment of current energy situation, future demand and action plans.

To build capacity in the Urban Local Bodies and create awareness among all sections of civil society.

To involve various stakeholders in the planning process.

To oversee the implementation of sustainable energy options through public - private partnerships. The programme seeks to assist the Urban Local Governments financially as well as technically. The local governments would be encouraged to make Master Plan and provide institutional arrangements for it. The master plan of the city will include the base-line for energy consumption during the year 2008, demand forecasting for the years 2013 and 2018, sector-wise strategies and action plan for implementation of renewable energy projects so as to mitigate the fossil fuel consumption in the city. Proper awareness generation activities would be included in the scheme.

B. Financial Assistance

Under the programme, financial assistance up to Rs. 50.00 Lakhs per city/town is provided depending upon population and initiatives decided to be taken by the City Council/ Administration as per the following details:

Up to Rs 10.00 lakhs for preparation of a Master Plan within a year along with few implementable Detailed Project Reports.

Up to Rs. 10.00 lakhs for setting up of Solar City Cell and its functioning for a period of

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three years.

Up to Rs. 10.00 lakhs for oversight of implementation during three years.

Up to Rs. 20 lakhs for capacity building and other promotional activities to be utilized in three years. In addition, the financial and fiscal incentives available under various programmes of the Ministry are also applicable on the Solar Cities for installation of renewable energy projects, systems and devices.

C. Solar Cities

An in-principle approval has been given to 48 Cities for Solar Cities which include Agra, Moradabad in Uttar Pradesh, Rajkot, Gandhinagar, Surat in Gujarat, Nagpur, Kalyan-Dombiwali, Thane, Nanded, Aurangabad and Shirdi in Maharashtra, Indore, Gwalior, Bhopal and Rewa in Madhya Pradesh, Imphal in Manipur, Kohima and Dimapur in Nagaland, Dehradun, Haridwar-Rishikesh, Chamoli-Gopeshwar in Uttarakhand, , Gurgaon and Faridabad in Haryana, Coimbatore in Tamil Nadu, Vijaywada in Andhra Pradesh, Bilaspur and Raipur in Chhattisgarh, Agartala in Tripura, Guwahati and Jorhat in Assam, Hubli-Dharwad and Mysore in Karnataka, Thiruvananthapuram and Kochi in Kerala, Amritsar, Ludhiana and SAS Nagar Mohali in Punjab, Ajmer, Jaipur and Jodhpur in Rajasthan, Bhubaneswar in Orissa, Aizawl in Mizoram, Panji City in Goa, Itanagar in Arunachal Pradesh, Hamirpur and Shimla in Himachal Pradesh and Howrah in West Bengal and Chandigarh. Out of them sanctions have been issued for 38 cities namely Agra, Moradabad, Rajkot, Gandhinagar, Surat, Nagpur, Kalyan-Dombiwali, Thane, Aurangabad, Gwalior, Imphal, Kohima, Dimapur, Dehradun, Haridwar-Rishikesh, Chamoli-Gopeshwar, Chandigarh, Gurgaon, Faridabad, Coimbatore, Vijayawada, Bilaspur, Raipur, Agartala, Guwahati, Jorhat, Hubli-Dharwad, Mysore, Amritsar, Ludhiana, Jodhpur, Bhubaneswar, Aizawl, Panaji City, Itanagar, Hamirpur, Shimla and Shirdi. The Master Plans for 20 cities have already been prepared. Three cities namely Nagpur, Chandigarh and Gandhinagar are being developed as Model Solar Cities. *(PIB Feature.)*

IMPROVING THE JUSTICE DELIVERY SYSTEM IN THE COUNTRY

Several initiatives have been taken from time to time to improve the justice delivery system and for making it affordable and accessible to the common man all across the country. Increasing access by reducing delays and arrears in the system has also been the constant endeavor of the Union Government. These initiatives of the Union Government inter-alia include measures for strengthening the judicial system, reviewing the strength of the judges from time to time and setting up of part time/special courts, improving infrastructure in the courts and increasing use of ICT for court management as well as for providing citizen-centric services at all levels starting from Supreme Court/ High Courts to the district and subordinate courts. Some of the initiatives are as follows:

- a. The disposal of cases has been accelerated by undertaking special drives, the recent one being from 1st July, 2011 to 31st December, 2011. Of late, the Government has set up a National Mission for Justice Delivery and Legal Reforms which will be addressing the issues of delays and arrears in the judicial system as well enforcing better accountability at all levels through a variety of methods which will include setting and monitoring of performance standard, enhancement of capacity through training at various levels etc.
- b. Fast Track Courts were constituted as per the recommendations of the 11th Finance Commission. For these courts a provision of Rs. 502.90 crore was made for 2000-05. This scheme was extended later till 2010-11. As per the reports received, 1192 fast track courts were functional in the country as on 31.3.2011. Nearly 33 lakh cases were disposed of by the fast track courts

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over a period of 11 years of central assistance from 2000-01 to 2010-

11. The 13th Finance Commission has recommended a grant of Rs.5,000 crore for the states over a period of 5 years between 2010-2015. The amount will be provided as a grant to the States for various initiatives such as:

- (i) Increasing the number of court working hours using the existing infrastructure by holding morning / evening / shift courts;
 - (ii) Enhancing support to Lok Adalats to reduce the pressure on regular courts;
 - (iii) Providing additional funds to State Legal Services Authorities to enable them to enhance legal aid to the marginalized and empower them to access justice;
 - (iv) Promoting the Alternate Dispute Resolution (ADR) mechanism to resolve part of the disputes outside the court system;
 - (v) Enhancing capacity of judicial officers and public prosecutors through training programmes;
 - (vi) Supporting creation or strengthening of a judicial academy in each State to facilitate such training;
 - (vii) Creation of the post of Court Managers in every judicial district and High Courts to assist the judiciary in their administrative functions; and
 - (viii) Maintenance of heritage court buildings. An amount of Rs. 1,353.623 crore has already been released to the States on this account.
- A. Under the central sector scheme of Computerization of the District and Subordinate Courts (e-Courts Project) in the country and for up-gradation of the ICT infrastructure of the Supreme Court and the High Courts, a total of 9,914 courts (out of 14,229 courts) have been computerized in the country as on 31.03.2012. Remaining courts will be computerized by 31.3.2014. In the second phase, digitization, library management, e-filing and establishment of data warehouse are expected to be added to the ongoing computerization and citizen-centric services.
- B. The Gram Nyayalayas Act, 2008 has been enacted for establishment of Gram Nyayalayas at the grassroots level for providing access to justice to citizens at their doorstep. The Central Government is providing assistance to States towards non-recurring expenses for setting up of Gram Nyayalayas subject to a ceiling of Rs. 18.00 lakh per Gram Nyayalaya. The Central Government also provides assistance towards recurring expenses for running these Gram Nyayalayas subject to a ceiling of Rs. 3.20 lakh per Gram Nyayalaya per year for the first three years. As per the information received from the State Governments a total of 153 Gram Nyayalayas have already been notified so far. Out of these, 151 Gram Nyayalayas have already started functioning. An amount of Rs. 25.39 crore has been released to the State Governments for establishment of Gram Nyayalayas during last three years.
- C. A Centrally Sponsored Scheme for development of infrastructure facilities for the judiciary is being implemented since 1993-94 under which central assistance for construction of court buildings and residential quarters for judicial officers is released to augment the resources of the State Governments. The expenditure on the scheme is shared by the Centre and the State Governments on 75:25 basis, except for States in North East Region, which is on 90:10 basis. An expenditure of Rs. 1,841 crore has been incurred on this scheme up to 31.03.2012.
- D. For legal empowerment of the marginalized people in India an externally aided Project 'Access to Justice for Marginalized People in India' is being implemented in the selected 7 States, with the support of UNDP. These 7 States are: Bihar, Chhattisgarh, Jharkhand, Madhya Pradesh, Orissa, Rajasthan and Uttar Pradesh. The interventions under the Project are focused on strengthening access to justice for the poor, particularly women, Scheduled Castes, Scheduled Tribes, and minorities. The Project seeks, on the one hand, to improve the institutional capacities

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of key justice service providers to enable them to effectively serve the poor and disadvantaged. On the other hand, it aims to directly empower the poor and disadvantaged men and women to seek and demand justice services.

NANO MISSION - TOWARDS GLOBAL KNOWLEDGE HUB

Nano Technology is knowledge-intensive and 'enabling technology' which will influence a wide range of products and processes. It will have far-reaching implications for national economy and development. The Department of Science and Technology (DST) launched many initiatives over the period of time and Nano was one of them. DST launched a modest programme called Nano Science and Technology Initiative (NIST) in 2001 in Nano Sciences.

The Nano Mission is successor of this programme. The Government approved this as Nano Mission in 2007 with an allocation of Rs 1000/- crore for 5 years. The Nano Mission has been structured in a manner to achieve synergy between the national research efforts of various agencies in this field and launch new programmes in a concerted fashion. Today India has emerged 6th worldwide in terms of scientific publications. An active research community of about 1000 researchers has emerged. Besides, some interesting applications have already come out of the country.

Capacity building of the research is of utmost importance for Nano Mission so that India can emerge as a global knowledge hub. Large number of man power is getting prime attention in research and fundamental aspects of Nano science and training. Nano Mission is also striving for developments of products and processes for national development, especially in the area of national relevance like safe drinking water, materials development, sensors development, drug delivery etc. The objectives of Nano Mission include basic research promotion, infrastructure development, Nano applications and technology development, human resources development and international collaboration.

A. Basic Research Promotion

Basic research being carried out by individual scientist and /or groups of scientists will be funded. The Centers of excellence pursuing studies leading to fundamental understanding of matter that enables control and manipulation at the Nano scale will be created.

B. Infrastructure

For Research A chain of shared facility of expensive and sophisticated equipments required for various activities will be established across the country. Investigation on Nano scale require optical tweezer, Nano Indentor, Transmission Electron Microscope, Atomic Force Microscope, Scanning Tunneling Microscope, Matrix Assisted Laser Desorption Time of Flight Mass Spectrometer, Microarray Spotter and Scanner etc.

C. Nano Applications and Technology Development Programme

To catalyze Nano Application and Technology Development programme leading to products and devices, the Mission proposes to promote application-oriented R&D projects, establish Nano Applications and Technology Development Centers, Nano-Technology Business Incubators etc. The industrial sector is being involved directly or through Public Private Partnership ventures into this Mission.

D. Human Resources Development

The Mission will focus on providing effective education and training to researchers and professionals in diversified fields so that a genuine interdisciplinary culture for nanoscale science,

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engineering and technology can emerge. M. A. and M. Sc. programmes will be benefited. National and Overseas post-doctoral fellowships, chairs in universities are other aspects.

E. International Collaboration

Academia-industry partnership at the international level is one of the aspect under international collaboration. Besides, exploratory visits of scientists, organization of joint workshop, conferences and research projects, access to sophisticated research facilities abroad etc., are being achieved.

F. Structure and Activities

Nano Mission is steered by Nano Mission Council. The technical programmes are being guided by two advisory groups namely Nano Science Advisory Group (NSAG) and the Nano Applications and Technology Advisory Group (NATAG). Department of Science & Technology has supported a number of activities in Nano Science and Technology.

Individual scientists have been supported for R & D projects. Detailed technologies have been developed for the medical purposes. Membrane scaffolds for wound healing using chitin/ chitosan gels containing nanoparticles and nanoparticles for ophthalmic drug delivery have been developed by Amrita Institute of Medical Sciences, Kochi and Centre for Cellular and Molecular Biology, Hyderabad and USV, Mumbai respectively. Around 130 projects have been supported for individual scientists mainly working on fundamental scientific aspects of nanoscale system. Extensive studies on semiconductor nanocrystals have been undertaken in several projects. As semiconductor particles exhibit size-dependent properties like scaling of the energy gap and corresponding change in the optical properties, they are considered as technologically important materials. Several projects have looked into synthesis of important nano materials like CdSe, ZnO etc. Size tunable, organic soluble industrially important CdS, AlN, GaN and InN nanocrystals have been prepared by employing novel solvo thermal techniques and some soft chemical routes. The other discovery of flow of various liquids and gases over a mat of single-walled carbon nanotube (SWNT) bundles generate electrical signals. This has several important technological implications. Development of micro fluidic devices will have several applications in the fields of biotechnology, pharmaceutical industry, drug delivery, intelligent pneumatic systems, information technology etc. DST has established an array of sophisticated equipments to enable researchers to work with nanoscale system. Eleven Units/Core Groups on Nano Science have been sanctioned across the country. They house some of the more sophisticated facility for sharing with other scientists in the region and would help in promoting scientific research on nanoscale system in a decentralized manner.

Seven centres for Nano Technology focusing on development of specific applications and a centre for excellence on Computational Materials has also been established. Joint R & D activities are taking place with several countries. DST has also promoted Joint Institution-Industry Linked Projects and some other Public Private Partnership activities for human resource development. (*PIB Feature.*)

CELEBRATING BIODIVERSITY

Diversity of life (biodiversity) underpins the very existence and survival of human beings on this Planet. Even though, United Nations proclaimed May 22nd as the International Day for Biological Diversity (IDB), every day is critical to increase the understanding and awareness of biodiversity issues. The rich biodiversity is the base for good health, food security, economic growth, livelihoods security and moderating the climate conditions. The annual contribution of biodiversity to the world is estimated as US\$ 33 trillion per year. However, this precious natural asset is fast diminishing.

The theme for 2012 International Day for Biological Diversity is *Marine Biodiversity*. Coastal and

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marine biodiversity form the basis of survival for billions of people around the world today.

The ocean covers 71% of the surface area of the globe, and constitutes over 90% of the habitable space. Coastlines are supporting fragile ecosystems - mangroves, coral reefs, sea-grass and seaweeds. But the diversity of life in these areas is poorly understood and under-valued resulting in over-exploitation. Some of the marine species are disappearing and others are on the threat of extinction.

The economic and market potential of marine biodiversity is still not properly understood while prospects of marine diversity has increased manifold. The number of patents being taken on products and processes based on marine life is increasing by leaps and bounds every year. India has a coastline of about 7,500 km, of which about 5,400 km belong to Peninsular India and the remaining to the Andaman, Nicobar and Lakshadweep Islands. With less than 0.25% of the world's coastline, India accommodates approximately 11% of the global population, who live in low elevation coastal areas. Fishing is a major livelihood options for millions of coastal communities. India's coastal zone is endowed with coral reefs, mangroves, sea-grasses/weeds, salt marshes, sand dunes, estuaries and lagoons.

In India, all the three major reef types (atoll, fringing, and barrier) occur in most diverse, extensive and least disturbed reef areas. There are four major reef regions in India on all sides of its coastline. The Gulf of Kutch in the Northwest, Palk Bay and Gulf of Mannar in the Southeast, the Andaman and Nicobar Islands on the East and Lakshadweep archipelago in the West. Mangroves cover 4827 square km with about 57% of it along east coast, 23% along the west coast and the remaining 20% in Andaman and Nicobar Island. Fourteen species of sea-grasses with 6 genera are known in the Indian seas. All the above mentioned ecosystems are shelter for unique marine and terrestrial wildlife. The economic potential of coral reefs is estimated to be \$1,250 million/hectare/year.

These are researched figures by economists. Consider that we realize a mere 10 per cent of this potential for the local people. Even though humanity has repeatedly benefited from the marine and coastal ecosystems, our land and ocean based activities have made critical impacts on marine ecosystem. Indiscriminate discharge of wastes by coastal cities and industries and over-extraction of fish and other marine products are the major challenges. Hence land-based activities, which have an adverse impact on coastal and marine ecosystems, need to be controlled. Further, since marine resources are generally renewable, its extraction should be restricted within its regeneration capacity.

Promotion of *Marine Protected Areas/Reserves* is important for conserving and managing coastal and marine biodiversity. India has many Marine Protected Areas/Reserves and it need to be extend further. A special and high level focus on marine and costal biodiversity by the Environment Ministers from around the World during the forthcoming eleventh meeting of Conference of Parties to the Convention on Biological Diversity (CBD COP 11) is expected to identify concerted efforts to not only protect marine and coastal biodiversity but also realize the economic potential of this natural treasure trove that provides livelihoods, protects us from climate change and ensures our food and nutritional securities are intact as well as enhanced with suitable interventions.

RESEARCH & DEVELOPMENT IN NANOELECTRONICS: INDIA GETTING READY TO BE A GLOBAL PLAYER!

The Nanotechnology Initiatives Programme of Department of Information Technology (DIT) was initiated in 2004. The focus of the programme is on Institutional capacity building, human resource

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development, Infrastructure creation and research & development in Nanoelectronics. In the long run, the programme is expected to create a synergetic environment for creation of vibrant Nanoelectronics industry in the country.

A. Centers of Excellence in Nanoelectronics

Nanoelectronics Centres at Indian Institute of Technology Bombay, Mumbai and Indian Institute of Science, Bangaluru: A joint project for setting of two Nanoelectronics Centers at Indian Institute of Technology Bombay and Indian Institute of Science Bangalore was initiated with a cost of ` 100 Crores in the year 2006 as a Phase I. This project has been unique in the manner in which two top level academic organizations in India have come together with an MOU between them to take up an R&D project of this magnitude. The objectives of these Centers have been:

Embark on R&D activities in the areas of nanoelectronics including materials, devices and sensors, nanosystems and their characterization and modeling.

Networking with other agencies, institutions, national labs and industry working in the area of nanoelectronics and create a nanofabrication facility accessible to all researchers.

Generate trained human resources suitable for nanoelectronics research, engineering and manufacturing.

Demonstrate that the nanofab facilities created and human resources generated can be used to develop socially relevant systems with nanostructured materials and systems.

The deliverables at the Center of Excellence at IIT Bombay included development and establishment of sub 100 nanometer CMOS process, development of nanosystems for Healthcare and environmental monitoring, development of organic and biopolymer devices, GaN devices, and characterization, modeling and simulation of nanoelectronic devices.

The deliverables at IISc included magnetic materials for LC resonator, acoustic sensors, ferroelectrics for Ferratic RAMs (FRAMs) and phase shifters, rare earth metal oxides for MOS gate dielectrics, molecular rectifiers based on organic thin films.

B. Centres of Excellence in Nanoelectronics

Phase I: The first phase has been very successful in establishing major nanofabrication facilities of international standards at the two institutions and providing a catalyst for ambitious research initiatives in the area of nanoelectronics. Within a short span of five years, state-of-the-art facilities in nanoelectronics have been set up and used by a large number of faculty and students at the two Institutes as well as researchers from other institutions under the satellite "Indian Nanoelectronics Users' Programme". Significant research output as well as training of manpower has been accomplished in this project during a relatively very short span of time.

These centres have attracted international attention and talent (as faculty) to these institutions and have become "Centres of Excellence in Nanoelectronics". This project has provided confidence that academic organizations can take up large R&D projects effectively and has become a model project for funding of large R&D projects by other Government departments and organizations at academic institutions.

C. Centres of Excellence in Nanoelectronics

Phase II: Based on the experience and success of the phase I project, the phase II project at a cost of Rs. 146.91 Cr was initiated in December 2011 for execution by IIT Bombay and IISc over a period of 5 years. While the previous project was largely focused on infrastructure creation for nanoelectronics research, the Phase II project focuses on research in frontier areas of nanoelectronics, technology generation, closer interaction with industries for commercialization and

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scaled up effort in high quality R&D manpower generation.

Nanoelectronics Centres at IIT Delhi, IIT Madras and IIT Kharagpur: Inspired by the success of the Nanoelectronics Centres project at IIT Bombay and IISc, setting up of 3 more Nanoelectronics centres has been taken up by the Department of IT at IIT Delhi, IIT Madras, Chennai and IIT Kharagpur on different aspects of Nanoelectronics.

D. R&D Projects

In addition to establishing Centres, several small and medium scale projects have also been initiated for capacity building for R&D in the areas of nano materials, nano devices, nano subsystem and nano systems at various institutions across India including Indian Institutes of Technology at New Delhi, Chennai, Mumbai, Kanpur, Kharagpur and Roorkee, IISc Bangalore, C-MET Pune, CEERI Pilani, CSIO Chandigarh, Jadavpur University Kolkata, Jamia Milia Islamia, Visvevaraya Institute of Technology Nagpur etc. The specific R&D areas included Nano silver oxide, nano-particles of noble and transition metals, nano-sized metals/metal oxide/ metal nitrides, nanocrystalline silicon MEMS Pressure Sensor, technology for quantum structures, organic thin film transistors, quantum-well infrared photodetectors, Carbon Nano Tubes (CNTs) for targeted drug delivery, tin oxide powder and tin oxide thin films for gas sensing, CNTs for field emission devices, simulation of Nanoscale MOSFETs, Nanosized SiC based quantum structures, Quantum-semiconductor-glass-nanocomposites, porous silicon for sensing of gas and biological species, simulation of nano-devices, oxide based functional thin film nano-structures for Spintronics and quantum informatics, GaN, InGaN based quantum dots for LEDs, Nano silver oxide doped/ mixed with gold and copper for ultra high density storage devices, III/ V compound semiconductor based quantum dots technology, wide band gap semiconductors nanostructured materials and devices, semiconducting Single Wall Carbon Nano Tubes (SWCNTs), CNTs based Gas sensor and Multi-functional magnetic nano particulates for cancer therapy.

E. Nanometrology

In order to implement the Nanoelectronics development program successfully, nanometrology (science of measurement at nanoscales) is also an requirement. The general trend towards increased miniaturization in manufacturing from micro to nano is not simply a scale problem, but involves facing new physics. A project has been taken up at National Physical Laboratory, New Delhi to address the issues of nanometrology by establishing a National nanometrology laboratory. This laboratory provides calibration and traceability for physical dimensions like linewidth, step height, surface texture and calibration of electrical parameters like low voltages in nanovolts, low currents in picoamperes, electric charge in femtocoulombs (fC). It is expected to cater to the nanoscale measurements for various industrial applications including automotive, biomedical and semiconductor industry.

F. Indian Nanoelectronics User Program

The Indian Nanoelectronics User Program (INUP) has been conceived and initiated by the Department of IT to facilitate and support generation in India of expertise and knowledge in nanoelectronics through participation and utilization of the facilities established at the Centres of Excellence in Nanoelectronics at IISc, Bangalore and IIT Bombay, Mumbai by external users from academia, R&D institutions and Industry. The INUP program aims to:

Impart hands-on training in nanoelectronics to researchers from other institutions in the country and help train researchers in Nanoelectronics. Users from academic, research and industrial R&D institutions are trained through this project at three levels.

Short-term workshops to disseminate the outcome of the research activities. These

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workshops are also expected to provide exposure and awareness.

Hands-on training for selected researchers. Execution of collaborative research projects by external users by providing support for fabrication and expert guidance.

Assist in the initiation of research in nanoelectronics at various institutions in the country by enabling the execution of the work of external users at these centres.

Collaborate with research teams at various Indian organizations and develop joint projects in nanoelectronics.

Provide a platform for researchers in Naoelectronics to come together and benefit from complementary expertise.

To generate more than 750 trained students, professional scientists and engineers etc., at various levels and take up about 40 research projects in Nanoelectronics. The INUP has been utilized by researchers and engineers from academia, R&D organizations and industry.

More than 110 R&D projects from more than 100 external organizations across the country have been taken up so far under INUP. About 1150 researchers and students from across India have been trained through INUP.

G. Patents, Publications

More than 500 articles have been published and more than 20 patents have been filed in the projects initiated under this programme.

H. Industry Participation and Commercialization

While initiatives have already been taken for establishing the R&D infrastructure for Nanoelectronics, the focus of programme is now progressively leaning to technology transfer, product development and commercialization. A startup company viz. Nanosniff has been incubated at IIT Bombay for product development. A mechanism for incubation of startup companies and commercialization of technologies is being contemplated by the Department of IT in collaboration with other organizations.

THE RIGHT OF EVERY CHILD: THE RIGHT TO EDUCATION

Thirteen year old Sivakami is a pleasant, pony tailed girl whom I see every day. She is the culinary assistant and assistant waiter at the small mess where I have breakfast and meals on a regular basis. Besides being cheap, the food one gets in such messes that can be seen all over Tamilnadu is of excellent quality. However, the quality and low expense comes up with a specific price tag.

The mess depends mainly upon labour of Sivakami as well as her elder brother Sivanesan, who is studying for his Plus 2. the only silver lining is that both Sivanesan as well as Sivakami have been allowed to continue with their studies. But this is not the case for many others. The Planning Commission's report on Child labour says that according to the 2001 Census there are 1.26 crores economically active children in the age-group of 5-14 years. Among the states, Uttar Pradesh accounts for a larger share of close to one fourth of all child labour in India followed by Andhra Pradesh. Maharastra and West Bengal respectively garnered nine and eight percent of India's child employment.

The share of Uttar Pradesh has dramatically shot up in the last one decade from less than 13 per cent in the mid-1990s to close to 23 per cent in 2004-05, which is a cause for concern. On the other hand, the share of Andhra Pradesh seems to have declined quite considerably during this period. Though there are clear provisions in our Constitution to safeguard the interest of children by

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ensuring that they receive education and are not forced to work for a living, it is unfortunate that the problem of child labour exists to a large extent in our country. In fact, child labour is the result of various ills in the society. Poverty and illiteracy are two such manifestations, which are visible but there are many other factors inbuilt in our society, like the position of women in the family, traditional and cultural practices and feudal attitudes in the country, perpetuating this problem.

A. The Global Picture

The most recent estimates suggest 127 million boys and 88 million girls are involved in child labour with 74 million boys and 41 million girls in the worst forms. National laws or regulations in countries differ from one to another. Some countries may permit the employment of 13-15 year olds in light work which is neither prejudicial to school attendance, nor harmful to a child's health or development. In yet other countries children in the ages 12-14 can apply for light work. Still other countries prescribe a minimum age of 14 for becoming employed.

B. India's Latest Approach to Child Labour: 12th

The strategy for dealing with Child Labour during the 12th Five Year Plan Period has been formulated based on the suggestions given by the members of the working group in the two meetings conducted on 27th May and 8th July 2011. The broad highlights of the suggestions are:

The Child Labour (Prohibition and Regulation) Act should be strengthened and amended. The problems of working children of the migratory families should be addressed. Child labour survey should specifically capture migration of children. Residential schools should be opened in each Metro and Mega cities and also in every district.

It is important to run residential schools for rehabilitation of child labour.

The NCLP (National Child Labour Project) Scheme should expand further to a large geographical coverage.

Emphasis should be given to the monitoring and tracking of NCLP school children.

The convergence approach should be followed to enhance social protection and welfare measures for working children.

The NCLP Scheme should be realigned in the light of Right to Education Act 2009. The teachers of the NCLP Special schools should be properly trained.

Three tier Monitoring Committee at the District, State and National level should be made for effective implementation and monitoring of the NCLP Scheme.

C. The NCLP Scheme

The NCLP Scheme (National Child Labour Project), which began with a modest number of only 12 districts, has been progressively extended to various parts of the country with the coverage of 271 districts in 21 States of the country. It is functioning in 18 districts of Tamilnadu also. There have been demands from various States for expanding the coverage of NCLP Scheme to more districts, there is, therefore, a need to expand the Scheme in all the 600 districts in the country.

D. Right to Education

India's landmark Right of Children to Free and Compulsory Education Act (RTE) has been hailed universally as an essential foundation to ensure that all children are in school and out of child labour. Education for all was unanimously agreed as a target towards reaching the goal of elimination of child labour, in addition to scaling up efforts through poverty reduction, social protection and building political commitment to tackling child labour. The 12th Plan Proposal of the Planning Commission calls for an effective alignment of the NCLP Scheme with the provisions of the Right of Children to Free and

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Compulsory Education (RTE Act, 2009). Accordingly, the NCLP Schools will serve as Special Training Centre for un-enrolled and out-of-school children in accordance with the provisions of Section 4 of the RTE Act and Rule 5 of the Right of Children to Free and Compulsory Education (RTE) Rules, 2010. For this purpose, all such children will be admitted to a neighborhood school of the State Government/local authority. After such admission, the children will undergo the special training for being mainstreamed into the regular school in an age appropriate class.

E. World Day Against Child Labour 2012

The National Commission for Protection of Child Rights (NCPCR) is commemorating World Day Against Child Labour here on 12 June, 2012. The theme for this year is- "JUSTICE FOR CHILDREN – END CHILD LABOUR". The aim of commemorating this day is to highlight the need to protect the rights of the child and eliminate child labour and other violations of fundamental rights of children, in all forms.

The World Day Against Child Labour was launched by the International Labour Organization (ILO) in 2002 to generate awareness about the practice of child labour in different sectors. ILO estimates that there are 21.8 crore child labourers worldwide. The Government of India's 2001 census estimated that 1.27 crore are involved in child labour. This means that about 3.6% of the total labour force in India is constituted by children! By entering the labour market prematurely, they are deprived of education and training that can help to lift them, their families and communities out of a cycle of poverty.

As child labourers they are exposed to physical, psychological or moral suffering that can cause long term damage to their lives. This year the World Day Against Child Labour will provide a spotlight on the right of all children to be protected from child labour and from other violations of fundamental human rights. In 2010 the international community adopted a Roadmap for achieving elimination of the worst forms of Child labour by 2016. This document stressed that child labour is an impediment to children's rights and a barrier to development. World Day Against Child Labour 2012 will highlight the work that needs to be done to make the roadmap a reality.

FINANCIAL INCLUSION

In his Budget Speech 2010-11, the Finance Minister had directed all banks to provide appropriate banking facilities to habitations having population in excess of 2000 by March, 2012 using various models and technologies including branchless banking through Business Correspondents (BCs). The Financial Inclusion Campaign has been named 'Swabhimaan'. The Banks formulated their road maps for Financial Inclusion through the mechanism of the State Level Bankers Committee (SLBCs) and had identified approximately 74,000 habitations across the country having a population of over 2000 for providing banking facilities. These habitations were allocated to Public Sector Banks, Regional Rural Banks, Private Sector Banks and Cooperative Banks for extending banking services by March, 2012.

As per information received from SLBC Convener Banks, out of 74,398 villages identified under the campaign, 74,194 villages have been covered and 3.16 crore Financial Inclusion bank accounts have been opened by end of March, 2012.

Further, the banks have been advised to set up Ultra Small Branches in villages covered under Business Correspondent model where the officer designated by the bank would be available with a lap top on predetermined day and time in a week. While the cash services would be offered by the Business Correspondent Agent, the bank officer would offer other services to be offered by the bank, undertake field verification and follow up the banking transactions.

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The Government issued Strategy and Guidelines on Financial Inclusion in October, 2011, vide which it was, inter-alia, advised to banks to open bank branches by September 2012 in all habitations of 5,000 or more population in under banked districts and 10,000 or more population in other districts. As per reports received from the Convener Banks of State Level Bankers Committees (SLBCs), of the 3,905 bank branches to be opened, 739 bank branches have been opened by end of April, 2012. Regional Rural Banks (RRBs) have also been advised to work out branch expansion plan such that there is an increase of 10% in bank branches in 2011-12 and also in 2012-13 over the respective previous years. As per provisional data, RRBs opened 914 branches during 2011-12. Of the 71 unbanked blocks in the country, as on 31 March, 2011, with the persistent efforts of the Government, banking facilities have been provided in all unbanked blocks by March 31, 2012. As a next step it has been advised to cover all those blocks with Business Correspondents and Ultra Small Branch which have so far been covered by mobile banking only.

WESTERN GHATS: CHALLENGES OF SUSTAINABLE DEVELOPMENT

UNESCO's World Heritage Committee inscribed the Western Ghats of India as a world heritage site on July 1. The tag came at the 36th session of the World Heritage Committee (WHC) in St Petersburg in Russia. Altogether 39 sites that dot the Western Ghats landscape will be part of the region that has been designated as World Heritage Site. Kerala leads with 20 sites being inscribed in the heritage list followed by Karnataka with ten, Tamil Nadu five and Maharashtra four.

A. Recognition Comes After Rejection

The world heritage tag for the Western Ghats has come after many glitches. The proposal for including 39 sites in the Western Ghats as world heritage was rejected by the World Heritage Committee in its 35th meeting last year. When the proposal for it was re-submitted for consideration this year, it was once again on the verge of getting rejected. The International Union for Conservation of Nature (IUCN) suggested that India should review and refine the proposal to redefine the boundaries of the proposed sites to maintain the contiguity of the forests. The Indian delegation in St Petersburg, however, managed to convince the world heritage committee on the merits of India's proposal and also discussed the issue with 21 members of the committee. The intense lobbying paid off, as the Russian delegation moved a proposal which was backed by several Asian and African nations. B. Importance of Western Ghats

Older than the Himalayas, the Western Ghats are the treasure trove of bio-diversity. In fact they are recognized as one of the 8 global hot-spots harbouring a wealth of flora, fauna. The Western Ghats which begin at the Dangs in Gujarat, run through the western parts of Maharashtra, the tiny state of Goa, the Malnad region of Karnataka and the highlands of Kerala and Tamil Nadu, before ending near Kanyakumari. The Ghats are currently known to have more than 5,000 plant and 140 mammal species, 16 of which are endemic, i.e. species found in that area alone. Notably among these being the lion-tailed macaque and the Nilgiri tahr. Out of 179 species of amphibians found in the Western Ghats, 138 are endemic to the region. It has 508 bird species, 16 of which are endemic, including the Nilgiri flycatcher and the Malabar parakeet. The Western Ghats are considered ecologically sensitive region with nearly 52 species moving one step closer to extinction. Habitat change, over-exploitation, pollution and climate change are the principle pressures causing bio-diversity loss. The need to protect the ecology of the Western Ghats can hardly be over-emphasized.

C. The UNESCO Mandate

The UNESCO has noted with appreciation India's ongoing commitment to conserving high bio-diversity values of the Western Ghats, but has clearly underlined that more needs to be done. The World Heritage Committee has suggested to the Indian Government to take into account the

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recommendations of the Western Ghats Ecology Expert Panel. It has also asked the government to strengthen buffer zones to provide increased protection within the nominated sites. The UN body also wants to promote participatory governance approaches through community participation to ensure equitable sharing of benefits. The panel has said that no industrial activity should be allowed without the consent of the locals.

The Western Ghats Ecology Expert Panel, was constituted by the Ministry of Environment & Forests in February 2010 under the chairmanship of noted environmental expert Prof. Madhav Gadgil. The panel has identified several eco-sensitive zones in the region and recommended that they should be declared no-go areas. Among its recommendations, the panel has also called for scrapping of Karnataka's Gundia and Kerala's Athirapally hydro-projects, and gradual phasing out of mining activities in ecologically highly-sensitive areas of Goa by 2016.

It has also suggested setting up of a Western Ghats Ecology Authority (WGEA), as a statutory authority appointed by the Ministry of Environment and Forests, with the powers under Section 3 of the Environment (Protection) Act, 1986. The 24-member body is to have ecologists, scientists, representatives of civil society, as well as tribal groups, officials from the Union Environment Ministry, Planning Commission, National Biodiversity Authority, Central Pollution Control Board, and representatives of the state government as its members. Both the Karnataka and Kerala state governments have been opposed to the recommendation to scrap the hydro projects in their respective regions. The Karnataka Government had also been opposing the World Heritage tag citing regulatory hurdles in the development of places falling under these regions. Goa's lackadaisical attitude in conserving the Western Ghats has resulted in the state not getting any site in the list of 39. Maharashtra Government has welcomed the World Heritage Status to Western Ghats, but that is unlikely to change the state's present stance of not imposing a complete ban on mining and industries, except in the core areas. The state, nevertheless is encouraging green fuel movement in the villages of Western Ghats by way of up to 75% subsidy on biogas and 50% subsidy on shift to low yielding cattle, which rely on domestic fodder instead of open grazing.

E. Impact of UNESCO World Heritage Site

The World Heritage status could have implications on development in and around these sites as UNESCO prescribes creation of additional buffer zones around the natural world heritage sites and putting in place an overarching management authority for conservation of the selected 39 serial sites. Conservationists also fear a mad-rush to these sensitive areas in the guise of eco-tourism. "This might trigger commercial activities in the Western Ghats, followed by construction activities like building roads, structures, power lines and other infrastructure, which will defeat the purpose of protecting the green cover and habitat protection," says an activist associated with the Kudremukh Wildlife Foundation in Karnataka. The Western Ghats expert Dr. Madhav Gadgil has welcomed the UNESCO gesture and said "It will hopefully strengthen the Acts like Biological Diversity Act of 2002, which empowers the local bodies like panchayats to take appropriate steps for conservation."

The participation of locals is going to be crucial in determining the success of conservation efforts and promising sustainable development. All along the Western Ghats in five states, there are lakhs of tribal people who have made their homes in the ghats. The Thodas of Nilgiris, Soligas of BR Hills, Malekudiyas of Belthangady, Halakki Vokkalis of Uttara Kannada, the Sidhis of Kumta, Paniyas of Waynad, Kattunayakans of Malabar and many others in Goa and Maharashtra are some of them. The Perspective Plan for Protection of Biodiversity 2001-16 states that "tribal communities are part of the biodiversity and the state governments should not take them out of their natural surroundings, but empower them democratically and let the government facilities go to them." The ground situation for people's participation in development is conducive in most parts of the Western Ghats. The region has some of the highest levels of literacy in the country, and a high level of environmental awareness.

The democratic institutions are well entrenched, and Kerala leads the country in capacity

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building and empowering of Panchayat Raj Institutions. Goa has recently concluded a very interesting exercise, Regional Plan 2021, of taking inputs from Gram Sabhas in deciding on the land use policies. Evidently, Western Ghats are an appropriate region of the country to attempt to make the transition towards an inclusive, caring and environment friendly mode of development.

E-GOVERNANCE INITIATIVES-CHANGING LIVES FOR THE BETTER

Growing demand for services and information are pushing Governments across the globe to provide services at a faster pace and with increased capacity so as to cover all regions irrespective of geography, language or literacy levels. Continuous innovation in ICTs and rapid advancement of technology are bringing forth novel and easier mechanisms in providing seamless access to critical public services and are making Government interaction with citizens trouble-free and easy. Services provided through the various e-Government initiatives assist Governments in reaching the yet 'unreached' and thereby contribute to poverty reduction in rural and far-flung areas by increasing access to critical information and opportunities. At the same time, this process also enables involvement and empowerment of marginalized groups through their participation in the government process.

The National e-Governance Plan was approved by the Cabinet in May 2006 with a vision to provide Public services to the common man in his locality at affordable costs. The NeGP is a multi-stakeholder programme which primarily focuses on making critical public services available and promoting rural entrepreneurship.

Common Services Centres

Since its approval, many milestones have been achieved under the Plan. While Mission Mode Projects such as MCA21 and Pensions are successfully providing services to their respective stakeholders through their respective portals, extensive outreach has been achieved for those in need of assisted access to public services through establishment of over 87,000 Common Services Centers (CSC) across 30 States & UTs of our country to provide access to approximately 60 million people residing in nearly 500,000 villages. The Department of Information Technology (DIT) plans to complete the roll out of 100,000 CSCs across 600,000 villages by March 2011. Given the on ground success of CSCs, the President in her address to the Parliament has directed that "The scheme for Common Services Centers or e-Kiosks will be suitably repositioned to be network of Panchayat level Bharat Nirman Common Service Centers to provide Government services to citizens in rural areas". Accordingly the CSC Scheme shall be further extended by DIT to cover remaining 150,000 Panchayats. This is by far, the biggest project of its kind anywhere in world. It is also unique in its perspective because perhaps for the first time it is being effectively demonstrated that a Public Private Partnership model can work successfully and can be self sustainable in delivering a basket of services to essentially rural and underserved section of the society. It is estimated that over 100,000 rural micro enterprises have been created as a result of implementation of the CSC Scheme.

These Centers provide access to over 100 different types of public and private services including but not limited to enrolment & job cards under MGNREGS, copy of Record of Rights, telemedicine enabled diagnostics, access to financial services such as insurance & micro finance, utility services such as payment of utility bills, employment services such as vocational, soft skills and language training, booking of tickets, recharge of mobile phones etc. It is envisaged that very soon several other services critical to rural populace including all services provided by Gram Panchayats and other social services under rural development, health and employment shall be ubiquitously accessed through the Common Services Centers.

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Apart from CSCs, significant progress has been made in the other two core e-infrastructure pillars of the National e Governance Plan consisting of State Wide Area Networks (SWAN) and State Data Centres (SDC).

SWAN Scheme

The SWAN scheme, at an estimated outlay of Rs 3334 crores, was approved by the Government of India in March 2005. The objective has been to provide a country wide secure network for delivering G2C and G2G services interconnecting each State/UT Headquarter and each District HQ with the Block HQ via lease lines with minimum 4 Mbps bandwidth capacity between each State/UT headquarter and District headquarter, and minimum 2 Mbps bandwidth between District headquarter and Block/Taluka headquarter. At present, 23 State Wide Area Networks are operational across the nation, while 2 are in advanced stage and 4 are in progress. SWAN will be operational in all States by June 2011.

The State Data Centre (SDC), is one of the core infrastructure pillars of the NeGP to be set up in all 35 States/UTs. SDCs planned for each state are envisaged as state level digital nerve system housing all applications and databases. SDC provides key functionalities such as Central Repository of the State, Secure Data Storage, Online e-Delivery of G2G, G2B and G2C Services, Citizen Information/Services Portal, State Intranet Portal, Disaster Recovery, Remote Management and Service Integration. The Government has approved the SDC scheme at an outlay of Rs 1623.20 crores. SDC is currently operational in Gujarat, Rajasthan and Tripura. SDCs in 14 States are under Implementation (West Bengal, Sikkim, Orissa, Nagaland, Meghalaya, Maharashtra, Tamil Nadu, Puducherry, Haryana, Karnataka, Andhra Pradesh, Manipur, Uttar Pradesh and Kerala). Jharkhand has issued the LoI to the selected Bidder. Bid process is in progress in 6 States (Andaman & Nicobar, Madhya Pradesh, Mizoram, Uttarakhand, Jammu & Kashmir and Bihar). RFP for 6 States (Himachal Pradesh, Lakshadweep, Arunachal Pradesh, Chattisgarh, Assam and Punjab) is under finalisation by the States/DIT. RFP is under preparation by the State of Goa. It is expected that about 14 Data Centres shall be made operational by March 2011 and the remaining Data Centres will be progressively made operational by December 2011.

National Population Register

The Government has initiated the creation of National Population Register (NPR) by collecting specific information of all usual residents in the country during the House-listing and Housing Census phase of Census 2011, during April 2010 to September 2010. The NPR is a comprehensive identity database to be created and maintained by the Registrar General and Census Commissioner of India (RG&CCI), Ministry of Home Affairs. It involves digitization of the demographic data thus collected and biometric enrolment of all usual residents for allotment of Unique Identification (UID) Numbers. RG&CCI has assigned Department of Information Technology (DIT), Ministry of Communications and Information Technology, with the responsibility of demographic data digitization and biometric data collection in 19 States and 2 Union Territories of India.

The objective of NPR is to facilitate better targeting of the benefits and services under the government schemes, improve planning and security, and prevent identity fraud. The demographic data will be digitized in the language of the State as well as in English. Once this demographic database has been created, the biometric enrolment (capture of one photograph, ten finger prints and iris scan of both eyes) will be carried out for all usual residents aged 5 years and above, through enrolment camps across the Nation. The demographic data and the photograph of the residents will be printed in the form of Local Register of Usual Residents (LRUR), and as per a process defined by RG&CCI based on feedback from the usual residents, any corrections in LRUR will be carried

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out. This authenticated data will then be sent to the Unique Identification Authority of India (UIDAI) for de-duplication and issue of UID Numbers. The cleaned database along with the UID Numbers will then be sent back to the RG&CCI, and would form the National Population Register.

There are several supporting infrastructure under the NeGP which will enable speedy service delivery. This project creates State Portals that will host electronic forms to offer convenient and easy services to citizens. This project leverages the existing e-governance core infrastructure namely CSCs, SWAN and SDCs. It intends to provide the citizen with easy, simple, “anywhere and anytime” access to government services. It aims to reduce the number of visits of a citizen to a government department/office for availing services. It also aims to reduce administrative burden and service fulfillment time and costs for the Government, Businesses, and the Citizen by creating more efficient communication means through the portals. It will enable the citizen to download forms, and submit their applications electronically with the help of e-forms available on the State Portals, routed through a common service gateway (SSDG). The project will guarantee electronic delivery of the request from the citizen to the specified field office of the Government Department. The citizen will also get an electronic acknowledgement of successful submission of application from the Department. Moreover, at any given point in time, the citizen can ascertain the current status of his/her application request online. So far 17 States/UT's have completed the process of selecting the Implementing Agency for the project.

India Portal

One of the key Mission Mode Projects in the integrated service category under the NeGP is the India Portal. This project has been implemented by NIC. It has been envisaged as a unified portal providing “single window access” to information and G2C services which are electronically delivered from all state sector institutions and organizations. The first version of the portal is operational and was released by the Minister for Communications and Information Technology on November 10, 2005 and the portal address is <http://india.gov.in/>. Some of the Demand driven additional modules for Public Participation like Complain & Appeal Module for Central Information Commission (CIC), NGO Partnership System, Business Module of the India Portal have been implemented. There has been an attempt by the National Portal to bring together all online services offered by the Central and State Governments under a single umbrella for various categories of services like G2G, G2E, G2C and G2B. Around 1830 services offered by different State Governments have been added. In addition, the content has been enhanced to facilitate the contribution of Government information and services for example: 7365 forms can be downloaded now from the portal, at least 1830 services, 1420 schemes, 6160 documents, 2239 Acts, and 1444 Rules are available on the site.

Standards in e-Governance are sine qua non for sharing of information and seamless interoperability of data across e-Governance applications in India. An Institutional Mechanism has been setup under National eGovernance Programme (NeGP) to evolve/adopt Standards for e-Governance. Government of India is promoting the usage of Open Standards for e-governance to avoid any technology lock-ins. A Policy on Open Standards has been formulated which provides a framework for the selection of Open Standards to facilitate interoperability between systems while providing organizations the flexibility to select different hardware, systems software, and application software for implementing cost effective e- Governance solutions.

Open standards for interoperability in various domains would now need to be adopted which would be part of the Interoperability Framework for e-Governance (IFEG) document. Standards have also been adopted for localization like Unicode and Open Font Format. Metadata and data standards have been published for person and land identification which will ensure sharing of information and seamless interoperability of data across applications.

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Security assurance framework guidelines to help in implementation of the ISO 27001 standard have been published. Quality Assurance Framework (QAF) and guidelines to ensure quality in e-Governance applications have been also published. Digital Signature Certificate (DSC) Interoperability guidelines have been published to enable interoperability of DSC's issued by various Certifying Authorities(CA). Guidelines for usage of Digital Signatures in eGovernance Applications have also been published. Website Design Guidelines compliant to Web Accessibility guidelines have also been published.

Biometrics standards for face image, fingerprint image and Iris image standards would enable the sharing of biometrics data by various e-Governance applications. Work is also under progress in the areas of Enterprise architecture framework and XML signatures. New areas of standardization like digital preservation, cloud computing are under consideration for formulation of standards. The standards and guidelines and other information relating to e- Governance standards is available on the website <http://egovstandards.gov.in>

The Department of Information Technology, has created the National e-Governance Division (NeGD) as an autonomous business division within Media Lab Asia (MLA), under the Ministry of IT, for undertaking the Programme Management of NeGP. The NeGD facilitates and supports DIT for tasks and responsibilities assigned to them such as facilitating implementation of NeGP by various Ministries and State Governments, providing technical assistance to Central Ministries/State Line Departments, serving as a Secretariat to the Apex Committee, undertaking technical appraisal of all NeGP projects to examine issues such as overall technological framework, standards, security policy, service delivery mechanism etc. NeGD supports DIT in human resource development, training and awareness building, framing core policies, R & D, assessment.

For successful, sustainable implementation of NeGP projects, Capacity Building is a critical component both at the programme level and at the project level. It is necessary to develop and strengthen human resources and institutional capacities. The scheme envisages providing technical and professional support to State policy and decision makers and developing specialized skills necessary for e-Governance.

The Empowered Committee for the Capacity Building Scheme has designated NeGD as the central agency for execution of the scheme. NeGD has set up a central Capacity Building Management Cell for coordination and implementation of this scheme. One of the main components of this scheme has been the formation of professional core teams or State e-Governance Mission Teams (SeMTs) to provide inputs and support to policy makers, executive bodies and implementing authorities in matters related to e-governance. Leadership meets for sharing the e Governance vision, strategies and successes among political and senior government functionaries and specialized training for operational level officials are being organised as part of the Capacity Building Scheme. NeGP definitely vouches to change our lives for the better, if not for the best. The Report card shows considerable progress and exemplary success in projects such as Railway Ticket Booking, Passport services. The success of NeGP is indeed credible in such a short span of time and has shown that significant benefits can be derived by improving accessibility, and giving assistance to various groups. The NeGP promises to bring an even brighter tomorrow by striving to touch every citizen's life with quality, speed and efficiency coupled with greater understanding of the citizen's needs.

INDIAN EDUCATION: LOOKING AHEAD EDUCATION

As India continues to make sustained and significant economic progress there is need to tackle much more aggressively the problems of structural inequities, especially on the education front. Consider the fact that more than 100 million youth - the combined labour forces of Britain,

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France, Italy and Spain - are projected to join the workforce by 2020. This is a great potential resource provided the workforce is empowered with education and skills to leverage on the available global opportunities. If we fail to provide our youth with the requisite education and skills we will not only fail to utilize our demographic advantage but we will end up alienating large sections of our young population as well. This has made it imperative for us to expand our education base so as to be able to provide quality, affordable and merit-based education for the entire young population. To make this a reality, I have set out three principles that we must broadly embrace: First, access...providing access to educational opportunities to all who desire and need it; second, affordability...making education a reality by reducing financial barriers; and third, building quality and accountability...that we are teaching what is relevant and at global levels and delivering good value for money. The expansion in education, over the second decade of the twenty-first century, that we are envisaging, is unprecedented in modern history. Let us assess the situation.

Presently the Gross Enrolment Ratio in higher education is a mere 15% we seek to enhance it to 30% by the end of 2020, in real terms it would mean tripling of the enrollment from around 13 million to 40 million. At the secondary school level around 40 million students enroll in 9th to 12th standard every year, if only 10% were to enroll for vocational educational, that is 4 million as against the present 1 million seats this will mean a mammoth expansion of vocational education.

In regard to school education the demand has grown by leaps and bounds - everybody, from the poorest of the poor to the well off, acknowledges the value of education. Our data reveals that nearly 100 per cent children are enrolled in primary school; 98% of our habitations have a primary school within one kilometre, and 92% have an upper primary school within three kilometres. Transition rates from primary to upper primary levels have improved substantially. As a result many more children from much marginalized backgrounds are accessing school. But despite these impressive statistics, as many as 10 million children in the age group 6-14 years may be still not attending school due to the huge dropout rate.

The Right to Free & Compulsory Education Act (RTE Act) that has come into effect from 2010 is aimed to ensure that these out of school children get the right to education. The progress in universalisation of elementary education over the first decade is truly inspiring. Sarva Shiksha Abhiyan (SSA), which is the main vehicle for implementation of RTE Act, has helped to open more than 300,000 new schools, construct 250,000 school buildings, 11,00,000 additional classrooms, and 3,40,000 toilets, appoint over 11 lakh teachers, provide in-service training to over 14 lakh teachers and supply free textbooks to 8.70 crore children, with the result that an additional 40 million students have been enrolled. While we are making massive efforts to boost educational attendance and attainment at the elementary school level, we are also working for enhancing the enrollment and the quality at the middle and secondary school levels too to take care of not only the influx of students from the elementary stream but by motivating the present dropouts to enroll.

I am thus hoping to enhance the Gross Enrollment Ratio (GER) of secondary education from around 50% presently to over 75% by the end of the decade. A Rashtriya Madhyamik Shiksha Abhiyan (RMSA) programme has been launched for the purpose. Already over 5 lakh teachers have been provided in-service training. And by the end of the decade I expect that each child passing out from the secondary school should be computer literate as we have mounted a mammoth programme of ICT in schools. Other initiatives include a continuous and comprehensive evaluation system for CBSE board for class 10 from the year 2011, and uniform Pan-India curriculum for math and science for board exams from 2011 academic session and uniform curriculum in commerce by 2012.

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In regard to vocational education, it is presently not very attractive to those who are unable to pursue higher education. We are thus seeking to devise a vocational education and training system, National Vocational Qualification Framework, that is meant to meet the needs and aspirations of the students, the labour market and to be in tune with the ethos and values of the local community and society. This framework 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. The framework will be a competency based modular approach with provision for credit accumulation and transfer. 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. Sector Skill Councils and Industry would collaborate in the development of quality standards, competencies, model curricula, assessment standards and testing procedures. Linkage between education providers and employers would be ensured.

In regard to higher education we have taken several steps to address the expansion, by setting up:

16 new Central universities in the various States,

8 new IITs in Bihar, Andhra Pradesh, Rajasthan, Orissa, Gujarat, Punjab, Himachal Pradesh, and Madhya Pradesh,

7 new IIMs,

Indian Institute of Science Education and Research (IISERs) at Pune, Kolkata, Mohali, Bhopal and Thiruvananthapuram ,

10 new NITs at Arunachal Pradesh, Sikkim, Meghalaya, Nagaland, Manipur, Mizoram, Odisha, Delhi, Uttarakhand and Puducherry,

20 new Indian Institutes of Information Technology (IIITs) up on a Public Private Partnership (PPP) basis , and

374 Model Degree Colleges, one each in identified educationally Backward Districts where Gross Enrolment Ratio is less than National average.

Further with the view to facilitate teaching resource sharing and providing access to open educational resources we have set up the National Mission on Education through ICT to link twenty thousand of degree colleges and ten thousand departments within universities. The private sector is also contributing in this effort. In order to increase the number of quality faculty positions in science, a scheme of Operation Faculty Recharge is being launched to provide appointment for 1000 faculty positions created and to be filled at national level through global advertisement. We have taken several concurrent steps to address the quality aspects in higher education. We have introduced in Parliament the National Accreditation Regulatory Authority for Higher Educational Institutions Bill, 2010 to provide for mandatory accreditation of all educational institutions and another bill to set up a National Commission for Higher Education and Research (NCHER) for regulating higher education.

This is in accordance with the general principle of moving from “inspection approval” based mechanism of recognizing institutions to a “verification assessment” method. On the academic front the semester system has been initiated, regular up gradation and updating of syllabi has been mandated and choice-based credit system introduced. We are working on a national depository for holding in electronic form of all academic degrees, diplomas and certificates issued by all educational institutions. There are several other initiatives that we have taken such as improving the quality of teachers and faculty at various education levels, redressal of disputes, prohibition of malpractices and others which will materialize soon and whose impact will be felt in the course of next two years or so. Thus my vision is that within this decade every Indian, including

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the disadvantaged, the marginalized and the minorities, will have access to quality and affordable education be it at the primary, secondary or professional level. Indian education of future will thus be: Different and unique. Dynamic, vigorous, bold and functional, serving the needs of not only of the Indian society but the global community I am confident that India will emerge as the international hub for education in the next 20 years and what the BPO and IT sectors are today for India, education should be in 2030.

NATIONAL URBAN SANITATION POLICY

According to Census 2001, 27.8% of Indians, i.e. 286 million people or 55 million households live in urban areas – projections indicate that the urban population would have grown to 331 million people by 2007 and to 368 million by 2012. 12.04 million (7.87 %) Urban households do not have access to latrines and defecate in the open. 5.48 million (8.13%) Urban households use community ones and 13.4 million households (19.49%) use shared latrines. So also, 12.47 million (18.5%) households do not have access to a drainage network and 26.83 million (39.8%) households are connected to open drains. The status in respect of the urban poor is even worse. The percentage of notified and non-notified slums without latrines is 17 percent and 51 percent respectively. In respect of septic latrines the availability is 66 percent and 35 percent. In respect of underground sewerage, the availability is 30 percent and 15 percent respectively. More than

37% of the total human excreta generated in urban India, is unsafely disposed. This imposes significant public health and environmental costs to urban areas that contribute more than 60% of the country's GDP. Impacts of poor sanitation are especially significant for the urban poor (22% of total urban population), women, children and the elderly. The loss due to diseases caused by poor sanitation for children under 14 years alone in urban areas amounts to Rs.

500 crore at 2001 prices (Planning Commission-United Nations International Children Emergency Fund (UNICEF), 2006). Inadequate discharge of untreated domestic/municipal wastewater has resulted in contamination of 75 percent of all surface water across India.

National Urban Sanitation Policy

The Government has adopted the National Urban Sanitation Policy with a view to addressing the above mentioned issues in October 2008. The vision of the policy is that All Indian cities and towns become totally sanitised, healthy and liveable and ensure and sustain good public health and environmental outcomes for all their citizens with a special focus on hygienic and affordable sanitation

facilities for the urban poor and women. Awareness Generation and Behavioural Change; Open Defecation Free Cities; Integrated City Wide Sanitation; Sanitary and Safe Disposal; and Proper Operation and Maintenance of all Sanitary Installations are the main goals of the policy.

Initiatives under the NUSP

Rating of Cities: The rating of Cities covers all Class I cities of the country which account for 7 % of the urban population. The rating was carried out using a methodology which focussed on output, process and outcome indicators and was conducted in consultation with the cities. The purpose of the rating was to create awareness regarding the critical state of sanitation in the country with a view to mobilising action. Cities were classified under four colour categories i.e. Red, Black, Blue and Green.

The rating of cities creates a baseline which can be used to measure progress in respect of sanitation in our cities. Based on the results of the rating, the best performers will be recognized with a National Award- "The Nirman Shahar Puruskar".

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State Sanitation Strategies and City Sanitation Plans: The NUSP requires each state to formulate its own State Urban Sanitation Strategy to achieve the policy goals set out in the NUSP taking into account its local urban context. So far, 24 States are engaged in the preparation of State Sanitation Strategies. Cities will operationalize the state strategy by preparing and implementing City Sanitation Plans. The City Sanitation Plan's main purpose is to support local bodies, NGOs, CBOs, Citizens to take concrete steps to achieve 100% sanitation in their cities. The preparatory actions include mobilization of a City Sanitation Task Force comprising agencies responsible for on-site sanitation, sewerage, water supply, solid waste, drainage, communities impacted by sanitation conditions, key experts in civic affairs, health urban poverty, prominent businessmen & NGOs working on water and sanitation, urban development and slums, health and environment, representatives of institutions like Cantonment Boards, Central or State Government, representatives of unions of safai karamcharis, sewerage sanitary workers, recycling agents/ kabaris, representatives from private firms/contractors formally or informally working in the sanitation sector- to name a few garbage collector, septic tank de-sludging firms, representatives from educational and cultural institutions etc. Some of the elected Members of the ULB must be members of the Task Force. The Ministry of Urban Development is supporting cities in the development of City Sanitation Plans which are expected to be ready within a year. An amount of Rs.1327.71 lakh has been sanctioned to various State Governments (viz. Madhya Pradesh, Kerala, Karnataka, Chhattisgarh, Orissa, UP, Uttarakhand, Maharashtra and Andhra Pradesh) for preparation of City Sanitation Plans (CSP). So far, around 137 Cities are taking the initiative to make City Sanitation Plans.

Awareness Generation: An awareness generation campaign was launched with the broadcast of audio spots and jingles on Radio/ FM channels with a view to sensitizing citizens regarding the importance of sanitation, negative impacts on health and the environment due to lack of sanitation and most importantly the need to eliminate open defecation. The jingles have been developed in twelve languages.

National School Sanitation Initiative: Our vision of totally sanitized cities can not be achieved without the involvement of all stakeholders including our children who are our future. Keeping this in our view, a one day event on launch of National School Initiative was organized on April

27, 2010 by the Ministry of Urban Development & Ministry of Human Resource Development to sensitize younger children on the issue of sanitation, ecologically important issues such as energy efficiency, conservation of natural resources, segregation of waste etc. Mr. Aamir Khan, noted Film star participated in the event as Brand Ambassador for School Sanitation to spearhead the efforts towards awareness generation for better sanitation.

TRADITIONAL KNOWLEDGE DIGITAL LIBRARY (TKDL) – AN EFFECTIVE AND NOVEL TOOL FOR PROTECTION OF INDIA'S TRADITIONAL KNOWLEDGE AGAINST BIO-PIRACY

TKDL is a collaborative venture between Council of Scientific and Industrial Research, Ministry of Science and Technology and Earth Sciences, and Department of AYUSH, Ministry of Health and Family Welfare, and a maiden Indian effort to prevent misappropriation of traditional knowledge belonging to India at International Patent Offices. TKDL has overcome the language and format barriers by scientifically converting and structuring the traditional medical knowledge of Ayurveda, Unani, Siddha and Yoga in 34 million A4 size pages of the ancient texts in languages such as Sanskrit, Hindi, Arabic, Persian, Urdu and Tamil into five international languages, namely, English, Japanese, French, German and Spanish, with the help of information technology tools and a novel classification system - Traditional Knowledge Resource Classification (TKRC). Today, India through

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TKDL is capable of protecting about 2.45 lakh medicinal formulations similar to those of neem and turmeric. TKDL access has been given to eight International Patent Offices which are European Patent Office (EPO), Indian Patent Office, German Patent Office (GPO), United Kingdom Intellectual Property Office (UKPTO), United States Patent & Trademark Office (USPTO), Canadian Intellectual Property Office (CIPO), IP Australia and Japan Patent Office (JPO) under Access (non-disclosure) agreement. Based on the third party observations submitted by the TKDL team so far 53 patent applications of the pharma companies of United States, Great Britain, Spain, Italy, China, etc. have been either set aside or withdrawn/cancelled or declared as dead patent applications based on the information present in the TKDL database at no cost and in few weeks time after filing of the third party observations whereas cancellations of patents have been known to take 4-13 years of legal battle. Considering the novelty, utility and its effectiveness in preventing the grant of wrong patents several countries and organizations have expressed their keenness in replicating the TKDL model for their own countries. World Intellectual Property Organization including the global community has recognized India's leadership in the area of Intellectual Property Rights and Traditional Knowledge.

Genesis of TKDL Initiative

TKDL genesis dates back to the Indian effort on revocation of patent on wound healing properties of *turmeric* at the USPTO and anti-fungal properties of *neem* at EPO. Besides, in 2005, the TKDL expert group estimated that about 2000 wrong patents concerning Indian systems of medicine were being granted every year at international level, mainly due to the fact that India's traditional medicinal knowledge existed in languages such as Sanskrit, Hindi, Arabic, Persian, Urdu, Tamil, etc. which was neither accessible nor comprehensible for patent examiners at the international patent offices.

The grant of these patents in United States and Europe were the cause of great national distress, since, every Indian felt that the knowledge that belonged to India was wrongfully taken away. Further, the patents would have conferred exclusive rights on the use of technology to the applicant of the patent in the country in which it was granted.

TKDL for Breaking Language and Access barriers on Traditional Knowledge

TKDL has overcome the language and format barriers by scientifically converting and structuring the available traditional medical knowledge in 34 million A4 size pages of the ancient texts into five international languages, namely, English, Japanese, French, German and Spanish, with the help of information technology tools and a novel classification system - Traditional Knowledge Resource Classification (TKRC). Today, India through TKDL is capable of protecting about 2.45 lakh medicinal formulations similar to those of neem and turmeric. On an average, it takes five to seven years for opposing a granted patent at international level which may cost Rs.

1-3 crore. One could only imagine the cost of protecting 2.45 lakh medicinal formulations in the absence of TKDL.

Traditional Knowledge Resource Classification- An innovative mechanism for structuring Traditional Knowledge

For classifying the Traditional Knowledge related subject matter under TKDL Project, a classification system i.e. Traditional Knowledge Resource Classification (TKRC) based on the structure of International Patent Classification (IPC) was created by India which consists of approx. 27,000 sub groups for Ayurveda, Unani, Siddha and Yoga. The objective of creation of TKRC is not only to give a structured classification to Indian Traditional Medicine but also to use it as an abstracting and retrieval tool.

Impact of TKRC on International Patent Classification

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TKDL has been responsible for the reform of International Patent Classification (IPC) by enhancing the IPC on Traditional Knowledge from one subgroup to 207 subgroups which enables effective search and examination process on the patent applications related to traditional knowledge subject matter. IPC reforms in the context of TK are fundamental reforms in the International Patent System which would have long term implications.

TKDL breaks distance, format and language barriers between TK holder(s) Knowledge and International Patent Examiners

TKDL is a proprietary and original database. TKDL is based on 148 books of Indian Systems of Medicine, which are available at a cost of Rs. 50,000. These books are the *prior art* and can be sourced by any individual/organisation at national/international level. TKDL acts as a bridge between these books and international patent examiners. It is the TKDL technology which has created a unique mechanism for a Sanskrit sloka to be read in languages like German, Japanese, English, Spanish and French by an examiner at EPO or any other International Patent Offices on his computer screen.

Access to TKDL under TKDL (non-disclosure) Access Agreement

Access of TKDL to International Patent Offices is available under TKDL Access (Non-disclosure) Agreement. Under the agreement, examiners of patent office can utilise TKDL for search and examination purposes only and can not reveal the contents of TKDL to any third party unless it is necessary for the purposes of citation. TKDL Access Agreement is unique in nature and has in-built safeguards on non-disclosure to protect India's interest against any possible misuse.

India has signed TKDL Access Agreements with: (i) European Patent Office (Feb 2009) (ii) United State Patent & Trademark Office (Nov 2009) (with the sideline of the state visit of the Prime Minister to United States) (iii) Indian patent Office (July 2009), (iv) Canadian Intellectual Property Office (Sep 2010) (v) German Patent Office (Oct 2009) (vi) United Kingdom Patent Office (Feb 2010) (vii) Intellectual Property Australia (Jan 2011) and (viii) Japan Patent Office (April 2011).

TKDL search and retrieval capabilities for Protection of Traditional knowledge

TKDL is one such database that has proven its efficacy and has succeeded in opposing hundreds of patent applications at various International patent offices through the route of filing of third party observations which exists in most of the National Patent Laws of the countries, wherein a submission may be filed by any member of the public on state of art / prior art at the patent office questioning the novelty and non-obviousness of a patent application after the publication of the patent application and before the grant of patent. Challenging the patents at International Patent Offices is a long drawn process and is expensive. For example, Mexico, only after more than 10 years of legal battle, was able to get the patent on *Enola bean* at USPTO cancelled in July 2009. Similarly, cancellation on *Monsonito Soybean* patent happened in July

2007 at EPO after 13 years of legal battle. India is the only country in the world which has set up an institutional mechanism (TKDL) to protect its Traditional Knowledge and is able to prevent grant of wrong patents. TKDL enables cancellation / withdrawal of wrong patent applications concerning India's Traditional Knowledge at zero cost and in time period of few weeks. In sharp contrast, in the absence of TKDL it took 10 years (1995-2005) to get Neem patent invalidated for antifungal properties at EPO.

Impact of TKDL against bio-piracy

Significant impact has already been realised during the last two years. Beginning July 2009, TKDL team has submitted 571 third party observations out of which so far 53 patent applications of the pharma companies of United States, Great Britain, Spain, Italy, China, etc. have been either set aside or withdrawn/cancelled or declared as dead patent applications based on the information present in the TKDL database.

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TKDL: A model for other Countries

Considering the novelty, utility and its effectiveness in preventing the grant of wrong patents several countries and organizations such as South Africa, Mongolia, Thailand, Malaysia, ARIPO, Nigeria, Indonesia, etc. have expressed their keenness in replicating the TKDL model for their own countries. World Intellectual Property Organization including the global community has recognized India's leadership in the area of Intellectual Property Rights and Traditional Knowledge. WIPO in collaboration with CSIR organized an international conference on utilizing TKDL established by India as a model for protection of traditional knowledge was held in New Delhi in March 2011 where 35 countries rich in traditional knowledge participated to understand the methodology for creation of TKDL and to apply such model for protection of TK in their own country.

Foreign Direct Investment Prospect for India

India now with consistent growth performance and abundant high-skilled affordable manpower provides enormous opportunity for investment both domestic and foreign. Foreign direct investment (FDI) causes a flow of money into the economies which stimulates economic activity, increases employment and induces the long run aggregate supply and brings in best practices. The FDI policy was liberalized progressively through review of the policy on an ongoing basis and allowing FDI in more industries under the automatic route. FDI inflows had declined globally in 2009 and 2010. While India was able to largely insulate itself from the decline in global inflows in 2009-10, FDI flows had moderated in 2010-11.

The slowdown in FDI inflows could mainly be attributed to a lagged effect of a pause in implementing investment decisions, which could range between one to two years, depending upon the sector and size of individual projects. A number of global investors had then remained cautious about making large investments in new sectors, given the fragility of the global recovery. However, the months of April-June, 2011 have shown a strong revival compared to the last two years. June 2011 witnessed second highest inflow in last 11 years of US\$ 5.656 billion, representing an increase of nearly 310%, in US \$ terms, over the FDI equity inflows of US \$ 1.380 billion received in June, 2010. Therefore, we can say that there is a credible reversal of downward trend in FDI inflows in the current financial year, where a significant upward trend in the FDI inflows is evident. FDI equity inflows, for the first quarter of the current financial year (April- June, 2011), have been US \$ 13.441 billion, representing an increase of almost 133%, in US \$ terms, over the FDI equity inflows of US \$ 5.772 billion for the corresponding period of the last financial year (April-June, 2010). Commenting on the recovery Shri Anand Sharma, Union Minister of Commerce and Industry said, "There is a continuing effort on the part of the Government to make the FDI policy more investor friendly. The release of the final edition of the consolidated FDI Policy Circular effective from April 2011 is a step in this direction.

We have incorporated a number of significant changes in the policy and announcement of the policy for FDI in Limited Liability Partnership (LLPs), are indicators of the Government's strong commitment towards that end." India continues to be one of the favoured destinations for FDI. In fact, the UNCTAD World Investment Report (WIR) 2010, in its analysis of global trends and sustained growth of Foreign Direct Investment (FDI) inflows, reported India as the second most attractive location for FDI for 2010-2012. There has been a continuing and sustained effort to make the FDI policy more liberal and investor-friendly. Significant rationalization and simplification of the policy has, therefore, been carried out in the recent past.

For example, a major exercise has been undertaken for consolidation of FDI policy, with the aim of simplifying FDI policy, promoting clarity of understanding of foreign investment rules among foreign investors and sectoral regulators, as also for having a single policy platform. The process of consolidation involved integration of 178 Press Notes, covering various aspects of FDI policy, which

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had been issued since 1991, as also a large number of other regulations governing FDI. The document was released as 'Circular 1 of 2010', on 31 March, 2010, as per the commitment made.

The document has also been updated at six monthly intervals, to ensure that it remains current and updated. A number of significant changes in the FDI policy have also taken place since. Some of the recent changes include:

- (i) Review of policy on cases requiring prior Government approval for foreign investment: As of today, only proposals involving total foreign equity inflows of more than Rs.1200 crores (as against the earlier limit of the total project cost being more than Rs.600 crores), now require to be placed for consideration of CCEA. Further, a number of categories of cases, where prior approval of FIPB/CCEA for making the initial foreign investment had been taken, have been exempted from the requirement of approaching FIPB/CCEA for fresh approval. This has resulted in saving of considerable time and efforts for FIPB/ CCEA and also in expediting foreign investment inflows;
- (ii) Introduction of a specific provision for 'downstream investment through internal accruals': This will ensure that Indian companies have full freedom in accessing their internal resources for funding their downstream investments;
- (iii) Flexibility in fixing the pricing of convertible instruments through a formula, rather than upfront fixation: This change, which provides flexibility in fixing the pricing of convertible instruments through a formula, rather than through upfront fixation, will significantly help recipient companies in obtaining a better valuation based upon their performance
- (iv) Inclusion of fresh items for issue of shares against non-cash considerations, including import of capital goods/ machinery/ equipment and pre-operative/ pre-incorporation expenses: This measure, which liberalizes conditions for conversion of non-cash items into equity, is expected to significantly ease the conduct of business;
- (v) Removal of the condition of prior approval in case of existing joint ventures/technical collaborations in the 'same field: The requirement of Government approval for establishment of new joint ventures in the 'same field' has been done away with. As a result, non-resident companies are now also allowed to have 100% owned subsidiaries in India;
- (vi) Development and production of seeds and planting material, without the stipulation of having to do so under 'controlled conditions': FDI has been permitted in the development and production of seeds and planting material, without the stipulation of having to do so under 'controlled conditions';
- (vii) FDI has also recently been permitted in Limited Liability Partnerships (LLPs), subject to specified conditions: This change, which permits induction of FDI through the new modality of LLPs, will significantly benefit the Indian economy, by attracting greater FDI, creating employment and bringing in international best practices and latest technologies in the country. With a view to participative and informed policy making, a mechanism for undertaking stakeholder consultations, through web-based discussion papers, on important issues relating to FDI, was devised. Five discussion papers were released during 2010.

These covered FDI in 'Multi-Brand Retail Trading', 'Defence' and 'Limited Liability Partnerships', as also 'approval of foreign/ technical collaborations in case of existing ventures/ tie-ups in India' and 'issue of shares for considerations other than cash'. Of these five, policy action has been completed in respect of the last three papers, while issues pertaining to FDI in 'Multi-Brand Retail Trading', and 'Defence' are under active consideration of Government. A discussion paper on the 'rationale and relevance of caps' under FDI policy has also been released recently. India registered one of the highest increases in 2008 (more than China, Brazil, Indonesia, Argentina and South Africa). The total FDI flows into India increased dramatically to a peak US \$ 40.4 billion in the year 2008, despite the

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global recession. Most of these economies saw declines in 2009. Current financial woes of key markets will pose a challenge to India but at the same time the scenario has a potential to enhance the attractiveness of India as an investment destination,. A decade and a half ago the prospect of India becoming a major player in the global economy seemed a distance dream, today with the power of FDI it is a reality. With the ushering of social and economic base, we no longer discuss the future of India: we say “the future is India”.

ULTRA MEGA POWER PROJECTS

Ultra Mega Power Projects (UMPP) were launched to meet the growing needs of the economy, achieve power at low tariff, cater the needs of more than one states and to make swift capacity addition. These are very large sized projects, approximately 4000 MW each involving an estimated investment of about \$ 4 billion. The projects envisage to substantially reduce power shortages in the country. The Government has accordingly taken the initiative for facilitating the development of a few ultra mega power projects capacity each under tariff based competitive bidding route using super critical technology on build, own and operate basis.

These projects will meet the power needs of a number of States/distribution companies located in these States, and are being developed on a Build, Own, and Operate (BOO) basis. In view of the fact that promotion of competition is one of the key objectives of the Electricity Act, 2003, and of the legal provisions regarding procurement of electricity by distribution companies, identification of the project developer for these projects is being done on the basis of tariff based competitive bidding. For facilitating the development of these projects, Power Finance Corporation (PFC) has been designated as nodal agency. PFC has to create a project specific Special Purpose Vehicle (SPV), which in turn will perform the bidding process for the project. Following are the salient features of this initiative:

The Ultra Mega Power Projects would use Super Critical Technology with a view to achieve higher levels of fuel efficiency, which results in fuel saving and lower green-house gas emissions.

Flexibility in unit size subject to adoption of specified minimum Supercritical parameters.

Integrated power project with dedicated captive coal blocks for pithead projects.

Coastal projects to use imported coal.As per the provision of the competitive bidding guidelines issued by Ministry of Power, a two stage selection process has been adopted.

The first stage of bidding involves Request for Qualification (RfQ) containing qualifying criteria for selection of bidders. The RfQ documents submitted by the bidders are evaluated to identify those bidders who will be eligible to participate in the second stage of the process. The second stage of bidding process invites Request for Proposals (RfP) from the qualified bidders. After evaluation of the RfP documents, the successful bidder is identified on the basis of the lowest levelled tariff.

Role of States

From the initial step to the final commissioning of the UMPPs, the role of concerned State Governments is of immense importance. In fact, no major activity can be started without a clear identification of a suitable site by the concerned State Government.Right from site identification, the host State and the other power procuring States are required to continue to play a highly proactive role. In particular, some of the activities in which the concerned States are required to play a decisive role include finalization of site, land acquisition process, facilitation of studies at site, facilitation of obtaining state level environment and other clearances implementation of the R&R Plan, provide authorization to the PFC/SPV to carry out the bidding process on behalf of the distribution utilities, participate through its representatives in various committees set up for

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undertaking the competitive bidding process, facilitate signing of the Power Purchase Agreement, ensure proper payment security mechanism with the distribution utilities etc. In fact, it is the state utilities who enter into contract as per allocation of power.

Role of the Power Ministry

The Ministry of Power is playing a crucial role for the development of the UMPPs by coordinating between various concerned Ministries/Agencies of the Central Government, and with various State Governments/Agencies. Some of the key areas requiring the Ministry of Power's intervention include –

- Coordination with Central Ministries/Agencies for ensuring:
 - Coal block allotment/coal linkage
 - Environment/forest clearances
 - Water linkage

- Working out allocation of power to different States from UMPPs in consultation with the States.

- Facilitating PPA and proper payment security mechanism with State Governments/State Utilities.

- Monitoring the progress of the SPVs with respect to predetermined timelines.

Concept of Shell Companies (SPVs) and its Operationalisation

In order to enhance investor confidence, reduce risk perception and get good responses to competitive bidding, it was deemed necessary to create a project specific SPV and get it to tie up necessary inputs and clearances such as provision of site, fuel through captive mining blocks, water and in principle environment and forest clearances. In addition, shell companies would also be responsible for tying up necessary inputs from the likely buyers of power and facilitate tying up of power off-takes from these projects. In short, the preliminary project development activities including tie up of various inputs / clearances are to be carried out by the respective SPVs. These SPVs, along with the various clearances, tie ups, etc. are subsequently transferred to the selected project developer. Some of the main activities undertaken by the SPVs are:–

- Appointment of Consultants to undertake preparation of Project Report, preparation of Rapid Environment Impact Assessment Report and to conduct other studies as required etc.

- To finalise RfQ/ RfP documents in consultation with States / bidders

- To carry out RfQ/ RfP process and award of project

- Acquisition of land for the project as per requirement of bidding guidelines

- Obtaining allocation of Coal blocks for pit-head projects

- Getting clearance regarding allocation of water by the State Govt. for pit-head locations

- Approval for use of sea water from Maritime Board/ other Govt. Agencies for coastal locations

- Obtain/initiate environment and forest, clearances etc. as per requirement of Bidding Guidelines.

- Obtaining geological reports/ other related data from CMPDI for the coal blocks

- Signing of Power Purchase Agreements with Procurers.

Status of Awarded and Upcoming Projects

Four UMPPs namely Sasan in Madhya Pradesh, Mundra in Gujarat, Krishnapatnam in Andhra Pradesh and Talaiya in Jharkhand have been awarded to the identified developers. A brief details of these projects are given below:

Sl.No	Name of UMP	Type	Levelled Tariff (in Rs. Per kWh)	Actual Comm
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Commissioning Plan Implementation Status

Sl. No.	Project Name	Location	Capacity (MW)	Commissioning Status
1	Mundra	Gujarat Coastal	2.264	12 th Plan
2	Sasan	Madhya Pradesh	961	12 th Plan
3	Krishnapatnam	Andhra Pradesh Coastal	12.333	12 th Plan
4	Tilaiya	Jharkhand	1.771	12 th Plan

These projects are envisaged to fructify in 12th Plan, however, two units each of 800 MW of Mundra UMPP are expected to come up in the 11th Plan. Furthermore, Request for Qualification (RfQ) for two more UMPPs one in Sarguja District of Chhattisgarh and another at Bedabahal in Sundergarh District of Orissa have already been issued. Sites in respect of Tamil Nadu UMPP and Andhra Pradesh Second UMPP have been identified. Efforts are being made to bring them to bidding stage at the earliest. Sites selection processes are on for setting up of more UMPPs in different states like Jharkhand, Orissa, Tamil Nadu and Gujarat etc.

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SCIENCE & TECHNOLOGY

INDIAN SCIENTISTS TRAVERSE SHORTEST PATH TO SOUTH POLE

Braving temperatures as low as minus 54 degrees Celsius and navigating jagged sharp ice hills, India's first scientific expedition team to the South Pole took a different but short route to reach the earth's southernmost point — in just eight days.

The path has never been tried before by any other country, the scientists said.

The team led by Rasik Ravindra, director of the National Centre for Antarctic and Ocean Research (NCAOR), had left Maitri, India's second permanent research station on the Antarctica, on Nov 13, 2010 and planted the Indian flag at South Pole on Nov 22.

The eight-member team travelled 2,350 km distance (one side) between Maitri, and South Pole in arctic trucks braving the difficult weather conditions and traversing the tough terrain with snow-capped sharp razor-edged hills of 1-2 metre height.

According to Ravindra, they were asked by the Norwegian and US scientists to take a usually travelled curved route but the team decided to rather take a straight and short route to reach the southernmost tip.

The team, consisting of a geologist, glaciologist, geophysicist and a meteorologist as well as vehicle engineers, collected valuable data to study the impact of global warming on Antarctica.

The expedition travelled on four specialised arctic truck vehicles, which did face some problems due to the intense cold.

CELL PHONES: PRECAUTIONARY APPROACH NEEDED

In December 2010, Matt Parker, a British mathematician, tabulated the number of mobile phone masts in each county across the United Kingdom and then matched it with the number of live births in the same counties. He discovered that the correlation was so strong that in areas above normal numbers of mobile phones, he could predict how many more births above the national average occurred.

Parker concluded that for every additional mobile phone base station in an area, the number of births goes up by an average of 17.6 babies!

In reality, mobile phone masts have absolutely no bearing on the number of births. Masts do not make people more fertile. There is no causal link between the masts and the births despite the strong correlation.

The number of mobile phone transmitters and the number of live births are linked to a third factor, the local population size. As the population of an area goes up, so do both the number of mobile phone users and the number of people giving birth. Instinctively we tend to assume that correlation means that one factor causes the other!

Parker published a phoney press release highlighting his finding to see whether media outlets would jump to the incorrect conclusion that mobile phone radiation causes pregnancies. Main-stream media ignored the hoax release after checking out the facts. Some readers reacted differently.

"There were the expected people who clearly did not actually read what I wrote before seeing the headline and getting excited about this apparent scare story, but there were also seemingly

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endless comments from people who understood my correlation-causality project but could not help putting forward a possible causal link anyway” Parker said.

His headline to *The Guardian* article “Mobile phone radiation linked to people jumping to conclusions” was apt.

Over the years, there has been differing news on the risks of radiation from mobile phones. A WHO booklet published in May 2010, stated that no adverse health effects have been established for mobile phone use. Studies are ongoing to assess potential long-term effects. WHO noted that there is an increased risk of road traffic injuries when drivers use mobile phones (either handheld or “hands-free”) while driving.

According to HPA (HPA, May 17,2010), there are thousands of published scientific papers covering research about the effects of various types of radio waves on cells, tissues, animals and people. HPA’s views derived from them were identical to those of the WHO.

Widespread Use

Given the uncertainties and the widespread use of mobile phone technology, HPA recommended a precautionary approach.

This included a recommendation that excessive use of mobile phones by children should be discouraged. Every country must enforce international guidelines on mobile phone technology.

Some Possible Effect

In 2009, members of the ICNIRP (International Commission on Non Ionizing Radiation Protection; most countries have accepted the Commission’s guidelines) Standing Committee on Biology noted that there is some evidence of an effect of exposure to a Global System for Mobile Telecommunication (GSM)-type signal on the spontaneous electroencephalogram (EEG).

This may be of little functional significance since they did not observe significant effects on cognitive performance in adults. They noted that the effect is small and exposure seems to improve performance.

The authors noted that symptoms such as headaches and migraine had been attributed to various radiofrequency sources both at home and at work.

“However, in provocation studies a causal relation between EMF exposure and symptoms has never been demonstrated. Psychological factors such as the conscious expectation of effect may play an important role in this condition” (HPA, May 2010).

There were suggestions that radiofrequency energy may cause brain tumours such as glioma

In May 2010, the Interphone Study the largest of its kind in which thirteen countries including UK, Sweden, France and Germany collaborated concluded that overall, no increase in risk of brain tumours was observed with the use of mobile phones.

“There were suggestions of an increased risk of glioma at the highest exposure levels, but biases and error prevent a causal interpretation. The possible effects of long-term heavy use of mobile phones require further investigation”(*International J. Epidemiology*, 2010)

Over all, we need not lose sleep on the potential harm of mobile phone radiation. Let us minimize mobile phone use as a precautionary measure and discourage children from using them.

NANO SOLUTION FOR SAFE WATER

A new nanotechnology is likely to make drinking water a lot more safer and keep infections at bay by filtering out deadly bugs at the source.

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Both water molecules and bugs are so tiny that they are measured by the nanometre, 100,000 times thinner than a human hair. But at the microscopic level, the two actually differ greatly in size.

A single water molecule is less than a nanometre wide, while some of the littlest bugs are 200 nanometres.

Working with a specific block co-polymer, a University of Buffalo team has synthesized a new kind of nanomembrane containing pores about 55 nm wide, large enough for water to slip through, but too small for bacteria, reports the journal *Nano Letters*. — IANS

GENE SWAPPING BIRD FLU VIRUSES

The H1N1 flu virus that set off the 2009 pandemic could create yet more trouble. Research from a Chinese group has indicated that if this virus were to swap genes with a bird flu virus circulating in poultry, it can produce progeny that easily infect laboratory mice and are more virulent than the two parental strains.

When two strains of bird flu infect the same host, they can readily swap genes, a process known as reassortment. The 2009 H1N1 pandemic virus was itself a triple reassortant, with its genes drawn from bird, human and animal strains.

This mix of genes created a virus that readily infected humans, was easily transmitted from one person to another, and to which most people had no immunity.

The preceding three flu pandemics that occurred during the 20th century were also produced by viruses that had undergone reassortment.

In research being published this week in the journal *Proceedings of the National Academy of Sciences (PNAS)*, a team of scientists led by Jinhua Liu of the China Agricultural University in Beijing used laboratory techniques to create viruses with various combinations of genes drawn from the avian H9N2 virus and the pandemic H1N1.

Some 73 different reassortant viruses that replicated well in cultured cells were then tested on mice. Eight of those viruses were found to be more virulent than either of the parental strains, producing severe pneumonia in the animals.

Pigs, a Mixing Vessel

The worry is that such reassortment could take place in pigs, which have long been considered a 'mixing vessel' as they can be infected by human as well as bird flu viruses.

The H1N1 virus that caused the 2009 pandemic seems to have undergone reassortment in pigs before making the leap to humans. The viruses that caused the previous three pandemics too appear to have been in some mammalian host, which may well have been the pig, before causing disease in humans.

There is already evidence that the 2009 H1N1 pandemic virus is infecting pigs and swapping genes with other flu viruses.

In a paper published in the journal *Science* last year, Vijaykrishna Dhanasekaran and others reported a novel reassortant virus that had been isolated from pigs in an abattoir in Hong Kong in January 2010. The reassortant virus combined genes from the H1N1 pandemic virus and a H1N2 virus. Swine infected with the new virus showed only mild illness.

It was not yet possible to predict what subtype of the flu virus would cause the next pandemic, said Dr. Vijaykrishna in an email.

Although more attention was paid to the H5N1 bird flu, the latest *PNAS* study clearly highlighted the fact that other flu subtypes that were circulating in poultry had the potential to start

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future pandemics.

The H9N2 virus, which had become the “underdog of avian influenza study,” had been detected virtually in every country in Asia. Studies showed that it had become endemic in poultry in East and South-East Asia (including China), India, Pakistan and some West Asian countries, he added.

Sustained transmission of avian viruses in pigs increased the possibility of mammalian adaptation, thereby increasing the risk of such a virus emerging in humans, observed Dr. Vijaykrishna. As such, it was very important to monitor the flu viruses that were circulating in pigs.

NASA MISSION TO MARS, JUPITER MOON

Bringing Mars rocks to Earth and a mission to Jupiter’s icy moon, Europa, should be among the top priorities for NASA in the coming decade, a high-level panel of planetary scientists has suggested.

The National Research Council, which released a to-do list for NASA for the decade 2013-2022, also said if the US space agency cannot afford such multi-billion-dollar “flagship missions”, they should be delayed in favour of smaller ones, the New Scientist reported.

In its decadal survey of planetary science missions, the council recommended that NASA should make a Mars sample return mission its top priority among its large planetary science missions.

Bringing back Samples

Bringing Martian rocks back to Earth, it said, would allow scientists to study them with a much wider array of instruments than can be packaged on a Martian rover. That in turn would allow scientists to better search for signs of past or present life, the report noted. This scores over sending rovers to the Red Planet.

The panel’s second-highest priority for large missions is a probe that would orbit Europa, thought to harbour an ocean of liquid water beneath its surface.

The mission, the panel said, would help assess the moon’s potential for hosting life by trying to confirm the presence of an ocean and determining how far the ocean lies below the moon’s icy surface. — PTI

HOW THE NUCLEAR PLANT CRISIS HAPPENED

The crisis at the three Fukushima Daiichi nuclear power stations did not come from buildings collapsing due to the March 11 earthquake of magnitude 9 but from power failure following the quake. The tsunami knocked out the generators that produced the power. Lack of power in turn caused the cooling systems of the reactors to fail.

The Fukushima nuclear reactor 1 went critical on March 1971 and is a 460 MW reactor. Unit-2 and Unit-3 are 784 MW each and went critical in July 1974 and March 1976 respectively. All the three are Boiling Water Reactors (BWR) and use demineralised water for cooling nuclear fuel.

The fuel, in the form of pellets, is kept inside a casing called cladding. The cladding is made of zirconium alloy, and it completely seals the fuel. Fuel pins in the form of bundles are kept in the reactor core. Heat is generated in the reactor core through a fission process sustained by chain reaction.

The fuel bundles are placed in such a way that the coolant can easily flow around the fuel pins. The coolant never comes in direct contact with the fuel as the fuel is kept sealed inside the zirconium alloy cladding. The coolant changes into steam as it cools the hot fuel. It is this steam that generates electricity by driving the turbines.

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All the heat that is produced by nuclear fission is not used for producing electricity. The efficiency of a power plant, including nuclear, is not 100 per cent. In the case of a nuclear power plant the efficiency is 30-35 per cent. "About 3 MW of thermal energy is required to produce 1 MW of electrical energy. Hence for the 460 MW Unit-1, 1,380 MW of thermal energy is produced," said Dr. K.S. Parthasarathy, former Secretary, Atomic Energy Regulatory Board, Mumbai. "This heat has to be removed continuously."

In the case of the Fukushima units, demineralised water is used as coolant. Uranium-235 is used as fuel in Unit-1 and Unit-2, and MOX (a mixture of oxides of Uranium-Plutonium-239) is used as fuel in Unit-3.

Coolant Flow

Since a very high amount of heat is generated, the flow of the coolant should never be disrupted. But on March 11, pumping of the coolant failed as even the diesel generator failed after an hour's operation.

Though the power producing fission process was stopped by using control rods that absorbed the neutrons immediately after the quake, the fuel still contains fission products such as iodine-131 and caesium-137 and activation products such as plutonium-239.

Decay Heat

"These radionuclides decay at different timescales, and they continue to produce heat during the decay period," Dr. Parthasarathy said.

The heat produced by radioactive decay of these radionuclides is called "decay heat."

"Just prior to the shut down of the reactor the decay heat is 7 per cent. It reduces exponentially, to about 2 per cent in the first hour. After one day, the decay heat is about 1 per cent. Then it reduces very slowly," he said. While the uranium fission process can be stopped and heat generation can be halted, there is no way of stopping radioactive decay of the fission products.

Apart from the original heat, the heat produced continuously by the fission products and activation products has to be removed even after the uranium fission process has been stopped.

Inability to remove this heat led to a rise in coolant temperature. According to the *Nature* journal, when the temperature reached around 1,000 degree C, the zirconium alloy that encased the fuel (cladding) probably began to melt or split apart. "In the process it reacted with the steam and created hydrogen gas, which is highly volatile," *Nature* notes.

Though the pressure created by hydrogen gas was reduced by controlled release, the massive build-up of hydrogen led to the explosion that blew the roof of the secondary confinement (outer buildings around the reactor) in all the three units (Unit-1, Unit-2 and Unit-3). The reactor core is present inside the primary containment.

But the real danger arises from fuel melting. This would happen following the rupture of the zirconium casing. "If the heat is not removed, the zirconium cladding along with the fuel would melt and become liquid," Dr. Parthasarathy explained. The government has said that fuel rods in Unit-3 were likely already damaged.

Effect of Melted Fuel

Melted fuel is called "corium." Since melted fuel is at a very high temperature it can even "burn through the concrete containment vessel." According to *Nature*, if enough melted fuel gathers

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outside the fuel assembly it can “restart the power-producing reactions, and in a completely uncontrolled way.”

What may result is a “full-scale nuclear meltdown.”

Pumping of sea-water is one way to reduce the heat and avoid such catastrophic consequences. The use of boric acid, which is an excellent neutron absorber, would reduce the chances of nuclear reactions restarting even if the fuel is found loose inside the reactor core. Both these measures have been resorted to in all three Units. Despite these measures, the fuel rods were found exposed in Unit-2 on two occasions.

Fate of Reactor Core

While the use of sea-water can prevent fuel melt, it makes the reactor core completely useless due to corrosion. The case of Unit-4 is different from the other three units. Unlike in the case of Unit-1, 2 and 3, the Unit-4 is under maintenance and the core has been taken out, and the spent fuel rods are kept in the cooling pond.

Whatever led to a decrease in water level, the storage pond caught fire on March 15 possibly due to hydrogen explosion. The radioactivity was released directly into the atmosphere.

Spent fuel Fate Unknown

It is not known if the integrity of the cladding has been already affected and the fuel exposed. Since the core of a Boiling Water Reactor (BWR) is removed only once a year or so, the number of spent rods in the pond will be more.

If the fuel is indeed exposed, the possibility of fuel melt is very likely. Though the fuel will be at a lower temperature than found inside a working reactor, there are chances of the fuel melting.

Since it does not have any containment unlike the fuel found inside a reactor, the consequences of a fuel melt would be really bad. Radioactivity is released directly into the atmosphere. Radioactivity of about 400 milliSv/hour was reported at the site immediately after the fire.

WHAT THE RADIATION DOSE LEVELS MEAN

Every nuclear site in Japan has in place a permanent radiation monitoring system. This includes many fixed measuring posts at site boundaries, mobile measuring equipment which checks environmental radiation levels inside and outside the site boundary and permanent radiation monitoring equipment at the ventilation stack exhaust and cooling water outlets of the plants (*NucNet No 62a*).

The earthquake did not damage this system seriously. Radiation levels at various monitoring posts at the boundary of Fukushima-1 nuclear power station began to rise with ups and downs depending on weather and activity levels and showed steadily increasing levels. The background radiation levels were of the order of 0.07 microSv/hr; it rose to a few tens of microSv/hr and later to tens of milliSv/hr in the vicinity of the plant

At 11:00, 16 March, the dose at the Plant border was 3.3 milliSv/hr; evacuation area is up to 20 km from nuclear power plant. People who stay in 20km to 30 km from the Fukushima- Daiichi are advised to stay indoors. For Fukushima-2 nuclear power station the radiation level at the plant border was 0.386 milliSv/hr at 4:00 16 March

For units 2, 3 &4, the dose levels at different locations continue to be a few tens or few hundreds of milliSv measured at different times. Iodine-131, caesium-134, caesium-137,

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radioisotopes of xenon, krypton and other radionuclides released from the stricken nuclear reactors can cause exposure to the individuals. Among these, iodine-131 is very important during the early phase of the accident. Authorities distribute stable iodine tablets to the public if there is a possibility of exposure. Generally, counter measures include sheltering, ad hoc respiratory protection, administration of stable iodine, evacuation, relocation, control of access, control of food and water and use of stored animal feed and decontamination of affected areas and buildings.

Iodine Tablets

Stable iodine if present in the thyroid will prevent absorption of radioiodine by that organ. The dose reduction of 100 per cent is possible if stable iodine is administered before exposure. With administration one hour after exposure, the dose reduction will be 80 per cent if consumed after six hours of exposure stable iodine helps to lower dose to 50 per cent a day after it does not protect at all.

Impact on India

The radiological impact on India due to the radioactive releases from the Fukushima nuclear power plant will be an insignificant fraction of that, if any, due to natural background radiation. It will not cause any life-threatening doses to any one in India. Since we have state-of-the-art radioactivity measuring procedures with ultra sensitive equipment, we may be, in the coming weeks, able to detect iodine -131, if the reactors released large amounts of the isotope. Indian scientists measured traces of iodine-131 released from Chernobyl a few weeks after the accident.

Health physicists in every Indian nuclear power station routinely measure iodine -131 in goats' thyroid. Traces of iodine-131 may be deposited over grass in due course. Thyroid takes up the isotope. Extremely small amounts of radioiodine can thus be measured.

Indian scientists have measured iodine-131 on a few occasions over the past several decades. They detected the iodine-131 fall out from the Chinese and French atmospheric weapons testing and from the accident at the Chernobyl nuclear power station. In all these cases the doses to people were trivial and a negligible fraction of the dose due to background radiation.

We have reliable and sensitive techniques of measuring radioactivity in food stuffs. The administrative net work to collect food samples is also in place. This may be activated as a matter of abundant caution if there is any need. The accident at Fukushima is likely to have only local consequences.

FUKUSHIMA: JAPAN SETS NEW RADIATION SAFETY LEVEL FOR SEAFOOD

The government set its first radiation safety standards for fish Tuesday after Japan's tsunami-ravaged nuclear plant reported radioactive contamination in nearby seawater measuring at several million times the legal limit.

The plant operator insisted that the radiation will rapidly disperse and that it poses no immediate danger, but an expert said exposure to the highly concentrated levels near the Fukushima Dai-ichi plant could cause immediate injury and that the leaks could result in residual contamination of the sea in the area.

The new levels coupled with reports that radiation was building up in fish led the government to create an acceptable radiation standard for fish for the first time. Some fish caught Friday off Japan's coastal waters would have exceeded the new provisional limit.

Tuesday, TEPCO announced that samples taken from seawater near one of the reactors contained 7.5 million times the legal limit for radioactive iodine on April 2. Two days later, that figure dropped to 5 million.

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Experts agree that radiation dissipates quickly in the vast Pacific, but direct exposure to the most contaminated water measured would lead to “immediate injury,” said Yoichi Enokida, a professor of materials science at Nagoya University’s graduate school of engineering.

He added that seawater may be diluting the iodine, which decays quickly, but the leak also contains long-lasting caesium-137. Both can build up in fish, though iodine’s short half-life means it does not stay there for very long. The long-term effects of caesium, however, will need to be studied, he said.

The move came after the health ministry reported that fish caught off Ibaraki prefecture, which is about halfway between the plant and Tokyo, contained levels of radioactive iodine that would have exceeded the new provisional limit. Caesium also was found, at just below the limit. The fish were caught Friday, before the new provisional safety limits were announced.

Such limits are usually very conservative. After spinach and milk tested at levels far exceeding the safety standard, health experts said you would have to eat enormous quantities of tainted produce or dairy before getting even the amount of radiation contained in a CT scan. — AP

TRI-GATE: INTEL ENTERS THE 3-D FOR TRANSISTORS

Computer chip manufacturer Intel announced that it is preparing to enter a new dimension in transistors — literally. Known as Tri-Gate, its new transistor will be the first to go into mass production with a truly three-dimensional (3-D) structure. Intel says that the transistor will offer performance and efficiency benefits over 2-D models when becomes production ready in a new range of microprocessors later this year. But with some industry analysts calling it a risky venture, Jon Cartwright of Nature explores what the advantages are of 3-D.

What do transistors do?

Transistors are the building blocks of microprocessors, which are the ‘brains’ or computational devices inside PCs, laptops, smartphones and pretty much all modern electronic devices.

A transistor is essentially an automated switch that can store information as either a ‘1’ or a ‘0’, depending on whether the switch is on — letting electric current through — or off.

The wiring of several transistors together creates a device called a logic gate, which takes these ones and zeros and performs basic calculations with them.

Home computers available today contain billions of transistors wired into logic gates, and have huge processing power as a result.

What’s the difference between a 2-D and a 3-D transistor?

Transistors are usually made from silicon, which is a semiconductor — a material that can behave as both an electrical conductor and an insulator. They consist of a straight channel connecting a source to a drain, interrupted half way by a wide gate.

The gate is what makes the transistor a switch: apply the right voltage and a conductive pathway known as an inversion layer forms, allowing current to flow from the source to the drain.

In this instance, the transistor is on; without the inversion layer, no current flows and the transistor is off. All transistors mass-produced during the past 50 years or so have been 2-D. This means that the source, the drain and the channel connecting them all lie flat on the same plane. In Intel’s 3-D transistors, on the other hand, the channel protrudes from the surface in a ridge or ‘fin’. The result is that it has not one, but three sides in contact with the overlapping gate — thus its name ‘Tri-Gate.’

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Why is the 3-D design better?

Chip manufacturers such as Intel have been progressively shrinking transistors in order to pack more onto each chip and, ultimately, make faster computers. At present, the fastest chips use transistors that are about 32 nanometres in diameter — that's on the order of about 100 silicon atoms — and manufacturers will soon be producing 22-nanometre versions.

But this continued miniaturization has an attendant problem: as the transistor's source and drain get closer together, and as the channel gets smaller, it becomes harder for the gate to control the formation of the inversion layer. Simply put, the distinction between 'off' and 'on' becomes fuzzier. Having a 3-D structure solves this problem. Because it is in contact with three sides of the channel, the gate has much greater control over the inversion layer. This means that the on and off states are more distinct even when the transistor is shrunk.

What is the benefit for computing?

Intel will be incorporating Tri-Gate structures into its next generation of 22-nanometer transistors, slated to be production ready by the end of this year. The company says that, compared with its current 32-nanometre, 2-D transistors, Tri-Gate transistors will be up to 37 percent faster.

In general, the 3-D design should allow transistors to be packed more closely to one another, and so make it possible to fit more into the same space. There are subtle advantages, too. According to Intel, the structures leak less current than standard 2-D ones when not in use, which will improve the battery life of portable electronic devices such as laptops and smartphones.

Moreover, when they are run at relatively low voltages, they should consume less than 50 per cent of the power required by Intel's current transistors — which will be a boon for heavy-duty network servers.

Did Intel invent the 3-D transistor?

The concept of 3-D transistors has been around for well over a decade — the difficulty has been how to engineer one that can successfully be mass-produced. Because transistors now comprise just a few dozen atoms, even minor defects can have a huge effect on performance. Having features protrude from the substrate is particularly tricky, and Intel has not disclosed how its engineers have tackled this. The Tri-Gate design is essentially a variant of a 'FinFET' 3-D structure developed in the late 1990s by Chenming Hu and his colleagues at the University of California, Berkeley.

Other chip manufacturers such as IBM, Samsung and TSMC are all working on 3-D designs, but are not expected to put them into production until at least the next generation of miniaturization, after 22 nanometres.

What will follow 3-D?

Intel thinks the Tri-Gate structure should scale down to transistors of 14 nanometres and smaller. In principle, it should be possible to make transistors, 3-D or otherwise, of just a few atoms, although manufacturing consistency becomes ever more difficult as size diminishes. At some point, manufacturers will be forced to explore yet more dimensions. Perhaps at that stage the answer will be spintronics — an emerging technology that makes use of an electron's spin, as well as its charge.

CHINA'S AMBITIOUS SPACE PROGRAM

This year, a rocket will carry a boxcar-sized module into orbit, the first building block for a

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Chinese space station. Around 2013, China plans to launch a lunar probe that will set a rover loose on the moon. It wants to put a man on the moon, sometime after 2020. While the United States is still working out its next move after the space shuttle program, China is forging ahead. Some experts worry the U.S. could slip behind China in human spaceflight the realm of space science with the most prestige.

China is still far behind the U.S. in space technology and experience, but what it doesn't lack is a plan or financial resources. While U.S. programs can fall victim to budgetary worries or a change of government, rapidly growing China appears to have no such constraints.

"One of the biggest advantages of their system is that they have five-year plans so they can develop well ahead," said Peter Bond, consultant editor for Jane's Space Systems and Industry. "They are taking a step-by-step approach, taking their time and gradually improving their capabilities. They are putting all the pieces together for a very capable, advanced space industry."

In 2003, China became the third country to send an astronaut into space on its own, four decades after the United States and Russia. In 2006, it sent its first probe to the moon. In 2008, China carried out its first spacewalk. China's space station is slated to open around 2020, the same year the International Space Station is scheduled to close. If the U.S. and its partners don't come up with a replacement, China could have the only permanent human presence in the sky.

Its space laboratory module, due to be launched later this year, will test docking techniques for the space station. China's version will be smaller than the International Space Station.

Some elements of China's program, notably the firing of a ground-based missile into one of its dead satellites four years ago, have alarmed American officials and others who say such moves could set off a race to militarize space. China, having orbited the moon and starting collecting data on it, is moving toward sending a man there and beyond.

It hopes to launch the rover-releasing moon probe in about two years. Chinese experts believe a moon landing will happen in 2025 at the earliest. "The lunar probe is the starting point for deep space exploration," said Wu Weiren, chief designer of China's moon-exploring program, in a 2010 interview posted on the national space agency's website. "We first need to do a good job of exploring the moon and work out the rocket, transportation and detection technology that can then be used for a future exploration of Mars or Venus."

NATIONAL PROJECT ON CLIMATE RESILIENT AGRICULTURE LAUNCHED

The National Initiative on Climate Resilient Agriculture (NICRA) project was launched at Vadavathur village, Erumapatti block, Namakkal district recently.

NICRA has been promoted in the XI five year plan by ICAR constituent unit Central Research Institute for Dry Land Agriculture (CRIDA), Hyderabad.

This project is being implemented in 100 districts in India and four districts in Tamil Nadu. At Namakkal district, the Krishi Vigyan Kendra is the project implementing agency for the programme.

NICRA is implemented at Vadavathur village, Erumapatti block, Namakkal district which has recorded an average rainfall of 400 mm for the past 20 years when compared to 750 mm in the district.

Aim

The project aims to enhance the resilience of agriculture through development and application of improved production and risk management technologies.

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The following technological interventions were inaugurated at the village.

Inauguration of manually operated weather station to record daily rainfall, minimum and maximum temperature, relative humidity and wind speed.

Stocking of fish fry in temporary water ponds. Artificial insemination centre for cows and buffaloes. Improved water harvesting structure at senguttai, a public pond.

Protray nursery for hybrid vegetable seed multiplication. Custom hiring of farm machineries and implements

Distribution of drought resilient sorghum Co-30, Groundnut (TMV-13), Green gram (VBN-3), Black gram (Co-6), Red gram (Co-7), Vegetable cow pea seed (Arka suman), Bush type Lab Lab seed (CoGb14), onion seed (Co-6), turmeric seed rhizome (Alleppy supreme).

Fodder Slips

Distribution of fodder slips (Co-4), Multi cut fodder sorghum, Hedgelucerne, Fodder tree plants viz., Agathi, Subabul and Glyricidia.

Distribution of backyard chicks (Namakkal chicken-1, Aseel cross), large White Yorkshire piglets, Khakki campbell ducks, Nandanam-1 Turkeys. Boer Tellicherry cross rams, NARI Swarna cross Tellicherry rams and eves and carp fingerlings.

During the inaugural speech, Dr. S. Ayyappan, Secretary (DARE) and Director General, ICAR highlighted the importance of water conservation and adoption of new technologies for improving the productivity and profitability of the farmers through the group approach.

Vice-Chancellor Dr.R. Prabakaran, TANUVAS, Chennai and Dr. P. Murugesu Boopathi, Vice-Chancellor, TNAU, Coimbatore also spoke. A total of 1112 farmers and school children participated in the programme.

MEGHA-TROPIQUES WILL STUDY THE GLOBAL TROPICAL WEATHER: NARASIMHA

The Megha-Tropiques satellite is designed to study clouds in the tropical regions of the world that play a major role in climate change, said Roddam Narasimha, Member, Space Commission, on Wednesday at Sriharikota.

The Polar Satellite Launch Vehicle (PSLV-C18) put four satellites in orbit on Wednesday, including the Megha-Tropiques, which is an Indo-French mission. The Megha-Tropiques is meant for studying the weather in the short-term and climate in the long-term in the tropical regions of the world.

Dr. Narasimha, who along with the former ISRO chairman K. Kasturirangan, conceived the idea of building a satellite for specifically studying the global tropical weather, said that half of the land area in the world was in the tropics. The tropical region was a place where the skill in predicting the convective systems, humidity, water vapour and precipitation was of importance. Predicting the monsoons was a major problem in India, he said. Tropics radiated surplus energy received from the sun and this excess energy was transferred from the tropics to higher latitudes.

"The Megha-Tropiques promises to give us very special data," said Dr. Narasimha, who was former Director, National Aerospace Laboratories, Bangalore. "It will provide simultaneous data on humidity, rainfall, water vapour, temperature etc.. in the tropical regions in real time." This was the second satellite to study the global tropical weather after a satellite built jointly by the U.S. and Japan in 1997. He described the MADRAS (Microwave Imager for Detection of Rain and Atmospheric Structures) payload on board the Megha-Tropiques as "a livewire" instrument. ISRO Chairman K. Radhakrishnan said Megha-Tropiques had four scientific instruments. They were: the MADRAS

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developed jointly by the ISRO and the French national space agency, Centre National d'Etudes Spatiales (CNES), which would provide an estimation of rainfall, water vapour, ice and surface wind; the Sounder for probing Vertical Profiles of Humidity (SAPHIR) from the CNES; the Scanner for Radiation budget, also from the CNES; and the Radio Occultation Sensor for Vertical Profiling of Temperature and humidity, procured from Italy.

While the PSLV-C18 cost Rs.90 crore to build, the Megha-Tropiques was made possible with Rs.85 crore each from India and France. That is, the satellite totally cost Rs.170 crore.

Data will come to Bangalore

T.K. Alex, Director, ISRO Satellite Centre, Bangalore, which built the Megha-Tropiques, said the satellite's solar-panels had been deployed and its two antennae had opened up. "The spacecraft is doing well...We will stabilise the spacecraft by using star-trackers and gyroscopes so that it will always be looking at the earth," he said. The science data sent by the satellite would be received at the ground station at Byalalu, near Bangalore and at Kourou in French Guiana. 'But all the data will come to Bangalore and they will be processed there,' Dr. Alex said. The satellite would cover the entire globe in a day and information from it would reach the public within three hours. The 1,000-kg Megha-Tropiques would have a life-span of five years.

G. Raju, Project Director, Megha-Tropiques, said ISRO would start analysing the satellite's data in about two to three weeks. P. Kunhikrishnan was the Mission Director for the PSLV-C18 launch.

The 10-kg SRMSat, from the SRM University, near Chennai, would address the problem of global-warming and pollution in the atmosphere by monitoring the carbon-dioxide and water vapour there. The three-kg Jugnu, from the IIT, Kanpur, has a camera to keep a tab on the vegetation and status of water bodies. The 29-kg VesselSat, built by LuxSpace of Luxembourg, has an automatic identification system for locating ships at sea in the region covered by the satellite's footprints.

WORLD'S SMALLEST CAR FROM NANOTECHNOLOGY

Ben Feringa of Groningen University in the Netherlands reports on his research in the British scientific journal *Nature*, describing how the tiny vehicle is electrically powered. His electric nano car even has four-wheel drive.

The nano car is not the first externally powered molecule, but it is the first that uses its own power to move in a directed way across a surface. They regard their design as a step towards developing nano machines capable in the future of carrying out work at the molecular level. To make the car, Feringa and his co-researchers mounted four previously developed molecular motors onto a central beam. Each of the molecular motors then becomes a drive wheel. The team has yet to find a way of reliably producing cars in which all the drive "wheels" travel in the same direction. Currently they have to select by trial and error those nano cars that do actually move forwards. Electricity is provided by means of a scanning tunnelling microscope which transmits current through its extremely fine point to get the molecular car moving.

A brief pulse of half a volt changes the configuration of the molecular motors, and provided they all move in the same direction, the nano car moves forward around 0.7 of a nanometre.

The team got its molecular four-wheel drive to move around six nanometres across a copper surface with the aid of 10 pulses. — DPA

SMART GRID IS THE 'ENERGY INTERNET' OF THE FUTURE

In India, the demand for power is surging with shortage peaking over 15 per cent. Many of the

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households are still not connected to the country's electricity grid. According to the Ministry of Power, India's transmission and distribution losses are among the highest in the world, averaging 24 per cent of total electricity production, in some states as high as 62 per cent.

In fact, the total average losses are as high as 50 per cent when energy theft is taken into consideration of which technical losses alone account for 30 per cent of all losses. Indian utilities need to address challenges of high AT&C losses, payment default by consumers, encroachments on electrical network creating unsafe situations, theft of electricity and electrical equipment, distribution transformer failure and rising power purchase costs.

To address what is emerging to be a serious national issue, considering the increase in demand for power and to create the required infrastructure for growth, India needs to invest in building a modern, intelligent grid. Let us first define a grid.

A grid is a collective name for all the wires, transformers and infrastructure that transport electricity from power plants to end users. The present day grid is unidirectional and does not maximize technological developments.

Even today people need to inform the utility of a problem or failure in their area. The effort is to change this in India, and across the world. Solutions such as capability of remote disconnection on non-payment by consumers, automatic alarms when network is being encroached or when people engage in theft will enable utilities stop pilferage and avoid unsafe situations or accidents. In addition, optimal asset utilisation can be planned with online data of overloading of transformers and network, which can help reduce or prevent failures.

A national Smart Grid would evolve the existing system into one that would be better suited for the information flow which is required for energy conservation, higher reliability and the introduction of variable generation power from renewable sources. Smart Grid is the convergence of Information Technology (IT), communication technology and electrical infrastructure.

It is a network for electricity transmission and distribution systems that uses two way state-of-the-art communications, advanced sensors and specialized technology to improve the efficiency, reliability and safety of electricity delivery and use. It is actually a process, an evolution of the electricity network from generation to consumption in a way that is interactive, flexible and efficient.

Proper implementation of Smart Grid might provide uninterrupted electricity to consumers across India to a larger extent, even in remote locations, while eliminating wastage of power units. Smart Grid solutions would enable utilities to increase energy productivity and power reliability while allowing customers manage usage and costs through real time information exchange. It impacts all components of the power system like generation, transmission and distribution.

The Smart Grid presents some primary benefits including lower operating and maintenance costs, lower peak demand, increased reliability and power quality, reduction in power theft and resultant revenue losses, reduction in carbon emissions and expansion of access to electricity. Smart Grids through demand response and load management reduce the per unit production cost. By reducing the peak demand, a Smart Grid can reduce the need for additional transmission lines.

Smart Grids are undoubtedly the "energy internet" of the future. The engagement and cooperation of all stakeholders (regulators, utilities, vendors, customers, etc) is a vital first step. Everybody has to work together and move at the same speed.

It will take India a few years to realize the full impact of Smart Grid when a utility control room operator can regulate an electric meter in homes.

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The technology can help us reduce electricity transmission and distribution losses to 5-10 per cent annually. Without Smart Grid, India will not be able to keep pace with the growing needs of its cornerstone industries and will fail to create an environment for economic growth.

INDIA'S MANGROVE COVER RISES

India recorded a net increase of 23.34 sq. km of mangrove cover between 2009 and 2011, thanks to efforts of one of the most industrialised states, Gujarat, in planting and regenerating the ecosystem rich in biodiversity.

The new biennial assessment report by the Forest Survey of India (FSI) has commended Gujarat's contribution in planting and regenerating the mangroves, a salt tolerant plant community, which harbours a number of critically endangered flora and fauna species.

"Compared with 2009 assessment, there has been a net increase of 23.34 sq. km in the mangrove cover of the country. This can be attributed to increased plantations particularly in Gujarat state and regeneration of natural mangrove areas," according to the assessment by the FSI, an arm of Union Environment Ministry.

Mangroves in India account for about three per cent of the world's mangrove vegetation. The report says mangrove cover in India is 4,662 sq. km, which is 0.14 per cent of the country's total geographical area. Sundarbans in West Bengal accounts for almost half of the total area under mangroves in the country.

The very dense mangrove comprises 1,403 sq. km (30.10 per cent of the total mangrove cover), moderately dense mangrove is 1,658.12 sq. km (35.57 per cent) while open mangroves cover an area of 1,600.44 sq. km (33 per cent).

Mangrove forests are regarded as the most productive wetlands in the world on account of the large quantities of organic and inorganic nutrients released in the coastal waters by these ecosystems.

They also act as nurseries for fin fish, shell fish, crustaceans and molluscs. — PTI

AN ECO-FRIENDLY ORGANIC LED DEVELOPED

U.S. physicists have invented a new organic light-emitting diode (OLED) that promises to be brighter, cheaper and more eco-friendly than those currently widely used in electronic devices.

The new LED, known as spin-polarized organic LED or spin OLED, stores information in the electron's spin and the electrical charges. It also uses an "organic spin-valve," which are used in computers, TVs, cell phones and many other electrical devices, the study said.

The entire device is 300 microns wide and long and a mere 40 nanometres thick, which is about 1,000 to 2,000 times thinner than a human hair, the study said. The spintronic LED will be more eco-friendly, cheaper to make and brighter than today's OLEDs, and could outperform and replace all of the existing OLED technology, he said. However, the spintronic LED can only operate at a temperature of 280 Fahrenheit and emits only the colour orange, Z. Valy Vardeny, senior author said, adding that the device must be improved to run at room temperature and produce red, blue and eventually white.

The original LEDs, introduced in the early 1960s, use a conventional semiconductor to generate coloured light. Newer organic LEDs or OLEDs use an organic polymer or "plastic" semiconductor to generate light.

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THE HINDU

Holy grail of Particle Physics

Q. Write a short notes on Large Harden Collider.

This was achieved through the introduction of a hypothetical particle called Higgs — after Peter Higgs who proposed it — and an associated force.

With the advent in 2009 of the highest energy accelerator, the Large Hadron Collider (LHC) at CERN, Geneva, which opened up a new energy domain, hopes of discovering Higgs have been high.

Two entirely independent experiments at CERN, ATLAS and CMS, have seen an excess of events that are attributable to Higgs.

By summer, these experiments had excluded vast regions of mass where Higgs could exist, leaving just a narrow window. The latest results, announced on December 13, have squeezed the window further to around 125 times the mass of a proton. Since two independent experiments have arrived at the same conclusions, these are tantalising signals

— but not good enough to be called a discovery. At present there is just about one per cent chance of the excess being due to fluctuations in the background. The golden rule for discovery in particle physics is that such a chance should be less than one in a million. A definitive statement on the existence or non-existence of Higgs requires more LHC data running through 2012. If Higgs does not show up even then, there will be an upheaval in the current understanding of the sub-atomic world, with the crucial question on the origin of mass remaining unanswered. But that, as we have seen before in the history of physics, is only likely to throw up even more revolutionary ideas.

Aadhar: Time to Disown the Idea

“...the Committee categorically convey their unacceptability of the National Identification Authority of India Bill, 2010...The Committee would, thus, urge the Government to reconsider and review the UID scheme....”

This was the conclusion of Parliament's Standing Committee on Finance (SCoF), which examined the Bill to convert the Unique Identification Authority of India (UIDAI) into a statutory authority. With this categorical rebuff, the SCoF dealt a body blow to the Aadhaar project, which is being implemented from September 2010 without Parliament's approval.

Technically speaking, the SCoF report asked the government to bring forth fresh legislation before Parliament. However, a careful examination of the report shows that it does not just reject the Bill, it also raises serious questions about the idea of Aadhaar itself. In fact, the report so comprehensively questions the idea that any effort to introduce fresh legislation would require, as a prerequisite, a re- look at the foundational principles on which the project was conceived.

Q. What are the recommendations of 'Standing Committee on Finance' for Aadhaar?

There are broadly five important arguments in the SCoF report.

First, it contains scathing criticism of the government for beginning Aadhaar enrolment without Parliament's approval for the Bill. Currently, UIDAI enjoys only executive authority, and no statutory authority. The justification that the government presented before the SCoF was as follows: the powers of the executive are co-extensive with the legislative powers of the government, and this allows the government to exercise executive powers in spheres not regulated

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by legislation. The government also cited the Attorney- General's advice, which noted that "executive power operates independently" of Parliament and that "there is nothing in law that prevents the [UIDAI] from functioning under the Executive Authorisation."

The SCoF rejects this position, and states that the government's legal justification "does not satisfy the Committee." The legal position upheld by the SCoF is that co-extensiveness of powers does not permit the executive to do what it pleases; when constitutional rights and protections are potentially violated, the powers of the executive remain circumscribed by those of the legislature. Secondly, the SCoF raises serious questions about the enrolment process followed for Aadhaar numbers. The issue of Aadhaar numbers "is riddled with serious lacunae," and this problem can be traced to conceptualisation "with no clarity of purpose" and implementation in "a directionless way with a lot of confusion." For instance, the Ministry of Finance felt that there was "lack of coordination" across the six agencies collecting personal information, leading to "duplication of efforts and expenditure." The Ministry of Home raised "serious security concerns" over the introducer model used to enrol persons without any proof of residence.

The report concludes that the enrolment process "compromises the security and confidentiality of information of Aadhaar number holders," and has "far reaching consequences for national security." The reason: "the possibility of possession of Aadhaar numbers by illegal residents through false affidavits/introducer system."

Thirdly, the SCoF comes down heavily on the government for proceeding with the project without "enactment of a national data protection law," which is a "pre-requisite for any law that deals with large-scale collection of information from individuals and its linkages across separate databases."

In its submission to the SCoF, the government had taken a dismissive view of the right to privacy of individuals. It noted that "collection of information without a privacy law in place does not violate the right to privacy of the individual." The SCoF rejects this view, and notes that in the absence of legislation for data protection, "it would be difficult to deal with the issues like access and misuse of personal information, surveillance, profiling, linking and matching of databases and securing confidentiality of information."

Fourthly, the report strongly disapproves of "the hasty manner" in which the project was cleared. It concludes that a "comprehensive feasibility study...ought to have been done before approving such an expensive scheme." This conclusion follows the government's admission to the SCoF that "no committee has been constituted to study the financial implications of the UID scheme," and that "comparative costs of the Aadhaar number and various existing ID documents are also not available." The total cost of the Aadhaar project would run into multiples of ten thousand crore of rupees. For just Phase 1 and 2, where 10 crore residents were to be enrolled, the allocation was Rs. 3,170 crore. For Phase 3, where another 10 crore residents are to be enrolled, the allocation is Rs. 8,861 crore. In a rough extrapolation, for 120 crore residents the total cost would then be over Rs. 72,000 crore.

Fifthly, the report tears apart the faith placed on biometrics to prove the unique identity of individuals. It notes that "the scheme is full of uncertainty in technology" and is built upon "untested, unreliable technology." It criticises the UIDAI for disregarding (a) the warnings of its Biometrics Standards Committee about high error rates in fingerprint collection; (b) the inability of Proof of Concept studies to promise low error rates when 1.2 billion persons are enrolled; and (c) the reservations within the government on "the necessity of collection of IRIS image." The report concludes that, given the limitations of biometrics, "it is unlikely that the proposed objectives of the UID scheme could be achieved."

The SCoF report cites the experience from the United Kingdom, where a similar ID scheme was shelved. The SCoF report has invited sharp reactions from the business press and pro-business

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lobbies. One report argued that, after the Foreign Direct Investment-in-retail fiasco, it is “another Indian reform massacre”.

Aadhaar is an integral component of the neo-liberal reform programme of UPA-2. Each conclusion in the report should be discussed threadbare in the public domain. Biometrics should be withdrawn from government projects as a proof of identity. Alternative, and cheaper, measures to provide people with valid identity proofs should be explored.

However, it would be a travesty of democratic principles if the government disregards the SCoF report and pushes the project in through the backdoor.

Durban deal — now comes the far, far Harder Part

America’s special envoy for climate change, Todd Stern, infuriated the European Union (EU) by warning that much preparatory work had to be done before the negotiators could sit down to haggle.

The Durban conference ended with a last-ditch deal whereby developed and developing countries will, for the first time, work on an agreement that should be legally binding on all parties, to be written by 2015 and to come into force after 2020.

“The Durban platform provides an anodyne set of words, with much of the detail yet to be agreed and the teeth not really coming for eight years. The real challenge will be in agreeing the fine print.” Jonathan Grant of consultancy PwC said the scale of the task was daunting.

As G20 countries would need to cut their carbon intensity (the amount of CO₂ released as a proportion of energy produced) by 5 per cent a year to 2050.

France’s vast nuclear power programme of the 1980s delivered a 4 per cent per year cut for 10 years, he said, and the U.K.’s “dash for gas” to replace coal-fired power stations in the 1990s only produced cuts of 3 per cent a year for a decade.

FDI in Retail

Q. Describe the impact of FDI in retail on Indian market.

“How does (Commerce Minister) Sharma view India’s current Foreign Direct Investment guidelines? Which sectors does he plan to open further? Why is he reluctant to open multi-brand retail?” Those were among the questions U.S. Secretary of State Clinton posed in a cable to her embassy in New Delhi in September 2009, some months after Prime Minister Manmohan Singh began his second term.

Doing away with the ‘middle man’: The first to be devastated will be that poor ‘middlewoman’ — the vendor who daily provides our towns and cities with fresh produce. She did not push up the prices and has her modest margin squeezed each time they rise. That woman carrying that huge basket to your doorstep, on her feet 14-16 hours a day to feed her family. She’s the first ‘middleman’ target.

The more exploitative middlemen in the chain will be co-opted by giant retail which needs collectors and contractors, though not so many. It will slash their numbers after a while. This is The Mob taking over from the little guys on the block. You’re looking at massive displacement in the agricultural supply chain. Only, the new ‘middlemen’ will be Cardin-clad and Gucci-shod, with better access to government than the farmers everyone’s dying to save.

That poor woman vendor, whose life we need to improve, not destroy, brings you fresh produce. She has to, or she can’t sell it. (Tip: big retail operators pasting the words ‘natural’ or ‘fresh’ against their names are selling you stuff that could have been refrigerated, even frozen, for days).

Ten million jobs: Try not to die laughing. This comes from a school of economics that has gifted

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the world jobless growth for three decades now. We worked hard for two of those, making a big expansion of jobs impossible within our policy framework.

From the early 1990s, fantastic claims have been made of small farmers gaining from neo-liberal globalisation. For instance: farm incomes would rise 25 per cent if Indian prices were aligned to global prices; purchasing power would shoot up.

100 per cent FDI in sectors like seed.

The UPA wants to open up a sector that for all its awful flaws and hardships presently employs 44 million people and has total sales of close to \$400 billion.

(That's about 20 times the number Walmart employs on roughly the same turnover.) And gives some sustenance to many millions more if you think families. Small shops and 'big box retail' can co-exist, so croons the corporate choir. Sure, after wiping out countless thousands of tiny shops, the survivors can 'co-exist' with the big guys, who might even have minor errands for them to run. India's powerful will run the more important errands. That was clear from 2005 when then Walmart International Division chief John Menzer told his company's annual meeting: "In our six government meetings, we created a very positive image [of Wal-Mart]..." And: "We've energized the FDI lobby and preempted the anti-FDI lobby in India."

The National Commission for Farmers headed by Dr. M.S. Swaminathan had observed that rushing into contract farming without ensuring the needs, safety and bargaining power of the farmer would result in major displacement in the sector. But not to worry, Hillary, your team is still out there batting. Only retired hurt for the moment.

Besides, the 500-billion euro permanent bailout fund envisaged under the European Stability Mechanism Treaty will be organised quickly, as early as mid-2012 if member-states deliver on their commitment to ratify it promptly.

Germany, which held the view that private investors should not be protected during bailouts.

ZERO SCORE HOUSEHOLD

Q. Write a short notes on currently held on Socio-Economic & caste census & Its Modus Operandi.

The SECC is supposed to "rank" rural households on a scale of 0 to 7. A household's score is simply the number of "deprivations" it has from the following list of seven:

- (1) living in a single-room *kaccha* house;
- (2) having no adult member between the ages of 16 and 59;
- (3) being a female-headed household with no adult male member aged between 16 and 59; (4) having a disabled member and no able-bodied member;
- (5) being a Scheduled Caste or Scheduled Tribe; (6) having no literate adult above 25 years; and
- (7) being a landless household deriving a major part of its income from manual casual labour.

None of these criteria apply in the above examples.

After ranking households in this manner, a cut-off is supposed to be applied to identify "Priority" households — the main beneficiaries of the Public Distribution System (PDS) under the proposed National Food Security Bill (NFSB). For instance, if the cut-off is two, then Priority households will consist of all households with a score of two or more. The cut-off is supposed to be specified so that the share of Priority households in the population is around 46 per cent — the proportion of the rural population below the "Tendulkar poverty line" (about Rs.25 per person per day in rural areas), with a small margin for "targeting errors." That, at any rate, seems to be the game plan as of now.

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RUPEE IN UNCHARTED TERRITORY

Q. What are the reasons of fall of Rupees & Its impact on Indian Economy?

According to SEBI, there was an outflow of \$254 million from the domestic equity and debt markets, attributable to concerted selling by foreign institutional investors. A combination of domestic and global factors is behind the rupee's fall. Economic growth is slackening.

The widening current account deficit and the critical reliance on short-term capital flows to bridge it are adding to the pressure on the rupee. Recent export figures have dashed hopes that exporters would continue their sterling performance of the first seven months and help in containing the merchandise trade deficit. The sharp demand contraction in the traditional export markets — the United States and Europe — has begun to take a toll. A depreciating rupee makes India's imports costlier. Many items, notably petroleum, have an inelastic demand. The import bill is bound to go up steeply. Moreover, the falling rupee has offset the recent declines in the prices of certain imported commodities. On the other side, exporters who normally stand to gain say that they did not quite expect the rupee to slide so precipitously. Anticipating a further decline, many exporters are holding on to their proceeds, while importers have been rushing to buy dollars to cover their imports. What is intriguing is the Reserve Bank of India's rather passive stance in the face of such large declines in the home currency. It is possible that, in its assessment, the size of forex reserves is not large enough to defend the rupee in what promises to be a period of prolonged uncertainty and financial market volatility. Or else it wants to conserve its fire-power for future contingencies that may warrant aggressive intervention. Either way there is a strong case for the RBI to communicate its stance to the markets proactively. Its only significant policy initiative with a bearing on the exchange rate has been to increase the ceiling for FII investment in corporate and government bonds by \$5 billion in each category. The expectation is that debt flows to India will increase and that would relieve the pressure on the rupee to some extent.

CAG: SIX ANSWERS TO CLEAR DOUBTS AND MISPERCEPTIONS

The relentless campaign to discredit the Comptroller and Auditor General of India (CAG) and diminish the institution is continuing. One is not surprised; this has happened before, for instance in the Bofors case. However, one is dismayed because the campaign, unwittingly aided by some elements in the media, seems to be succeeding to some extent. It seems urgently necessary to dispel certain doubts and misperceptions before they gain ground and cause more damage.

1. Has the CAG been 'summoned' and 'questioned' as a witness by parliamentary committees?

Summoning and questioning the CAG would be similar to summoning and questioning the Chief Justice of India or a judge of the Supreme Court. It cannot happen, and does not seem to have happened. As far as one knows, the CAG appears to have voluntarily offered to make power-point presentations to the Joint Parliamentary Committee (JPC), and the presentation seems to have been followed by the usual Q&A session. One is not privy to what happened at the JPC meeting. If in fact there was any aggressive or adversarial questioning, one can only deplore that as unfortunate; but there is no basis for any such supposition. In so far as the Public Accounts Committee (PAC) is concerned, there is no need for it to "summon" the CAG or even request his presence, because the CAG is duty-bound to assist the PAC and will in any case be present at its meetings, virtually as a part of the committee.

2. Can the CAG's numbers and inferences be questioned? The CAG, like all human institutions, is fallible; it can commit errors, just as the Supreme Court's judgments can sometimes be wrong.

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The CAG's reports can of course be questioned, just as the Supreme Court's judgments can be criticised; but with the same care, respect and circumspection.

3. *Was it right on the part of the CAG to calculate a 'presumptive loss'?* If, in a given case, the decisions and/or procedures seem *prima facie* open to question, and there is no evidence of the financial implications having been taken into account, but at the same time it is not possible to calculate those implications precisely, there are two options.

The first is to make a mere bland statement that the decision taken or the procedure followed is questionable; the second is to try and make a rough assessment of the financial implications or 'presumptive loss' through an indirect method. The first option will give Parliament and the general public no idea of the seriousness of the case; they will not be able to form a judgment on whether they are looking at a major or minor matter. The second option will alert them to the seriousness of the case. If ensuring accountability is the objective, the second seems the right course. It must of course be accompanied by a suitable caveat. That is what has been done in the 2G report.

4. *Were there internal differences within the CAG's organisation? If so, was it right on the CAG's part to overrule the DG of Audit?* The answer to this has to be threefold:

(a) In any bureaucracy, the superior level approves or rejects or corrects proposals or drafts emanating from the subordinate levels; there is nothing unusual in this.

(b) Under the Constitution, there is only one CAG of India; the constitutional status of the Directors-General, the Accountants-General, and the entire Audit Department derives from the constitutional status of the CAG. The CAG is entirely within his rights in overruling the DG (if that is what has been done), correcting his numbers, and giving him instructions. There is no sense in asking "who is right, the DG or the CAG?" The DG has no separate existence apart from being a part of the CAG's organisation. The final decision is that of the CAG, and the responsibility for it rests with the CAG.

(c) In all cases, an audit objection passes through several stages of examination, checking, review, etc, both internally within the Audit Department and externally in correspondence with the audited organisation. Not only does the ministry or department or other organisation under audit get several opportunities for explanations and corrections, but the proposed audit comment also travels up and down between the field office and the CAG's headquarters several times, undergoing corrections, revisions, etc. Extraordinary care is taken to ensure the accuracy of facts and the defensibility of the arguments in an Audit Report. The point of this explanation is that the formulation and finalisation of the 2G report seems to have followed exactly the same course as is followed in all other cases.

5. *Did the Chairman of the PAC telephone or write to the CAG's office inquiring about the 2G report? If so, was this not a case of pressure on his part?* This is an extraordinary charge. Considering the close working relationship between the CAG and the PAC, there is hardly anything strange about telephonic or other communication between the two. If the Chairman of the PAC inquires as to when the audit report on a certain subject is likely to become available, can that be considered an improper inquiry? As for "pressure," it is grossly improper to make any such allegation, but apart from that, what pressure can the Chairman of the PAC in fact exert on the CAG? Is it being seriously suggested that the Chairman of the PAC wanted a certain kind of report to be written, and that the CAG, an independent constitutional functionary, was ready to produce a report as instructed?

NUDGING PENSION REFORMS

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Q. Comment on FDI in pension sector & Pension Fund Regulatory & Development Authority.

The Union Cabinet's decision to give statutory status to the Pension Fund Regulatory and Development Authority.

In 2003, the NDA government set up the PFRDA through an executive order.

The government is on an even stronger ground in not accepting the recommendation for a guaranteed minimum return to pension fund subscribers.

The standing committee had wanted pension fund managers to be appointed on the basis of their commitment to generate minimum returns. No prudent investment policy would insist on guaranteed returns from stock market investments.

Indeed, mutual fund subscribers are warned that investments in stock market instruments are subject to market risk.

For pension fund subscribers, the time horizon is even longer and the authorities will have to go the extra mile to educate them. Subscribers must be made familiar with the risks and rewards that go with their chosen pension plan, whether the investment is in debt or equity, or in a combination of the two. Once the IPRDA bill becomes law, the New Pension Scheme, which has not made a mark so far, will get a big boost. The opening up of the pension sector will make available large, long-dated funds for infrastructure.

FORMULA ONE IN INDIA

Q. Will you Justify formula one in India?

In a country of nearly 1.2 billion people where over 60 per cent are below any commonsensical definition of the poverty line, it is quite natural that motorsport, especially Formula One, is associated with the rich, new Indian elite.

This is perhaps why the debate whether motor racing is a sport or a meaningless exercise involving profligate spending still rages on in the country. Recently P.T. Usha, one of the greatest athletes the country has produced, trashed Formula One as a criminal waste of money. There are not many who think differently.

However, understanding the nuances of F1 would enable people to appreciate the sport better. And the truth is F1 is a sport and a business. The top Indian business houses vying for advertising space during the inaugural Grand Prix of India held at the Buddh International Circuit (BIC) in Greater Noida showed that F1, which has a total global television audience of 527 million, is indeed a fantastic medium for promoting brands in overseas markets. The sport could also act as a powerful vehicle for the steadily growing Indian automotive sector to position its brands globally. After all, the engine maps and components used in the F1 car are not very dissimilar to the ones in a road car today.

The Grand Prix of India, which attracted 95,000 spectators, has opened a new chapter in the country's sport. India's ability to organise top-end, world-class events, especially after the fiasco of the run-up to the Commonwealth Games, has been re-established. The early apprehensions about the conduct of the race and the fears that the farmers would protest against the event on account of the inadequate compensation handed out to them for land acquired to build the track blew over as the big day dawned.

The crucial role played by the Mayawati government in this regard and the help it offered to the

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local organisers, Jaypee Sports International, must be recognised. The organisers though could have avoided the embarrassment caused by the inexplicable act of not inviting India's Sports Minister Ajay Maken to the races.

F1 races in Asia — the Korean, Chinese, and Abu Dhabi — outside Japan tend to be handicapped by a lack of understanding of the sport, which has led to a rapid fall in spectator interest. It is here that young cohorts of the 'Facebook Generation' of avid F1 fans could give India an edge. The 5.371-kilometre long BIC, designed by the renowned German architect and track designer, Herman Tilke, and built at a cost of \$400 million, has drawn a lot of praise from F1 officials and the drivers. The future of F1 in India depends on how well the facility is utilised.

CHALLENGES AHEAD FOR INDIA'S NUCLEAR DIPLOMACY

Q. Discuss India's Nuclear Policy & Its Challenges.

After the diplomatic successes of 2008, when the Nuclear Suppliers Group (NSG) exempted India from the cartel's ban on atomic sales to countries that have not signed the Non-Proliferation Treaty (NPT) or placed all their nuclear facilities under international safeguards, 2011 has not been a very good year at all. Negotiations with the Japanese on a nuclear agreement have run aground, India's liability law is being unfairly attacked by its potential partners and, of course, the 46-nation NSG adopted new guidelines for the export of sensitive nuclear technology this June — Including enrichment and reprocessing (ENR) equipment and technology — that made the sale of these items conditional on the recipient state fulfilling a number of "objective" and "subjective" conditions. The first of these conditions, namely NPT membership and full-scope safeguards, were specifically designed to dilute the 2008 waiver India received and were not needed to ban ENR sales to any of the other three countries outside the NPT (Pakistan, Israel and North Korea) since the NSG's original guidelines — with their catch-all NPT conditionality for the export of any kind of nuclear equipment — continue to apply to them.

Though Washington denies targeting New Delhi and says it has been working to restrict the sale of ENR equipment and technology for many years now, the new guidelines' redundant reference to the NPT was introduced in order to fulfil an assurance that Condoleezza Rice, who was U.S. Secretary of State at the time, gave Capitol Hill in 2008. Some Congressmen feared other nuclear suppliers would steal a march on the United States by offering India technologies the U.S. wouldn't. To allay their concerns, the U.S. administration said it would ensure an NSG-level ban on sensitive nuclear technology exports to India. A draft was circulated in November that year and finally approved in June 2011.

The fact that India failed to prevent the adoption of the new guidelines despite knowing they were in the pipeline for more than two years suggests a certain complacency on the Manmohan Singh government's part. We know from WikiLeaks cables that the issue was dutifully raised by Indian diplomats in many of their meetings with U.S. officials. But never was the proposed ENR ban projected by the government as an attempt by Washington to unilaterally rewrite the terms of the nuclear bargain it had struck with India.

When *The Hindu* broke the story about the G-8 deciding to implement such a ban in 2009 pending its adoption by the full NSG, senior Indian ministers took the view that this did not matter. It was only when the Nuclear Suppliers Group finally adopted the new guidelines this June that South Block decided to put on its punching gloves.

The fact is that the NSG's 2008 decision to lift its embargo on India was not some kind of

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unilateral concession. It was part of a complex bargain involving reciprocal commitments by both sides. If the supplier nations agreed to drop their insistence on the NPT and full-scope safeguards and open the door to full civil nuclear cooperation with India, India committed itself to fulfilling several onerous steps, including the difficult and costly separation of its civilian and military nuclear programmes, the placing of its civilian facilities under International Atomic Energy Agency (IAEA) safeguards, the signing of an Additional Protocol, as well as extending support to a number of nonproliferation and disarmament-related initiatives at the global level. At a fundamental level, the logic of this bargain hinged on two components. First, the NSG was making a judgment about India's status as a responsible country with advanced nuclear capabilities. Second, the NSG and India were acting on the basis of reciprocity.

Though Indian officials made their anger known almost immediately in off the record briefings, External Affairs Minister S.M. Krishna finally provided the government's formal response to the new NSG guidelines in a *suo moto* statement to Parliament in August. Noting the concerns that had been raised by MPs, he made the following "clarifications":

- (1) The basis of India's international civil nuclear cooperation remains the special exemption from the NSG guidelines given on September 6, 2008 "which contain reciprocal commitments and actions by both sides."
- (2) That exemption accorded "a special status to India" and "was granted knowing full well that India is not a signatory to the Nuclear Non-Proliferation Treaty." Pursuant to the "clean" exemption, "NSG members had agreed to transfer all technologies which are consistent with their national law" including technologies connected with the nuclear fuel cycle.

The Minister then noted the statements made by the U.S., France and Russia following the NSG's June 2011 meeting in which each country tried to assure India that the new guidelines would not "detract" from or "affect" the original waiver granted in September 2008. Stating that not every NSG member has the ability to transfer ENR items to other countries, Mr. Krishna added: "We expect that those that do and have committed to do so in bilateral agreements with India, will live up to their legal commitments." He also held out a carrot — the huge expansion planned for India's civil nuclear industry — and repeated once again in that context that "we expect that our international partners will fully honour their commitments in this regard."

While the three big nuclear suppliers have all said the new guidelines do not "detract" from the grand bargain of 2008, South Block should not set much store by these assurances. The fact is that there has been a setback and a diplomatic effort is needed to recover lost ground and ensure that India is excluded from the purview of the new ENR restrictions imposed by the NSG. The one supplier that has been the most forthcoming so far is France. Indian officials will have taken heart from French Foreign Minister Alain Juppe's public articulation in an interview in Delhi last month that France did not consider itself bound by the new guidelines when it came to nuclear commerce with India. The Minister confirmed that notwithstanding the NSG rules, Paris remained free to sell ENR items and technology in a manner consistent with its national law and its bilateral agreement. French diplomatic sources also told this writer that the French delegation at the NSG meeting in June had entered a verbal reservation to the new ENR guidelines questioning their applicability to India. The French intervention was not challenged and was duly recorded in the minutes, the sources said.

Of course, the challenge for India will be to hold the French to their word, as and when the requirement for cooperation in the ENR field is required. Though India has its own capabilities in these fields, there is no reason why it should not seek access to the best international components and equipment for the new reprocessing plant it has committed to build. With both France and Russia, India must make it clear that the multibillion dollar contracts which are on the anvil for the purchase of new reactors will also depend on Paris and Moscow's willingness to follow through on their promises and commitments on

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full civil nuclear cooperation. The U.S. has not so far committed itself to sell ENR equipment to India. New Delhi can live with that. But not with American efforts to block others from cooperating with it.

CHINA'S STAR TREK, STEADILY PACED

Q. Emphasize on China's Space Achievement.

China has taken another major step forward in its human spaceflight programme when Shenzhou-9, a capsule carrying three crew, one of them the country's first space woman, docked with an orbiting laboratory, Tiangong-1, recently. The Asian giant becomes the third nation that can send humans to rendezvous, dock with and then move into another orbiting spacecraft. This capability is essential for achieving its goal of establishing a full-fledged space station, which will be permanently manned, by early next decade.

China's first woman astronaut, Liu Yang, a 33-year-old Air Force pilot, made her voyage on the 49th anniversary of the Soviet Union's Valentina Tereshkova becoming the first woman to go to space. In that intervening period, there have been over 50 women in space, including Indian-born Kalpana Chawla who lost her life when space shuttle Columbia disintegrated during re-entry in 2003. 'Plan 863'

China launched its first satellite, the 173-kg Dong Fang Hong 1, in April 1970. A few months later, the country's top leadership gave the go-ahead for a project to send humans into space. But that effort soon fizzled out, given the daunting technological complexity involved and the cost of mastering it.

However, the idea was resurrected in 1986 when the Chinese government embarked on "Plan 863" so that the country could rapidly close the gap with advanced nations in chosen areas of science and technology. Aerospace was one such field that was selected.

The following year, experts on a committee, which was set up to develop a detailed plan for the space sector, decided that a manned effort should have the construction of a space station as its long-term goal. "The goal of constructing a space station, as opposed to going to the moon or some other long-term objective, was set very early in Chinese deliberations," according to Gregory Kulacki, a China expert with the Union of Concerned Scientists, a U.S.-based non-profit science advocacy group.

Manned Spaceflight

Drawing on Chinese-language histories of the space programme, he, along with Jeffrey G. Lewis of the Monterey Institute of International Studies in California, had published a paper in 2009 titled "A Place for One's Mat: China's Space Program 1956-2003." He has recently written another article, "Why China is Building a Space Station."

Having a space station as the ultimate objective was never a point of contention among those who wanted the country to send humans into space, observed Dr. Kulacki in the latter piece. The country's leaders felt compelled to build a space station because their space experts believed that the U.S., the Soviet Union, Europe and Japan were investing heavily in technologies for that purpose. They also thought that South Korea and India, might join as partners or develop space stations of their own.

"From the beginning, and throughout the development of the Chinese human spaceflight programme, the goal was never to catch up or surpass other nations but to avoid falling too far behind," he remarked.

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But there were vigorous internal debates on whether to have a manned space programme at all. Issues of whether the country had the necessary financial, human and technological resources for such an ambitious effort came up. A minister for aeronautics and astronautics voiced concern that a manned programme would hinder the development of ballistic missiles and application satellites that were needed.

The debate finally ended only in September 1992 when the Standing Committee of the Politburo approved the human spaceflight programme with the space station as its ultimate objective.

Interestingly, according to Dr. Kulacki, there were also arguments about the space transportation system that should take astronauts to space and back. A group at the Chinese Academy of Launch Vehicle Technology (CALT) wanted to see a reusable space shuttle being developed. They took the view that sending humans in a space capsule would only “disgrace the nation.” However, the development of a powerful variant of the Long March rocket so that foreign satellites could be launched on commercial terms settled the matter in favour of a capsule.

From 2003

China demonstrated its capability for manned spaceflight when Shenzhou-5 took Yang Liwei aloft in 2003. Two years later, two astronauts circled the earth for nearly five days in Shenzhou-6. Then, in 2008, three men went on a three-day mission aboard Shenzhou-7, with one of them coming out of the capsule to carry out a space walk.

The experimental space laboratory, Tiangong-1, was put into orbit in September last year. In preparation for the present mission, an uncrewed Shenzhou-8 spacecraft was sent in November to dock automatically with the orbiting lab. The Shenzhou-9, with its three astronauts, docked with the Tiangong-1 on June 18. Soon afterwards, video images of the astronauts entering and floating about in the lab were beamed back to earth.

The 8.5-tonne space lab was quite modest, observed analyst Marcia S. Smith, founder and editor of the website, SpacePolicyOnline.com. It was only about half the mass of the world’s first space station, the Soviet Union’s Salyut-1. Skylab, America’s first space station that was launched in the 1970s, had weighed about 77 tonnes. “Nevertheless, occupying a space station will be a significant achievement for China,” she pointed out, writing before the astronauts left Earth.

The Shenzhou-9 is expected to remain in space for 13 days, according to a report from the Xinhua news agency. During this time, it will undock and attempt a second docking under manual control (the first had been done using automatic systems).

The Tiangong-1 has a life of two years. Another set of crew will be sent to the lab on the Shenzhou-10 either later this year or in 2013. The Tiangong-1 will be followed by a larger Tiangong-2 and, subsequently, by Tiangong-3. While Tiangong-1 is intended to support a crew for only about two weeks at a time, later space labs will allow longer duration stay onboard.

ONE SIMPLE STEP TO INCREASE OUR GDP

Q. How disabled persons can contribute in Indian GDP?

In America, 12 per cent of the population is counted as disabled, the corresponding percentage in England is 18 and in Germany, nine. In India, government statistics claim it is two per cent.

Until the year 2000 — 53 years after Independence — the Census did not record a single disabled person in India! In other words, in the minds of the people making policy, taking

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decisions and allocating funds, the disabled did not exist. And if they did not exist, obviously we did not do much for them. So in the first 53 years of Independence, while we were building the infrastructure of our country, we did little or nothing to include them in our thoughts and actions. Therefore, the bulk of our infrastructure is not disabled-friendly, leaving them further marginalised, and disabling them further.

Diesel Dilemma

Faced with criticism that rich buyers of diesel cars are benefiting from subsidies on the fuel, the government is considering imposing a higher excise duty on such motor vehicles. Sales of diesel cars and utility vehicles have been rising steadily in the last year and more thanks to the wide gulf between the retail prices of petrol and diesel. Historically in India, higher taxes have always made petrol more expensive than diesel. With the government in recent times being chary of raising the price of diesel due to its impact on inflation — the last increase was effected a year ago — the price gulf with petrol only widened further, especially because petrol prices continued to rise. Spotting an opportunity here, car manufacturers pushed diesel engine models in the market. Though considerably more expensive than their petrol variants — and there is no real economic justification for why this should be so — diesel cars were still attractive for consumers given the lower fuel costs. This naturally led to the increasing ‘dieselisation’ of private motor transport. Other undeserving users getting subsidised include mobile phone companies who use diesel to power thousands of towers across the country.

While the revenues from the higher duty on diesel cars may be welcome to a funds-starved government and the move will also address critics who feel that rich car buyers are walking off with a subsidy aimed at the poor, a few questions nevertheless arise. Studies show that diesel cars as a category consume just between 12-15 per cent of all diesel sold in the country. Higher excise will help recoup some of the undeserved subsidy the owners of new cars will enjoy but what about the existing population of diesel cars? Surely they cannot continue to enjoy the subsidy. Perhaps the government ought to look into introducing a variable annual road tax on all cars with the levy on diesel cars pegged to neutralise the advantage of subsidised diesel. Car manufacturers insist that any punitive levy on diesel cars will affect the profitability of investments already made in plant and machinery. But the demand for diesel cars will also fall if the fuel subsidy were eliminated say, by a system of dual pricing. In Ireland, for example, farm diesel, with a green additive, sells for roughly €0.5 a litre less than regular diesel. If farm consumption has to be subsidised, dual pricing is an option that India should seriously consider, though stringent monitoring against diversion and resale is essential. By one estimate, roughly 10 per cent of all diesel sold in Ireland is illegal. Whatever the government decides, however, it must find a way to stop subsidising the owners of diesel motor cars.

INDIA IS NOT A GLOBAL POWER

Q. Is there a superpower in the Contemporary World?

Power in inter-state relations is the capacity as well as the political will to use that capacity, of one country to make another country do something which, left to itself, it would not do or would not want to do. “Soft” power should not be considered a component of the concept of power since it is not relevant to modifying the behaviour of another country; it can and does serve as a model and indirectly — and over a period of time — to earn goodwill among sections of society of other countries for its culture. But it has no place in the discussion of power as a means to bring about a change in the attitude of another country. India has a genuine attraction for many in the Middle East because of its pluralism combined with a functioning democracy; however, it does not give any “power” to India to influence decision-making in those countries. When we talk of power, we are thinking of military, economic and diplomatic clout, not of Bollywood or yoga.

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The 20th century offers many examples of the exercise of power by states mostly in neighbouring countries or countries regarded as forming a part of their spheres of influence. There were at least 10 cases of American intervention, starting with Cuba when the Platt amendment was adopted in the Senate which gave virtual control over Cuba to the U.S. as well as provided the framework for the lease of Guantánamo Bay. Other examples are Panama in 1903, Nicaragua in 1912, Haiti in 1915, the Bay of Pigs fiasco in 1961, Chile in 1973, etc. An example of the blatant exercise of power was the Anglo-French-Israeli joint attack on the Suez Canal zone in 1956. The Soviet Union used brute force to restore its domination of Hungary in 1956 and Czechoslovakia in 1968. There was of course the Soviet intervention in Afghanistan in 1979 which had a lot to do with the eventual collapse of the Soviet empire.

The establishment of the United Nations in 1945 and the evolution of international law since then have completely changed the rules of the game of the exercise of power by the introduction of the concept of legitimacy. It is universally recognised that there are only two scenarios of the legitimate use of force: pursuant to the Security Council authorisation or in the exercise of the right of self-defence. The latter has been severely circumscribed by the Charter which lays down that the right of self-defence can be exercised only in response to an attack by another state, thus rejecting the “pre-emptive” right of self-defence. The one case of unilateral use of force in the 21st century was the American intervention in Iraq in 2003 which the international community refused to recognise as legitimate since it did not have the imprimatur of Security Council approval nor was it accepted as having been in the exercise of the right of self-defence. United States/NATO intervention in Afghanistan, on the other hand, was sanctioned by the U.N.

Of the three constituent elements of “power” — military, economic and diplomatic — the economic is crucial. This is self-evident and does not need elaboration. One important reason why the Soviet Union lost the Cold War was the mismatch between its bloated military and the inability of its economy to support and sustain it.

The answer is clearly in the negative. America has global reach, and its military is no doubt the strongest in the world. But this does not confer on it the capability to impose its will on others. To be fair to it, the U.S. does not ask others to recognise it as a superpower, though it does not protest when the rest of the world describes it as one. The Americans would rather prefer to be recognised as the “exceptional” power. The capacity of its military as well as the will of its political leadership to deploy anywhere at any time without worrying about adverse political or diplomatic reaction remains, but it is severely hobbled by its increasing economic weakness. To that extent, it is a global power. But it lacks in other attributes of power. The most embarrassing moment for American diplomacy was in March 2003 when it failed to persuade enough members of the Security Council, including some of its close allies, to support the “second resolution” on Iraq which would have legitimised its intervention in Iraq; only four countries promised support. More and more members in the U.N. vote in favour of the resolution criticising American sanctions against Cuba. The U.S. has not had much success in getting countries such as India to fall in line with its Iran policy. Getting its nominee elected president of the World Bank has less to do with its diplomatic strength and more to do with the voting advantage that it and its allies enjoy as also to the lack of unity among the challengers for the job.

America is without doubt a super “soft” power. Its movies, television series, popular music, and, most of all, its espousal of democratic values have immense resonance among the youth of the world, especially in the Arab and Muslim world. But these do not translate into “power.”

China is portrayed as a legitimate claimant for the title of global power. China’s economy has been the principal engine of growth of the world economy but is now slowing down and facing the prospect of a reality bubble, political instability and huge corruption scandals. It is now not clear when, if ever, it will become the biggest economy in the world. Its military capability is nowhere close to America’s. In

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R&D and labour productivity, it is way behind the U.S. China has increased its military profile, especially its navy. But the neighbours, while distrustful, are not afraid of China because of the American “pivot” or other factors. Much weaker countries, such as the Philippines, refuse to be intimidated by Chinese threats. If the U.S. and China can be eliminated as candidates for “superpower” status, there is no need to consider any other state for the position. Is India at least a “regional” power? The most conspicuous example of the exercise of power by India was the operation in 1971 in former East Pakistan. India’s intervention was not authorised by the U.N.; India justified it on the ground of self-defence since Pakistan had earlier attacked several Indian Air Force bases as also on the one that Pakistan had in fact invaded India in the form of 10 million refugees. There is also the case of the intervention in the Seychelles in 1986, and one case of ill-advised military intervention, in Sri Lanka in the late

1980s which had disastrous consequences for India. There was talk of India sending a brigade to Iraq in 2003, but wiser counsel prevailed. As a general rule, Indian participation in military operations has been as a part of U.N.-mandated peace-keeping operations, with the exceptions mentioned. The global powers of yesteryear became such for concrete reasons: control over sources of raw materials including oil and gas and protection of the interests of their corporations, e.g. the case of the United Fruit Company in Guatemala in the 1950s, an American company in which the then CIA director was a shareholder.

Why do some analysts in India feel enamoured of the prospect of India being called a global or a regional power? Is it because of the sense of self-importance or prestige? Will such a “title” give India a place at the high table in international diplomacy? Others sometimes use this adjective for us for one or both of these reasons: to flatter us — and we are the most flattery-prone people in the world — and/or to make us take foreign policy steps which would serve the objectives of those flattering us. Will the label of regional power help ameliorate the lives of the poor in our country, which is and should continue to be the guiding principle of our domestic as well as external policy? Further, while we have soft power of doubtful practical utility, we definitely are or have become or are becoming a super “soft state.” India’s neighbours have the full measure of its will, or lack thereof, to use whatever hard power it has.

One criterion of military power ought to be, not the unlimited capacity to pay for imports of hardware, but how much of it is the country able to manufacture domestically; India fares poorly in this respect. The possession of nuclear weapons does not change anything. Pakistan too has them. And, our nuclear weapons did not deter Pakistan from indulging in the Kargil adventure, but Pakistan’s nuclear weapons apparently deterred us from crossing the Line of Control (LoC) at that time, and restrained us after 26/11. The boom years of India’s economy seem to be over at least for the short term. Our forex reserves have ceased to grow and are likely to dwindle, with the rising energy bill and diminished exports. A reduction in interest rates might at some stage induce NRIs to start pulling out their deposits as it happened in 1990-91. A declining economy makes for a poor case for acceptance as a “power” of any kind. In today’s world, the concepts of super or global or even regional power do not make sense. We should not waste our time or energy over this non-issue. Fortunately, the Indian government does not seem to be much preoccupied about such recognition.

Dealing with the Devil’s Excrement

In coming years, India will become evermore dependent on oil from an evermore troubled region. “Ten years from now”, the man who founded OPEC told a young graduate student during a 1976 interview, “twenty years from now, you will see: oil will bring us ruin”. India’s strategic community ought to reflect on those words: little-noticed but seismic shifts in oil geopolitics mean the country is staring at a strategic challenge of a magnitude it is utterly unprepared for. From a peak of more than five billion barrels in 2005, the United States’ crude oil and refined products imports fell to 4.14

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billion barrels last year [See Table 1]. Imports from Saudi Arabia and the volatile Persian Gulf have been in slow but steady decline for years. In 2011, over 23 per cent of all U.S. crude oil and refined products came from Canada — over twice as much as from Saudi Arabia, six times as much as Iraq and 20 times as much as Libya. If a \$7-billion pipeline linking Canada's oilfields to refiners in the U.S. passes environmental hurdles, the country could even end up being a net exporter of oil.

In time, the U.S. might draw back from the Middle East on this receding tide of oil — a nightmare for India and other growing Asian powers. Ever since 1947, the U.S. has used guns and cash to impose order across the Middle East. Now, India could be left needing evermore oil from a region that is ever-less stable. India, like China, has watched helplessly as Western-led policies in the Middle East have led oil-producing Iraq and Libya into quasi-anarchy. Iran's nuclear programme could, conceivably, spark-off murderous regional confrontation.

Emerging, oil-thirsty Asia, the United States Energy Information Administration has estimated, will be consuming some 33.6 million barrels per day [mpd] of oil by 2025 — more than double its demand at the turn of the century. It won't be able to get it, though, without order in the Middle East. For India, there is another peril. Indian policies on Pakistan have long rested on the assumption that the U.S. would push its troublesome ally away from the brink. The reason the U.S. locked itself into an alliance with Pakistan in the first place, though, was to protect the Persian Gulf and Saudi Arabia — and the future, could care less about regional security. OPEC's founder, Juan Pérez Alfonzo, had warned of oil's exceptionally toxic political properties back in 1976: "we are drowning", he famously said, "in the Devil's Excrement". The petro-states on which growing economies like India rely to fuel their search for prosperity, he had realised, simply cannot be stable. In the mid-1970s, when Mr. Alfonzo had made his dark prophecy about ruin to scholar Terry Lynn Karl, the corrosive character of the Devil's Excrement was little understood. Instead, it appeared to have made the ruler of every petro-state a Midas. The Shah of Iran promised his people a "great civilisation"; Carlos Andrés Pérez, Venezuela's President, imagined a future where "Americans will be driving cars built by our workers in our modern factories".

In a seminal 1999 article, since fleshed out by other economists, Dr. Karl explained why the souring of the dream could not just be attributed to mismanagement or corruption. Instead of building infrastructure and industries, she noted, the cash available drove petro-states' rulers to establish patronage networks that ensured the survival of their regimes. There were no incentives to engage in economic reforms, and easy cash killed entrepreneurship. In time, generous handouts led entire "polities to develop an addiction to petrodollars". Few took oil-pessimists seriously — in spite of the clear warning signs that emerged from the 1979 revolution in Iran. From the outside, Libya's economy grew at six per cent in 2007, winning it applause from the World Bank. Bahrain has a per-capita income not dissimilar to New Zealand. Egypt grew at 4.7 per cent in 2007. Bahrain and Libya built their future by pumping the seemingly exhaustible pool of cash from the ground beneath their feet. Tunisia, Egypt and Yemen exported their own inexhaustible pool of low-wage workers to the petro-states.

But the growth rates masked a less happy reality: the apparent prosperity didn't drive industrialisation or generate productive jobs. Half the population in the arc of nations running from Nigeria to Pakistan is less than 25 years old, but unemployment is at record levels.

There's a simple reason why the world's economy is powered by such a politically toxic fuel. Bizarre as it might sound at a time when petrol costs Indians well over Rs.70 a litre, the Devil's Excrement is relatively cheap [See Table 2]. From 1946 to 1973, the price of crude in the U.S. stood at just over \$20 per barrel, measured at 2012 prices. In the wake of OPEC's efforts to ramp up oil prices, and the Iranian revolution, it surged to over \$100. Then, the data show, oil prices again hovered

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around the pre-1973 historical average until 2001, when 9/11 ushered in a new era of war. But even now, crude oil is cheaper in real terms than in 1980.

Even more important is this: incomes in the U.S., the world's largest consumer of oil, have risen faster than oil prices. In 1929, an average American would have had to pay 1.49 per cent of her or his annual income of \$84.90 to buy a barrel of crude oil, which then sold for \$1.27. Fifty years later, in the wake of the Iranian revolution, oil prices soared to \$31.61. But the annual earning of the average American had risen even more sharply, to \$7,956. That meant that a barrel of oil would cost them just 0.39 per cent of their earnings — a quarter of what it did in 1929. In 2008, oil prices soared to \$96.91. The average American earned \$35,931 that year, which means a barrel of oil would cost them 0.26 per cent of their earnings. Now, consumers in the world's great economies are paying more than ever for oil — but those who sell it aren't prospering, either. Barring Norway, the world's largest oil exporters are now poorer, relative to the world's great economies, than they were five decades ago. "The conclusion must be," the commentator Amir Taheri wrote in 2006, "that those who buy oil get rich and those who sell it do not."

For geostrategic experts, though, it has long been clear that cheap oil comes at a high price. Ever since 1947, the U.S. purchased stability in the Middle East by funding client regimes, and setting up a string of bases stretching from the Persian Gulf to Turkey. In the next six years, though, U.S. defence spending will decline by as much as \$477 billion — a consequence of wrenching economic pressures which also means there may be less to spend on propping up pliant governments. Given the country's declining interest in Middle East oil, there will also be less and less reason to do so. There is no doubt the U.S. will remain the most significant military force on the planet for decades: its military spending accounts for 43 per cent of global military expenditure, against China's estimated 7.3 per cent and Russia's 3.6 per cent. The U.S. has 11 aircraft carriers to the rest of the world's eight — and its air power is a generation ahead of the competition. However, the cuts will mean U.S. resources will be more narrowly focused: targeting potential Chinese expansion in the Pacific, and using intelligence-led operations to contain terrorism-related threats. The days of grand expeditionary warfare in the Middle East are at an end.

India can't say it wasn't warned: for years now, the U.S. has been doing so. In his 2006 State of the Union address, President George W. Bush set America on a new course towards oil independence. "America is addicted to oil," he warned. He vowed to "make our dependence on Middle Eastern oil a thing of the past." Few paid attention, because past Presidents like Jimmy Carter had said much the same thing, to little avail — but the figures show it is now happening.

Ambitious but not Realistic

The latest supplement to the five-year Foreign Trade Policy (FTP) (2009-14) announced by the Commerce Minister on Tuesday certainly does not lack ambition. Exports which rose 21 per cent to cross \$300 billion at the end of last year are budgeted to touch \$500 billion by April 2014, admittedly an extremely tough task during a period of macroeconomic stress in India and abroad. The medium-term goal is for India's share in global exports to double by 2020. These two objectives are predicated on an export performance scaling new heights consistently and well into the medium term.

DEALING WITH PAKISTAN'S FEARS ON WATER

Q. Point out the Neutral Expert (NE) observation on Baglihar Case.

The first was that the 1960 Treaty does not bind the project planners to the 1960 technology, and

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that the state-of-the-art technology can be used; and the second was that the proper maintenance of a reservoir required periodical flushing to get rid of silt, and that while the dead storage could not be used for operational purposes, it could be used for the purpose of maintenance.

The first observation seems self-evident; no one can seriously argue that a dam in 2007 should have been built to the 1960 technology. The second, however, worries Pakistan because the possibility of periodical flushing of the reservoir might hold the potential of compromising the protection given to Pakistan against flooding.

Climate Change

Climate change and its impact on water are matters of vital concern, and the two countries must begin immediately to work together on these.

There is already a measure of cooperation between them in the international negotiations, but this must go beyond the limited issue of emission reductions.

This cannot be brought within the ambit of the Treaty but must be a separate exercise. In fact, this must involve other South Asian countries as well.

NATIONAL WATER POLICY 2012

The National Water Policy 2012, now published in draft for public comments, should ultimately take a holistic view of the issue. The draft text makes some references to the importance of water for people and Nature, but is disproportionately focussed on treating water as an economic good. Such an approach predicated on realising the costs that go into the supply of water can only distort access and prices in the long run, affecting less affluent citizens. To suggest, for instance, that the state should exit the service-provider role and become a regulator is only a step away from abandoning the equity objective. Private sector water services have clearly failed in many countries, including those in the global North, and local governments have taken over again. In the current year, for-profit private water companies in England are raising tariffs, while the publicly-owned service in Scotland is not. Just over a decade ago, water wars in Bolivia reversed privatisation moves. Evidently, private partnership imposes the burden of extra costs.

Few will argue that there is no case for reforms in the way water is managed as a resource in India. In urban and semi-urban areas, the lack of adequate public investments has weakened municipal systems. This has led to commodification and unsustainable extraction from aquifers for rising rates of profit. In this context, the proposal to separate groundwater rights from land title by amending the Indian Easements Act, 1882 merits serious consideration. Coming up with an alternative framework acceptable to all stakeholders, however, is a big challenge. Moreover, an assessment of the national water balance at the basin level is essential for amending the law. This the Centre should pursue, as the Planning Commission has suggested, during the 12th Plan. Such data can persuade the States to support comprehensive legislation to address inter-State riparian issues. Again, if there is any one factor that renders much of India's water unusable, it is industrial pollution. This issue calls for urgent action, and the policy can cover major ground if it lays greater emphasis on making the 'polluter pays' principle work. A clean-up can make a lot more of India's water bodies and groundwater available for use by people.

U.N. Declares Small Famine Over but Warns of Risks

U.N. said that 2.3 million people remain in a food crisis situation in Somalia and still need assistance.

That represents 31 per cent of the country's population. Across the Horn of Africa region the total is 9.5 million who need help.

The international body declared famine in Somalia last July after successive failed rains.

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Hundreds of thousands of Somalis fled to refugee camps in Kenya, Ethiopia and the Somali capital Mogadishu in search of food.

The famine was exacerbated by the Somali militant group al-Shabab, which has let few aid agencies into the area it controls in south-central Mogadishu.

THE RAILWAYS NEED FUNDS

Q. Point out the Recommendation of Kakodkar Committee on Railway Safety.

The Kakodkar high-level railway safety review committee, which submitted its recommendations to Railway Minister Dinesh Trivedi.

It may not have said anything new or different from the past but it has chosen to tell the Railways how to mobilise the funds for a long overdue, massive safety upgrade programme over the next five years.

What needs to be done for toning up railway safety is already well known: modern signalling, doing away with unmanned level crossings, replacing over-aged assets, and even in introducing a new generation of coaches. Again, there is nothing new in recommending such a major programme.

The Kakodkar committee is that it tells the Railways how to generate that level of funding. But is anybody listening? The committee has broken up the Rs.1 lakh crore programme into different components: Rs.20,000 crore for advanced signalling, Rs.50,000 crore for elimination of all level crossings, Rs.10,000 crore for new-design coaches, and Rs.20,000 crore for maintenance of safety-related infrastructure. The committee has suggested among other things, a safety cess on passengers to generate about Rs.5,000 crore every year, and doing away with the dividend payment of Rs.5,000 crore to the Government of India.

Still Sprouting after 32,000 Years

For the first time ever, scientists have been able to grow ancient flowering plants (*Silene stenophylla*) from immature fruit tissues buried 38 metres under the North-eastern Siberian ice deposits about 32,000 years ago. The tissues were recovered from the burrow of a ground squirrel.

The regenerated plants flowered and also produced seeds. These seeds were in turn able to grow into plants that were identical to the parent plants. If immature tissues and organs are known to be more regenerative than mature ones, this study published today (February 21) in the *Proceedings of the National Academy of Sciences* journal has proved it conclusively. They used tissue culture and micropropagation to make the immature placental tissue grow into healthy and sexually reproducing plants.

Another significant finding is that tissues remained viable and seeds germinated despite accumulating total gamma ray radiation of 0.07 kGy during the long period of burial.

The seeds and fruits were preserved at about -7°C and remained undisturbed in the burrow for the entire period of burial.

LEGITIMATE TAX PLANNING

Q. Give your opinion on FIIS in India & Double Taxation.

Despite such a clear pronouncement, two recent judgments of smaller Supreme Court benches have gone back to calling artificial tax avoidance devices “legitimate tax planning”.

Though the Income Tax Act obliges even non-residents to pay tax on incomes earned in India, many foreign institutional investors avoided paying taxes citing the Double Taxation Treaty with Mauritius. This treaty says a company will be taxed only in the country where it is domiciled.

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All these FIIs, though based in other countries and operating exclusively in India, claimed Mauritian domicile by virtue of being registered there under the Mauritius Offshore Business Activities Act (MOBA).

Companies registered under MOBA are not allowed to acquire property, invest or conduct business in Mauritius.

Most FIIs and most of the foreign investment in India, by 2000, came to be routed through Mauritius.

Since this happened to be in different countries in Europe or North America, the relevant Double Tax Avoidance treaty became the one between India and that country. Responding to the FIIs' distress calls, the then Finance Minister, Yashwant Sinha, got the Central Board of Direct Taxes to issue a circular stating that once a company had obtained a tax residence certificate from Mauritius, it would not be taxed in India.

However, a two judge bench in 2003 called this device an act of legitimate tax planning which could be promoted by the government to attract foreign investment, defied the Constitution bench judgment in *McDowell* and set aside the Delhi High Court judgment.

To IB or not to IB, that is the Question

Q. Why most of the Indian States are opposing proposed NCTC Act?

The CIA had a Counter-Terrorism Centre (CTC) for tasks of co-ordination and follow-up action on the intelligence collected by various agencies. The CTC had officers taken on deputation from different agencies. They worked under a CIA officer.

But his model of the Indian NCTC differs from the U.S. model in two respects. The U.S. NCTC is an independent institution not under the control of any of the existing agencies. In India, it is to be made a wing of the IB and will work under the DIB.

In the U.S., the NCTC is a legal institution set up under Congressional legislation after bipartisan consultations, but it does not have any legal powers to act on its own in matters such as arrest, detention, interrogation, searches etc.

The Indian NCTC has been set up by executive notification under the Unlawful Activities Prevention Act of 1967. This has obviated the need for fresh legislation and fresh political consultation at the Centre and with the States.

More seriously, the Indian NCTC is to be given powers of arrest and searches as part of its preventive operations.

Granting these powers to the IB through the NCTC mechanism could have two undesirable consequences. First, there may be allegations of misuse of the IB for harassing political opponents.

Secondly, the IB's role as a clandestine intelligence collection organisation may get affected. The IB will be preoccupied with defending its arrests before the courts and against allegations of human rights violations.

Today, the IB enjoys protection from the Right to Information Act. If it has these powers and adds policing to its functions, it may no longer be able to enjoy this protection.

The Home Minister had two options. If he felt the NCTC must have the powers of search and arrest, he could have made it an independent agency. Or if he felt that it must work under the IB, he could have made it a division of the agency without giving it these powers.

He should re-visit the proposed NCTC architecture in consultation with political parties and the States.

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Mr. Sharma's visit was the first by an Indian Commerce Minister for bilateral meetings.

Italy is Wrong on Sea Law

Q. Point out the United Nations Law on Sea. (Give your answer in Indian Context).

The shooting of Indian fishermen by Italian marines aboard the *Enrica Lexie* brings to the fore the need to understand the Law of the Sea as understood by seafaring nations in general and India in particular.

It is true that Article 97 of the United Nations Conference on the Law of the Sea (UNCLOS), as quoted by the Italian authorities, states that "No arrest or detention of the ship, even as a measure of investigation, shall be ordered by any authorities other than those of the flag state".

In this case the flag state is Italy. But the Article quoted is out of context, as it deals with 'Penal Jurisdiction in Matters of Collision or any other incident of Navigation'. Here neither collision nor navigational aspect is indicated.

On the contrary, in Annexure III of UNCLOS, under the heading of Convention of High Seas, 1958, Article 2 stipulates certain freedoms that are recognised by the general principles of international law, wherein freedom of fishing is a part.

To combat piracy, a modern threat to shipping, the International Maritime Organization (IMO) adopted a resolution in 1986 on the Suppression of Unlawful Acts against the Safety of Maritime Navigation, then known as the Rome Convention.

This was the immediate outcome of the *Achille Lauro* case, in which a passenger ship with Italian crew was hijacked by Palestinians in October 1985.

The U.N. then requested the IMO to address the problem. The action required to be taken was against persons committing unlawful acts against ships.

CAPITAL FORMATION

Q. Give an account about Public Capital Formation (emphasize on Agriculture)

The role of public capital formation in the future of the economy deserves far greater attention than it has received.

The direct impact of agricultural growth feeds through to the rest of the economy via supply and demand linkages. Then there are the roundabout effects that can be as powerful.

When food production grows at a slower rate than the demand for food, the relative price of food increases and inflation results.

Our diagnosis of the causes underlying the slowing of the Indian economy brings along with it the obvious solutions. When dealing with an agricultural shortfall, we need to first acknowledge that there are no short cuts, and that the project of making a dent is a long-term one. Public policy towards agriculture would have to address two issues. First, at 7.7 per cent of the total, gross capital formation appears far too low for a sector already groaning under inadequate infrastructure. And though we would be right to expect private investment to increase, public capital formation often acts as a catalyst to the former. This is so as the public sector alone provides the public goods essential for sustained growth.

However, even as we consider the bearing on growth of increasing public capital formation, it is important to face up to the finding of a rising incremental capital-output ratio in agriculture. Apparently waste thrives despite the rhetoric of the reforms. Evidently, it is one thing to build rural roads and irrigation networks but it is an altogether different matter to get them to work efficiently. The inescapable inference is that governance is central to growth. In fact, the future of economic growth in India is going to be determined by the quality of public intervention. For all

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the sound and the fury that it may be expected to generate, the forthcoming Union budget can do very little in this regard.

There is nevertheless a sense in which future budgets will continue to matter. We have already referred to the importance of sustained capital formation. It has been flagged for some time now that public capital formation by the Central government is being crowded out by producer and consumer subsidies. Among the former are the fertiliser subsidy and among the latter is food and fuel. Even before curbing the deficit, fiscal correction ought to take the form of maintaining or even increasing the food subsidy where it is merited while gradually eliminating all others. The funds thus freed up may be directed towards capital expenditure. The fact is that India has not yet completed its agricultural transformation, the hallmark of which is that food is made cheaper and expands the market for other goods. Note that producer subsidies in agriculture have not made any difference here. Actually, they may have held up the necessary transformation.

ZERO HUNGER

Q. Can India adopt Brazil's Zero Hunger Strategy to reduce Poverty?

Brazil's "Zero Hunger" strategy, for instance, has been successful in reducing poverty, inequality and hunger by developing profitable small farms and delivering cash to poor families through innovative payment systems. As the debate rages in India about how best to reduce poverty, curb growing inequality and boost agricultural production, Brazil's experience can help.

Brazil's social schemes are among the world's best targeted and are transparent. They have demonstrated how to streamline the delivery of services across all levels of government. By collaborating with Brazil, India can improve the reach and efficiency of its own, notoriously leaky schemes, including the Public Distribution System, whose losses are estimated to be around 44 per cent a year. There are of course vast differences between the two countries. India's poor are twice Brazil's entire population, for example. But that shouldn't stop India from borrowing some good ideas. It's not necessary for India to indiscriminately adopt cash transfers or other Brazilian schemes to benefit from knowledge sharing. India can leverage its private sector skills to scale up programmes. In turn, Brazil can benefit from India's innovators, who are finding novel ways to provide the country's low-income population greater access to products, services and employment that enhance living standards. India has produced the world's cheapest car, electronic tablets that cost \$50, large, successful retailers who link thousands of rural workers to modern urban markets, and family-sized apartments in cities that sell for \$4,200. In the affordable housing sector the long-term opportunities for partnerships with Indian entrepreneurs are particularly significant. Brazilian officials predict a deficit of 23 million homes for low-income families in the next 20 years.

FIGHTING AIDS

Q. Write a short notes on the Collaboration between India & Brazil to Fight against AIDS.

In health care, the benefits of an India-Brazil collaboration are already evident. Faced with common diseases and limited resources, India and Brazil have used each other, challenging the international intellectual property regime to combat HIV/AIDS.

In 2007, for example, Brazil broke a patent on an antiretroviral drug produced by Merck Pharmaceutical in the wake of rising drug costs.

Indian firms were the only producers of the generic version of the drug, and Hyderabad-based

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Aurobindo ultimately provided Brazil with the active ingredient to produce it. It was estimated that this would save Brazil \$237 million through 2012.

Brazil has taken advantage of their joint campaign for greater access to life-saving medicine and seen an extraordinary decline in HIV/AIDS.

Recognising such synergies, India and Brazil have invested \$1 million each in joint research on common diseases through the Indo-Brazil Science Council.

Chambers of commerce, including the Federation of Indian Chambers of Commerce and Industry (FICCI) and the India-Brazil Chamber of Commerce, can drive private sector collaboration, connecting Indian and Brazilian entrepreneurs.

REDISCOVERY OF NON-ALIGNMENT

Q. Give an account of India's Foreign policy in the Context of Non alignment.

A disappointing feature of India's foreign policy since Independence has been the almost complete absence of a meaningful debate about it. Early on, no one dared, within and without the government, to question the policy laid down by Jawaharlal Nehru. This continued right up to the present times, when the nuclear deal with the United States generated a good deal of discussion, much of it though on ideological grounds. Equally unfortunate is the importance attached to the desirability of consensus in foreign policy. Why should consensus, per se, be essential to the conduct of foreign policy?

Eight eminent men — alas, not a single woman — have rendered a very useful and much-needed service by producing “Nonalignment 2.0: A Foreign and Strategic Policy for India in the Twenty First Century.” The document gives us a comprehensive overview of the challenges facing and opportunities available to India in the years ahead. The analyses of the issues involved are sound and give a good basis on which to take the debate forward.

Why did they have to choose “non-alignment” as the title for their document? In this day and age, to talk of non-alignment is completely un-understandable. The authors explain that they use the term to indicate the “strategic autonomy” of decision-making which was supposed to be the essence of previous non-alignment. This is true only to an extent. The word itself was conceived in the context of the state of the world in the Cold War period and does not necessarily have connotations of success in foreign policy. It is not as if “Nonalignment 1.0” was a golden era for Indian diplomacy. Some of us are unlikely to forget that we did not receive support from a single fellow non-aligned country when China attacked us in 1962. Nehru himself might not have approved the use of this term if he had lived long enough to see the distortions that crept up in the practice of non-alignment. Today, “Non-alignment” sounds backward looking, not forward looking, as is the intention of the authors.

Nor was practising non-alignment a demonstration of courage on the part of most of its practitioners. The only country where it called for boldness was Yugoslavia which was in the direct line of confrontation between competing and heavily armed antagonists. We were at a reasonably safe distance from these lines of confrontation and it is debatable whether our non-alignment policy significantly helped in keeping the levels of tension in the world down. It is also not clear if Nehru wanted to build India's national power as “the foundation for creating a more just and equitable world order,” as suggested in paragraph nine.

Equally difficult to comprehend is the almost obsessive use of the adjective “strategic” throughout the document. Why should the autonomy of decision-making be “strategic”? I doubt if Nehru ever described our policy as the strategic policy of non-alignment. How does “strategic” add value to the unexceptionable concept of independence or autonomy of judgment? While deciding on a vote in the

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Security Council, the government of the day always takes into account all the relevant factors — the immediate impact on our interests, relations with other countries, possible domestic fallout, etc; it is not consciously taking a “strategic” decision. Even communications between the government and people have to be “strategic” — paragraph 260.

It is as if adding the adjective at once lends profundity to whatever is being advocated. The document is most useful in that it gives us, in about 60 pages, a good picture of all the elements which go into the doctrine of security, strategic or otherwise. It is not usual for foreign policy mandarins to think of internal security issues while pondering over their agenda. This has been necessitated by the increasingly volatile internal security scene of today which was not the case a few decades ago. In fact, the group could have done well by including an expert on internal security in its work.

The section on China is excellent and contains sound analysis. The general thrust is to take a cautious attitude so as not to unnecessarily provoke China. However, paragraph 33 calls for a reassessment and readjustment of our Tibet policy. But, how realistic is it to persuade China to reconcile with the Dalai Lama when the presence of His Holiness in India is itself the cause of much of China’s unhappiness with us? Is there a mild hint of using the Tibet card? But it is immediately rejected by pointing out the negative reaction of the People’s Liberation Army (PLA). And, is there some confusion? Does the election of a prime minister by the Tibetan diaspora indicate replacement of the traditional practice of selecting the Dalai Lama? Paragraph

35 rightly expresses concern at the asymmetry in bilateral trade with China, but it has the impractical suggestion that China’s interest in our infrastructure projects could be used as a leverage to secure political concessions in areas of interest to us. There is also the factor of Indian corporate houses acting as a powerful lobby against permitting the government from being firm with China on matters of vital importance to us.

This particular section ends with the advice to strike the right balance between competing concepts such as cooperation and competition, economic and political interests. It is ironic that our single most important challenge in the years ahead should be with a country with which we have a strategic partnership agreement. The paper rightly reminds us of the imperative need to work single-mindedly for the economic integration of the South Asian region. The broad conclusion is that India shall have to offer many more unilateral concessions to reassure our neighbours of our good intentions and to make them realise that it is in their interest to ride piggyback on the strength of India’s economy. This has been tried in the past in the famous Gujral Doctrine. Let us hope that our neighbours will at long last see the wisdom in this advice. In general, however, experience shows that it is futile for a big country to expect to be loved by its smaller neighbours; the best that it should expect is to be respected by them.

On Pakistan, paragraph 56 has the eminently sensible assessment that any improvement in India-Pakistan relations will be incremental and not a one-sweep decisive historical breakthrough. The broad thrust of the authors is that India must continue to take the soft approach. Paragraph

59 has the implied conclusion that the presence of nuclear weapons in both states has negated our advantage in the conventional field. Paragraph 61 advises that we must “ensure” that no serious terrorist attacks — defined as those with significant domestic impact — are launched on Indian territory by groups based in Pakistan. How does one “ensure” this? The authors’ advice to maintain channels of communication even in the event of a major provocation is not likely to command consensus in the country, though in practice there might not be any other option, since not talking is, at best, a temporary response. Maintaining lines of communication is essential for us to convey unambiguously our “redlines”; it would have been useful if we had had an indication of what these redlines could be. There is the bold suggestion that we should directly engage the Pakistan army, something this writer advocated in an article in the *Tribune* more than a year ago. On Afghanistan, the advice, by implication, is that we should reactivate the Northern Alliance in case Pakistan attempts to subvert the

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legitimate government in Kabul after the departure of the Americans.

The paper is strongly supportive of nuclear energy as an indispensable element of our search for energy security. It suggests that the percentage of nuclear energy will go up from three per cent at present to 10 per cent by 2030, though some experts might not agree with this optimistic scenario. The need to make the “strategic” shift from the traditional sources to new and renewable has been mentioned; perhaps a reference to solar might not have been relevant. Similarly, there has been no mention of Fukushima, although there is in fact a strategic need to communicate with the people about the safety aspects of nuclear energy.

It is not clear to this writer why the publication of a “nuclear doctrine” is such an essential or good thing for us and why Pakistan not having one is “far from reassuring.” In that case, why should we have been so reassuring to Pakistan? Paragraph 235 frankly admits that the possession of nuclear weapons has emboldened Pakistan to pursue sub-conventional options against India and to place restraints against India’s strategic response. The eminent authors have more than once cautioned against our depending on others for solving our problems either with Pakistan or any other. They are absolutely right. They also seem to be in favour of India becoming a permanent member of the Security Council even without a veto, a sentiment with which this writer is in agreement.

All in all, the authors have performed a most useful task by producing a paper which is at once lucid, readable and deals comprehensively with foreign policy challenges. It deserves wide debate among our parliamentarians, the media as well as think-tankers.

Q. Comment in Rajiv Gandhi Equity Savings Scheme.

The Rajiv Gandhi Equity Savings Scheme seeks to encourage the flow of savings in financial instruments and improve the depth of the capital market. The scheme, which has a lock-in period of three years, would allow for income tax deduction of 50 per cent to new retail investors who invest up to Rs. 50,000 directly in equities and whose annual income is less than Rs.10 lakh. While more details on the scheme are awaited, it is clear that the primary motivation for a prospective investor would be the tax rebate it confers. For many in the salaried class — the target group for the new scheme — tax-driven investments such as in public provident funds, national savings schemes and so on are the only form of savings. It is highly questionable whether they should be lured to invest in inherently risky equity investments with attractive tax concessions.

It is hoped that the definition of equity investment will be expanded to include mutual funds which, after all, have been the officially recommended investment vehicle for first time investors. Along with usual safeguards, investor education on a continuous basis will be absolutely necessary.

Einstein Stands Tall

That neutrinos travel 60 nanoseconds faster than light must be an “artefact of measurement,” after all. The results announced last week by the ICARUS team means that Einstein’s 1905 theory of Special Relativity that nothing travels faster than light — the cornerstone of modern physics — is still valid. The reconfirmation of light’s eminent place comes in the wake of the September 23, 2011 announcement by the Oscillation Project with Emulsion-tRacking Apparatus (OPERA) team that the subatomic particles travelled faster than light. Both the teams used the same extremely short duration neutrino pulses to reconfirm the time taken for the neutrinos fired at CERN to reach the Gran Sasso National Laboratory in Italy located 730 km away. The ICARUS team led by Nobel Laureate Carlo Rubbia analysed the speed of seven such pulses using a different technique. While OPERA continued to find the neutrinos travelling faster than light by 60 nanoseconds (with an uncertainty of 10 nanoseconds), ICARUS found that the speed of subatomic particles was just four nanoseconds faster than light, well within the “experimental margin of error.” “These [the neutrinos] arrived in a time consistent with the speed of light,” notes the CERN press release.

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Researchers have been poking holes ever since OPERA first published its results. Nobel Laureate Sheldon Glashow's immediate criticism that the superluminal neutrinos did not exhibit any effect similar to Cerenkov radiation that would essentially reduce the particle's energy during its journey was strengthened by the ICARUS group's observation last November. The team did not find any evidence that the neutrinos travelling faster than light had lost energy during their 730 km journey. Though this observation had an element of implausibility, the remote possibility of some unknown mechanism playing a role could not be ruled out. But Rubbio's latest results settle the issue. Fresh measurements by both the teams are to be made when the experiment is repeated in May. But there is only a slim chance of OPERA proving to be right as it had recently disclosed two possible faults that could have led to an error in the speed calculation. While many would criticise OPERA's researchers for their haste in announcing the extraordinary results before checking for all possible errors, the way the team conducted itself was perfectly in line with the methods of science. The group had checked the accuracy of data of more than 15,000 neutrinos for about six months before going public. It never claimed to have proved that neutrinos travel faster than light. In fact, it wanted a reconfirmation of the results by others. Publishing its data was one of the best ways of achieving this end.

Drug-resistant Form

India's Revised National Tuberculosis Control Programme (RNTCP) is widely appreciated for having made a big contribution by expanding basic diagnostic and treatment services to cover 100 per cent of the Indian population. A laudable but insufficient achievement in a country of 1.2 billion people. Why? Because despite these achievements, India has over two million new TB cases every year and TB kills nearly 1,000 people every day.

The emergence of drug resistant TB has made things worse. Three months ago, a team from the Hinduja hospital in Mumbai reported a few cases of "totally drug-resistant tuberculosis" — suggesting that this form of TB was incurable because of resistance to all the TB drugs tested. This report from Mumbai generated a firestorm of media and political response. How effectively can India handle drug-resistant tuberculosis? Not well, is the short answer. In 2010, only five per cent of patients who needed drug susceptibility testing actually got screened and only two per cent of the estimated 99,000 patients with multidrug resistant tuberculosis actually got appropriate drug treatment via the RNTCP.

The RNTCP has been consistently under-funded for many years, even though tuberculosis control is a very cost-effective strategy for improving the health status of India's population, with exceptional return on investment from a societal perspective. Indeed, India's health-care spending continues to remain one of the lowest in the world. What's more important to consider are the human and economic costs of not controlling TB, particularly drug resistant TB.

What about India's large private sector, which manages over half of all tuberculosis cases? Unfortunately, tuberculosis management practices in the unregulated private sector vary widely, often deviating from established standards. For example, inaccurate, blood-based, antibody tests are widely used, along with irrational drug regimens. Indeed, since antibiotics are easily available over-the-counter, antibiotic-resistance is a major threat for control of all infectious diseases. Also, there is virtually no reporting or notification of confirmed TB cases to the RNTCP by the Indian private sector. Thanks to reports of totally drug-resistant tuberculosis, efforts are now underway to make TB reporting mandatory.

MOVING ON THE IRAN OPPORTUNITY

Q. Highlight the Outcomes of Nuclear talks in Istanbul and point out India's part in

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it.

The outcome of nuclear talks in Istanbul on April 14 justifies a diplomatic cheer. For the first time in years the parties — the United States, the United Kingdom, France, Germany, the European Union, Russia, China and Iran — set no preconditions for engaging. The atmosphere was cordial.

The parties agreed to embark on a sustained step-by-step process of reciprocal concessions to arrive at a negotiated settlement. Crucially, the parties recognised that the Nuclear No-Proliferation Treaty (NPT) offers a basis for a peaceful outcome — a principle that has eluded the West ever since it set out to deny Iran a uranium enrichment capability in the belief that this would be used to produce nuclear weapons.

India could use its influence in Western capitals to urge patience and the turning of deaf ears to special pleading from Israel and Saudi Arabia.

It could stress the unacceptability of military action unless authorised by the Security Council, both on legal grounds and because of its probable consequences for Indian living standards.

It could draw on 2,500 years of cultural affinity to offer advice on Iranian sensibilities: the dos and don'ts that matter in a negotiation.

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