

INDIA'S KEY HAZARDS/ DISASTERS

The Intergovernmental Panel on Climate Change (**IPCC**) came to the conclusion that, worldwide the **frequency and magnitude** of all types of natural disasters are on the rise. Discernible changes in weather with a **general increase in temperature** (or a decrease in the number of cold days) have been observed in nearly all the land masses. There is also an increase in the **frequency of heavy precipitation** events. In some regions of the country, the **frequency and intensity of droughts** have increased over the past few decades. Projections for India show that the number of „hot“ and „very hot“ days will continue to rise.

It is also likely that the intensity and frequency of extreme precipitation events will increase over many areas, resulting in **greater number of floods and landslides**. Mid-continental areas would generally become drier, thus increasing the risk of **summer droughts and forest fires**. Increase in **tropical cyclone peak wind intensities** and mean and peak precipitation intensities are expected to be on the rise. Such increasing trends in natural disasters will inevitably create disaster situations. Should these dire prognostications come to pass, disaster management will become a very critical issue in the coming years.

India is **very vulnerable** to natural hazards because of its unique geo-climatic conditions. Disasters occur in India with **grim regularity** causing enormous loss of life and property. Almost **85% of the country** is vulnerable to single or multiple disasters and about 57% of its area lies in high seismic zones. Approximately **40 million hectares** of the country's land area is prone to flood, about 8% of the total land mass is vulnerable to cyclone and 68% of the area is susceptible to drought. Of the 35 states and UTs, 27 are prone to one or more of these 'events'. To this, it must be added that some areas are also vulnerable to **industrial, chemical and biological disasters**.

The **magnitude of loss of human lives and livelihood** in our country due to such disasters is excessive by any modern standard. There is no reason why more than 13,000 deaths, and more than 2 lakh houses destroyed should have been the result of an earthquake measuring 6.9 on the Richter scale in **Gujarat** whereas earthquakes of similar measurements in USA or Japan have had relatively little impact. Tragedies like the **Bhopal gas leakage** (Methyl Iso-Cynate) and regular outbreaks of floods and droughts in different parts of the country every year indicate that much more needs to be done to achieve holistic disaster management in the country.

In terms of **erosion of resources**, disasters have proved **frightfully expensive**. According to a recent study by the **World Bank**, **2.25% of the GDP** and more than 12% of the revenue of the country were lost due to natural disasters during 1996-2000, when the country was hard put to mobilize equivalent resources for health care. **11th Finance Commission** provided an amount of more than Rs. 11000 crores for the **Calamity Relief Fund** (CRF) for the period 2000-2005. Besides, a further amount of Rs. 8000 crores was spent under the National Calamity Contingency Fund (NCCF).

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12th Finance Commission further enhanced the allocations of CRF to Rs. 21000 crores for the period 2005-2010. Apart from assistance from the CRF and the NCCF, **additional resources** had to be mobilized from multilateral financial institutions following severe disasters like the Gujarat earthquake (Rs. 8000 crores) and the Tsunami (Rs. 10000 crores) for long term rehabilitation and reconstruction. This has serious implications for **macro-economic management** and development planning.

Arguably, the bulk of such expenditure could have been **avoided with better planning**, and measures for prevention and mitigation. Several **cross-country studies** have shown that investment in disaster prevention and mitigation is **highly cost effective**: for example, every dollar spent on mitigation saves three to five dollars on relief and rehabilitation. Unfortunately, **long-term benefits** of disaster prevention and mitigation have not been duly factored into our planning and administrative systems. Although the **broad principles of disaster management** are applicable to different types of disasters, each disaster category has its peculiar features, which need to be factored in disaster management efforts. A **brief description** of some major disasters, which India faces, is given here:

EARTHQUAKES

The **Himalayas**- the youngest among the mountain ranges- are still evolving and adjusting to **tectonic movements**; existence of **two major fault lines** located on its west and east, have resulted in **very severe earthquakes** in several parts of the Himalayan and surrounding regions. This makes the entire region covering **14 states** (located in western and central Himalayas, northeast, and parts of Indo-Gangetic basin) highly prone to earthquakes. The hilly regions are also prone to **earthquake-induced landslides**. The other seismically active regions of the country include the **Gulf of Khambhat** and **Rann of Kutch** in Western Gujarat, parts of peninsular India, the islands of Lakshadweep and Andaman and Nicobar Islands.

Based on seismic data of the past 100 years the **distribution of earthquakes of 5.0 or more** on the Richter scale and their recurrence (return period) has been worked out in Table below:

Region-wise Earthquakes (M>5.012) 1897-2006						
Sr. No.	Seismic region	No. of earthquakes of magnitude				Return period
		5-5.9	6-6.9	7-7.9	8.0+	
1	Kashmir & Western Himalayas	25	7	2	1	2.5-3 yrs
2	Central Himalayas	68	28	4	1	1 yr
3	North East India	200	130	15	4	<4 months
4	Indo-Gangetic Basin	14	6	-	-	5 yrs
5	Cambay and Rann of Kutch	6	5	2	1	7 yrs
6	Peninsular India	32	10	-	-	2.5-3 yrs
7	Andaman & Nicobar Islands	80	68	1	1	<8 months

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Earthquakes can **neither be prevented nor predicted** in terms of their magnitude, or place and time of occurrence. Therefore, the most effective measures of **risk reduction** are pre-disaster mitigation, preparedness and preventive measures for reducing the vulnerability of the built environment combined with expeditious and effective rescue and relief actions immediately after the occurrence of the earthquake.

CYCLONES

More than **8000 km of coastline** in the east and the west face the hazards of tropical cyclones, and associated storm surges and heavy rainfall, before and after the monsoon. **Post-monsoon cyclones** are usually more intense both in numbers and intensity. It has been estimated that around **60% of the cyclonic storms** that develop in the Bay of Bengal approach or cross the east coast in October and November. Only 25% of the storms that develop over the Arabian Sea hit the west coast.

The **'super cyclone'** that hit the coastal areas of Orissa in October 1999 had wind speeds of 270-300 km per hour accompanied by **torrential rains** for the next three days. Sea waves that hit the coast were 7 m high. The super cyclone caused extensive damage **killing about 10,000 people** & lakhs of livestock population. Over 2 mn houses were damaged, and economy, infrastructure & environment were devastated.

An effective cyclone disaster **prevention and mitigation plan** requires: (i) efficient cyclone **forecast** - and warning services; (ii) rapid **dissemination** of warnings to the government agencies, particularly marine interests like ports, fisheries and shipping and to the general public and (iii) construction of cyclone **shelters** in vulnerable areas, a ready machinery for evacuation of people to safer areas and community preparedness at all levels to meet the exigencies.

Cyclone shelters are quite successful across the world. In **densely populated coastal areas**, where large scale evacuations are not always feasible, **public buildings** can be used as cyclone shelters. These buildings can be so designed, so as to provide a blank façade with a minimum number of apertures in the direction of the prevailing winds. The shorter side of the building should face the storm, so as to impart least wind resistance. Earth berms and green belts can be used in front of these buildings to reduce the impact of the storm.

TSUNAMIS

Tsunamis are large waves generated by **sudden movements of the ocean floor** that displace a large volume of water. Although usually associated with **earthquakes**, tsunamis can also be triggered by other phenomena like submarine or terrestrial landslides, volcanic eruptions, explosions or even bolides (e.g., asteroid, meteor, and comet) impacts. Tsunamis have the **potential to strip beaches**, uproot plantations, and inundate large inland tracts and extensively damage life and property in coastal areas. The **Indian coastal belt had not recorded many tsunamis** in the past although the earthquakes of 1881 and 1941 over the Bay of Bengal had caused some damage in the Andamans region. The earthquakes of 1819 and 1845 near the Rann of Kutch also created rapid movements of water in the Arabian Sea. The 1945 Makran earthquake generated a tsunami of 12 to 15 meters height causing some damage in the Gulf of Cambay and Mumbai.

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The phenomenon of tsunami that usually occurs near **seismically active spots in the Pacific Ocean** was uncommon in India till it hit the east and west coast in **December 2004**. The waves that struck our mainland were 3-10 m high and penetrated 300 metres to 3000 metres inland causing severe damage to life and property in the coastal areas of **Andhra Pradesh, Tamil Nadu, Pondicherry**, Kerala and Andaman and Nicobar Islands, devastating and crippling the coastal economy as never before. The confirmed death toll in India was over 12,000. 75% of the fatalities were women and children. More than **1000 villages** were affected, and over 1, 50,000 houses were destroyed and 40,000 hectares of ripe agricultural land was damaged. The total estimated value of damages is over Rs. 11,000 crores (Approx US \$2.56 billion).

FLOODS

Floods occur regularly in India affecting about **10% of area**. The term flood is generally used when the water-flows in rivers, streams and other water bodies cannot be contained within natural or artificial banks. According to the estimates of the **National Flood Commission** (1980), States of **Assam and Bihar** are the worst affected by floods followed by U.P. and West Bengal. However, during monsoon months, **all states are prone to floods**, including even Rajasthan.

The **severity of flooding** at any location is a function of factors such as intensity and extent of rainfall and antecedent conditions of **catchment area**, physical characteristics of the river, topography etc. In many cases, the natural process of flooding is aggravated by **man-made hindrances** to free out-flow/ absorption of floodwater both in agricultural areas and particularly in **urban areas** with unplanned or unauthorized construction activities; sudden large releases from **upstream reservoirs**, which often is more than the carrying capacity of the basin results in massive destruction of river embankments and downstream flooding. Increasing pace of urbanization, **population growth and development** have all led to pressures on the flood plains magnifying the damage caused by floods.

The incidence of floods in recent times in **urban areas such as Mumbai, Surat, Vadodara** and other places is symptomatic of this trend and is the direct result of unauthorized construction activities in flood plains and river beds, poor urban planning and implementation, lack of investment in **storm water drainage** and sewerage for several decades as well as inadequate planning and response mechanisms. Most recently, the **Uttarakhand floods** in upper-streams including Kedarnath, Badrinath, Guptkashi etc. caused havoc claiming thousands of lives, mostly pilgrims. These were caused by a number of factors like **cloud burst and consequent landslides**.

Freak weather conditions, possibly the result of **global warming**, have been reflected in incessant rains in **August 2006**, resulting in floods in the deserts of **Rajasthan**, leading to loss of about 300 lives, immense damage to housing and infrastructure and widespread devastation in an area where people are not used to floods and have few mechanisms to cope with the disaster. The country has to shift towards **efficient management** of flood plains, disaster preparedness, response planning, flood forecasting and warning.

Flood Control and Management

- There should be a **master plan** for flood control and management for each flood prone basin.
- Adequate **flood-cushion** should be provided in water storage projects, wherever feasible, to facilitate better flood management. In highly flood prone areas, flood control should be given **overriding consideration** in reservoir regulation policy even at the cost of sacrificing some irrigation or power benefits.
- While **physical flood protection works** like embankments and dykes will continue to be necessary, increased emphasis should be laid on non-structural measures such as **flood forecasting and warning**, flood plain zoning and flood proofing for the minimisation of losses and to reduce the recurring expenditure on flood relief.
- There should be **strict regulation of settlements** and economic activity in the flood plain zones along with flood proofing, to minimise the loss of life and property on account of floods.
- The **flood forecasting activities** should be modernised, value added and extended to other uncovered areas.
- **Inflow forecasting to reservoirs** should be instituted for their effective regulation.

LANDSLIDES AND AVALANCHES

Landslides are **mass movements of rocks, debris or earth**, down mountain slopes or riverbanks. Such movements may occur gradually, but sudden sliding can also occur without warning. They often take place in conjunction with **earthquakes, floods and volcanic eruptions**. At times, **prolonged rainfall** causing heavy landslides block the flow of rivers for quite some time, which on bursting can cause havoc to human settlements downstream.

The **hilly terrains** of India, particularly in the Himalayas and the Western Ghats, are most vulnerable to landslides. The **Himalayan mountain belt** comprises of **tectonically unstable** younger geological formations and often the slides are huge, and in most cases, the overburden along with the underlying lithology is displaced during sliding, such as in the Malpa landslide of 1998 when an entire village was buried by a huge landslide. In contrast, the **Western Ghats and Nilgiri Hills** are geologically stable but have uplifted plateau margins influenced by neo-tectonic activity and the slides are usually confined to the **over burden** without affecting the bedrock beneath. The slides are generally in the nature of debris flows occurring mainly during monsoons, but the effects are felt more acutely due to **higher density of population** in the region.

Measures to control landslides include **micro-zonation** so as to regulate settlements in hazard prone areas, **non-interference** with the natural water channels, construction of **retaining walls** against steep slopes and strengthening of weak areas with grouting. In India, landslide studies are conducted by a number of institutions, research and academic. However, there is a need for **better coordination** among these institutions and also the user agencies.

The **sliding down of snow cover** on mountain slope causes **avalanches**. Avalanches may occur due to a **combination of factors** such as the slope of the mountain, depth of snow cover, wind velocity and atmospheric temperature, vibrations caused by gunfire and strength of resisting forces like vegetation cover of trees and

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shrubs. When the **balance between the gravitational force** of snow cover and the resisting force of the slope and the anchoring effect of shrubs are lost, avalanches are caused. Avalanches create various **disaster situations** for the local administration; road traffic may be blocked and communication links to vital areas may be disrupted and winter sports may be disturbed stranding tourists in places with scant facilities. **Small rivers** may be blocked creating danger of downstream flooding. Avalanches may sometimes hit or bury human settlements down the slopes, as in the Kashmir avalanche of 2005, which killed 300 persons, mostly living in temporary winter hutments.

Mitigation Measures for Avalanches

These can be classified into structural and non-structural measures:

1. Structural measures:

- a. Planting (Avalanche Prevention Forest)
- b. Stepped Terraces
- c. Avalanche Control Piles
- d. Avalanche Control Fence
- e. Suspended Fences
- f. Snow Cornice Control Structures
- g. Protection structures such as stopping, deflecting and retarding structures.

2. **Non-structural measures**- removing snow deposits on slopes by blasting, predicting avalanches and evacuating people from vulnerable areas.

INDUSTRIAL DISASTERS

Among the **man-made disasters**, probably the most devastating (after wars) are industrial disasters. These disasters may be caused by chemical, mechanical, civil, electrical or other process failures in an industrial plant due to **accident or negligence**, which may cause widespread damage within and/or outside the plant. The worst example globally was the **Methyl Iso-cyanate gas** leak in 1984 from the Union Carbide Factory in Bhopal (**Bhopal Gas Tragedy**) which has so far claimed more than **20,000 lives** and injured several lakh persons besides stunting the growth of a generation born from the affected population. This disaster triggered a completely new legal regime and practices for preventing such disasters.

In the pre-Bhopal Gas Tragedy era, **industrial safety** was governed by legislations like the Factories Act, 1948 and the Explosives Act, 1884. These laws proved to be inadequate to provide safety to workers as well as to the people living in the surrounding areas. After the Bhopal Gas Tragedy, a new chapter was inserted in the **Factories Act, 1948** dealing with hazardous processes. The **Environment Protection Act, 1986** was enacted. More importantly, **several Rules were promulgated** under the Act. Important among them are:

1. The Environment (Protection) Rules, 1986.
2. Hazardous Waste (Management and Handling) Rules, 1989.
3. The Manufacture, Storage and Import of Hazardous Substances Rules, 1989/ 2000.
4. The Public Liability Insurance Act and Rules and Amendment, 1992.
5. The Chemical Accidents (Emergency Planning, Preparedness, and Response) Rules, 1996.

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6. The Environment (Siting for Industrial Projects) Rules, 1999.
7. The Municipal Solid Wastes (Management and Handling) Rules, 2000.
8. The Ozone Depleting Substances (Regulation and Control) Rules, 2000.

Over 1600 **major industrial hazard** units are located in 245 districts in 19 States/ UTs. **Stringent environmental protection laws** have prevented major industrial disasters after Bhopal, but minor disasters do take place on and off site and also during transportation of hazardous materials, which claim a number of lives each year besides creating environmental problems. Industrial disasters are a major concern today because of increase in the **pace of industrialization**. With rapid industrialization, the threat of industrial disasters has increased. However, in spite of the existence of a large number of laws, their **enforcement** has left much to be desired.

EPIDEMICS

In India, the **major sources** of epidemics can be broadly categorized as follows: (a) **Water-borne** diseases like cholera (and forms of gastroenteritis), typhoid, Hepatitis A, Hepatitis B etc - major epidemics of such diseases have been recorded in the past and continue to occur; (b) **Vector-borne** (often mosquito-borne) epidemics like dengue fever, chikungunya fever, Japanese encephalitis, malaria, kala-azar etc, which usually occur in certain regions of the country; (c) **Air-borne diseases** like influenza and measles that can also be transmitted through fomites (used clothes etc.); and (d) **Person to person transmission** of diseases e.g. AIDS and other venereal diseases.

In addition to the above, there are certain types of emerging **infectious diseases** such as epidemic of Severe Acute Respiratory Syndrome (**SARS**), which had occurred in China or the recent outbreak of **avian flu** in poultry in certain parts of the country and which has the potential of being transmitted to human beings. Epidemics due to the **Dengue virus** have occurred in many metropolitan cities of India and outbreak of various other types of viral diseases is also a recurring phenomena.

Epidemics often take place due to **poor sanitary conditions** leading to **contamination** of food and water or due to inadequate disposal of human or animal carcasses in post-disaster situations. They become real dangers during floods and earthquakes. Sometimes, **poor solid waste management** may create epidemics like plague. Incidence of **plague** is quite uncommon now but it can still occur claiming many human lives and disrupting normal life as it did in Surat in 1994.

Avian Influenza: The continuing outbreaks of highly pathogenic avian influenza (HPAI) in some parts of the country have spelt disaster for the **poultry industry** and have raised serious public health concerns. Over a million domestic poultry have either died or been destroyed. **Economic losses** to the poultry sector are likely to have serious implications, but despite control measures the disease continues to recur, causing further economic losses and threatening the livelihood of millions of poor livestock farmers, jeopardizing **small-holder entrepreneurship** & commercial poultry production & seriously impeding regional and international trade & market opportunities.

The HPAI virus has the potential of being **transmissible among human beings**, thereby causing threat to millions of lives. It has been estimated by the WHO that millions of people could die of HPAI, should a human pandemic occur. Considering

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the potential for this scenario, it is imperative to have a **synergy between global and national strategy** to help stem the broad negative impact of the disease. The **long-term vision** of the strategy is to minimize the global threat and risk of HPAI in domestic poultry and humans, through progressive control and eradication of HPAI, particularly that caused by **H5N1 virus**, from terrestrial domestic poultry in the country. Achieving this goal will diminish the global threat of a human pandemic, stabilize poultry production, enhance a robust regional and international trade in poultry and poultry products, increase human and food safety, and improve the livelihoods of the rural poor.

NUCLEAR HAZARDS

With increased emphasis on power generation through nuclear technology, the threat of nuclear hazards has also increased. The **Department of Atomic Energy** (DAE) has been identified as the nodal agency in the country in respect of **man-made radiological emergencies** in the public domain. Nuclear facilities in India have adopted internationally accepted guidelines for ensuring safety to the public and environment. A disaster management system is also in place to take care of any nuclear hazard. In addition to the other types of **emergency response plans** in place within the facility to handle local emergencies, response plans have also been drawn up for handling such emergencies in the public domain, which are called as **-off site Emergencies**. These plans - drawn up separately in detail for each site - which are under the jurisdiction of the local district administration, cover an area of about 16 km radius around the plant or the off-site **Emergency Planning Zone**.

DESERT LOCUSTS

Desert Locusts, **Schistocerca gregaria**, are undoubtedly the **most dangerous** of locust species. Under favourable environmental conditions, a few solitary individuals can dramatically multiply, form large swarms able to migrate great distances and **threaten agriculture** over a large part of Africa, the Middle East and Southwest Asia including India. In the last century, there have been 6 plagues of Desert Locusts, one of which lasted almost 13 years. Initial Desert Locust control efforts were **largely curative** but the trend in the 20th century had been toward **preventing** such plagues from occurring. Affected countries have assumed ever more responsibility for **monitoring locust breeding areas** and treating infestations before they increase in size and number. In fact, our knowledge of the Desert Locust has evolved along with the ability to manage locust plagues.

International cooperation lies at the core of an **effective strategy** for locust control. As a result, locust management decisions are based on **information gathered** by and exchanged with national agencies and international organizations that have developed programs to regularly monitor locusts and the weather in the desert before they reach agricultural areas. This strategy has proved to be quite effective because countries have come to accept that international cooperation is critical in the fight against the Desert Locust.

Nevertheless, plagues are not always prevented and often **substantial control operations** are required to reduce locust numbers and try to bring a halt to an upsurge or plague. It has become apparent that such operations could be strategically applied at certain times or in specific areas. One example is the delaying of control

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operations until locusts become **concentrated into a relatively small area**, which would allow more locusts to be treated using a lower quantity of pesticides applied over a smaller area. The challenge in coming years will be to evolve Desert Locust management strategies in a manner that ensures food security while minimizing any detrimental effects on the environment.

SLOW ONSET DISASTERS

Disasters can also be classified as „**slow onset**“ disasters and „**rapid onset**“ disasters. Earthquakes, cyclones, floods, tsunamis would fall under the category of rapid onset disasters; climate change (global warming), desertification, soil degradation, and droughts, would fall under the category of slow onset disasters. Slow onset disasters are also termed as **‘Creeping Emergencies’**. It may be added that with **‘prevention’** forming an integral part of the **‘management cycle’**, slow onset disasters like global warming, and desertification must find adequate **reflection in disaster preparedness**- these phenomena gradually erode the **‘health’** of ecosystems and expose societies to the vagaries of nature. Unlike the rapid onset disasters, their impact is not felt immediately; however societies lose their ability to derive sustenance from their surroundings, over a period of time. **Development policies** and the manner in which they are implemented are some of the main reasons for the slow onset disasters.

Climatic Change

The World’s climate has barely **changed since the industrial revolution**. The temperature was stable in the 19th century, **rose very slightly** during the first half of the 20th century, fell back in the 1950s-70s, then started rising again. Over the last 100 years, it has gone up by about **0.6 Degrees Celsius**. Previous changes in the world’s climate have been set off by variations either in the angle of Earth’s rotation or in its distance from the Sun. This time there is another factor involved: **man-made “green house” gases**.

Climate change is defined as **‘a statistically significant variation** in either the mean state of the climate or in its variability, persisting for an extended period (typically decades or even longer). Climate change may be due to **natural internal processes** or **external forces**, or to persistent **anthropogenic changes** in the composition of the atmosphere or in land use.’ Global warming caused due to the **–Greenhouse effect** is one of the major reasons for climate change. Global warming leads to melting of glaciers, rise in sea level and threatens low lying coastal areas (like the Sunderbans and entire nations such as Bangladesh and Maldives). **Unexpected and unseasonal rainfall and drought** in recent times is attributed to global warming. Combating global warming requires urgent and concerted efforts by the international community.

Droughts

Droughts refer to a **serious shortfall in availability of water**, mainly, but not exclusively, due to deficiency of rains, affecting agriculture, drinking water supply and industry. Droughts occur in several parts of the world and can bring **untold misery to populations** particularly those depending on agriculture and living on generally degraded land. The **causative factors** are both natural and man-made. The

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impact of droughts on societies varies depending on **coping capabilities** and the general health of the national economies concerned. Droughts in India have their own peculiarities requiring appreciation of some basic facts. These are:

- India has an **average annual rainfall** of around 1150 mm; no other country has such a high annual average, however, there is considerable annual variation. More than **80% of rainfall** is received in less than 100 days during the South-west monsoon and the geographic spread is uneven.
- **20% area** receives less than 700 mm rains annually making such areas the hot spots of drought. Inadequacy of rains coupled with adverse land-man ratio compels the farmers to practice **rain-fed agriculture** in large parts of the country.
- **Irrigation**, using groundwater aggravates the situation in the long run as ground-water withdrawal exceeds replenishment; in the **peninsular region** availability of surface water itself becomes scarce in years of rainfall insufficiency.
- **Per capita water availability** in the country is steadily declining. As against total annual availability 1953 km³, approximately 690 km³ of surface water and 396 km³ of from ground water resources can be put to use. So far, a quantum of about 600 km³ has been put to use.
- The traditional **water harvesting systems** have been largely abandoned.

The above factors demonstrate the **complexity of Indian droughts** and the constraints which rule out **'perfect solutions'**. Further, the causes for droughts are increasingly attributable to the mismatch between supply and demand, particularly the demand for non-agricultural purposes. In other words, it is not as if a simple pre-existing problem is awaiting better remedies, the problem itself is becoming more complex.

It also needs to be appreciated that, like anywhere else in the world, agriculture in India is affected by weather in all its phases - from tillage and sowing to post-harvest disposal. Thus, while adequate availability of water is **crucial to agriculture**, it continues to be affected by other variables such as temperature, humidity, solar radiation and wind patterns.

Desertification and Soil Degradation

Any kind of **land degradation** can be termed as desertification. This can take place due to soil erosion, increasing **alkalinity in soil and water-logging**. Land degradation is estimated to affect one third of the total area of the country. While desertification poses **serious livelihood challenges** for the affected populations, for areas under stress of soil erosion and land degradation the process of desertification is accelerated due to continuing cultivation. About **8.6 million hectares** of India's land area is afflicted with the twin problems of alkalinity and salinity coupled with water-logging, which seriously reduces agricultural productivity and has grave implications for our food security system.

Sea Erosion

The **landward displacement of the shoreline** caused by the forces of waves and currents is termed as erosion. Coastal erosion occurs when wind, waves and long shore currents move sand from the shore and deposit it somewhere else. The sand can be moved to another beach, to the deeper ocean bottom, into an ocean trench or

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onto the landside of a dune. The removal of sand from the **sand-sharing system** results in permanent changes in beach shape and structure. The impact of the event is not always seen immediately, but it is equally important when we consider loss of property that it causes. It takes months or years to note the impact.

So, this is generally classified as a **-long term coastal hazard**. While the effects of waves, currents, tides and wind are primary natural factors that influence the coast, other factors leading to coastline erosion are: the sand sources and sinks, changes in relative sea level and **geo-morphological characteristics** of the shore and sand, etc. Other **anthropological effects** that trigger beach erosion are: construction of artificial structures, mining of beach sand, offshore dredging, or building of dams.

About **23% of India's mainland coastline** of 5423 km is getting affected by erosion, according to a survey. As much as 1248 km of the shoreline was getting eroded all along the coast with 480 km of the 569 km shoreline of Kerala affected by the phenomenon. **Prevention measures** against sea erosion include (i) sea walls, (ii) gabions, (iii) boulders, (iii) revetments, (iv) steel piles, (iv) rock groynes and (v) offshore rock bars. The Ministry of Ocean Development has undertaken several **Shoreline Management Plan Projects**. The State Governments have also taken up implementation of anti sea erosion works.

Land Erosion by Sea or River

The erosion of land, whether by the sea in coastal areas or by river waters inland, should be minimized by **suitable cost-effective measures**. The States and Union Territories should also undertake all requisite steps to ensure that **indiscriminate occupation and exploitation** of coastal strips of land are discouraged and that the location of economic activities in areas adjacent to the sea is regulated. Each coastal State should prepare a **comprehensive coastal land management plan**, keeping in view of the environmental and ecological impacts, and regulate the developmental activities accordingly.

DISASTER RESPONSE MECHANISM IN INDIA

Over the centuries, local communities have developed their own **indigenous survival mechanisms**. This rich storehouse of knowledge is a part of our country's legacy. The **Arthashastra** (a treatise on public administration by Chanakya in the 4th century B.C), devoted a section to mitigation measures to combat famines. During **colonial rule**, recurrent disaster in the form of **widespread famines and locust invasions** were a common feature and to deal with these, various **famine commissions** were set up and **Famine Codes** were developed as a safeguard against famines. The entire disaster management exercise was confined to fighting natural calamities, particularly severe droughts causing famines.

After **Independence**, drought relief works were undertaken in areas affected by severe droughts. With the onset of the **green revolution** in the late 1960s the necessity for famine relief work declined and a holistic drought management programme was taken up in the form of the Drought Prone Areas Programme (**DPAP**). Legislation on disaster management at the national level was enacted in 2005 with the **Disaster Management Act, 2005**. Several states had also passed their own legislation on disaster management prior to the National Act.

The subject of disaster management does not find mention in any of the three lists in the **VII Schedule** of the Indian Constitution. The **community** is usually the first responder in case of a disaster. Field level response on behalf of the **government** in rural areas is by the nearest **police** station and the **revenue functionary**; in urban areas the response is articulated by agencies like the **civic authorities**, the **fire brigade** and the local police station. At present, **panchayats** do not have the capacity to react institutionally in any effective manner to such situations and it is the **district administration**, which retains the basic responsibility of handling disaster situations with the Collector playing a pivotal role.

Apart from natural disasters, certain other types of disaster are dealt with through **separate legislations** or rules framed thereunder. For example, the Chemical Accidents (Emergency Planning, Preparedness, and Response) Rules, 1996 have been framed under the Environment Protection Act. Similar Rules have been framed under Atomic Energy Act. Most States Governments have passed **Essential Services Maintenance Acts** (ESMA) to ensure provision of essential services during the time of disaster. The Code of Criminal Procedure (**Cr.P.C**) still remains the most important Act to tackle disaster situations due to public order problems.

ROLE OF STATE GOVERNMENTS

In India the basic responsibility to undertake **rescue, relief and rehabilitation** measures in the event of natural disasters rests with the **State Governments**. The entire structure of disaster administration in the State Governments had been oriented from the very beginning towards **post disaster relief** and

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rehabilitation. Most of the states have **Relief Commissioners** who are in charge of the relief and rehabilitation measures. The Relief Commissionerate is usually an adjunct of the **Revenue Department** whose main job is to administer land ownership, land revenue and tenurial conditions in rural areas and work under the Secretary of the Revenue Department.

In some states, the Revenue Secretary is also the **ex-officio Relief Commissioner**. This has the advantage of providing a direct chain of command to the district Collectors and the Tehsildars who are the main field functionaries in the districts and sub-districts, the basic units of administration, but the focus on disaster prevention and mitigation or even of preparedness is **missing** in such a supervisory framework. A few states have switched over to a **Disaster Management Department** with the required linkages with the various development and regulatory departments concerned with prevention, mitigation and preparedness.

Every state has a **Disaster Management Committee** under the chairpersonship of the **Chief Secretary**, consisting of secretaries in charge of concerned departments, which reviews disaster situations on a day-to-day basis at the time of disaster, coordinates the activities of all departments and provides decision support system to the district administration. At the ministers' level, a **Cabinet Committee on Natural Calamities** under the chairpersonship of the Chief Minister takes stock of situations and is responsible for all important policy decisions.

The **District Magistrate/ Collector** has the responsibility for the overall management of disasters in the district. He has the authority to **mobilize the response machinery** and has been given financial powers to draw money under the provisions of the General Financial Rules/ Treasury Codes. All departments of the State Government including the police, fire services, public works, irrigation etc. work in a **coordinated manner under the leadership of the Collector** during a disaster, except in metropolitan areas where the municipal body plays a major role. The District Collector also enjoys the authority to request for **assistance from the Armed Forces** if circumstances so demand. NGOs have also been effective in providing relief, rescue and rehabilitation in recent times.

ROLE OF UNION GOVERNMENT

Although the State Government concerned has the primary responsibility for disaster management, the Union Government plays a **key supportive role** in terms of **physical and financial resources** and providing complementary measures such as early **warning and co-ordination** of efforts of all Union ministries, departments and organizations. At the apex level, a **Cabinet Committee on Natural Calamities** reviews the disaster situations. A High Level Committee of Ministers under the chairmanship of Minister of Agriculture deals with the issue of financial support to be provided to the State Governments from the **National Calamity Contingency Fund**, if the funds available with the State Governments under Central Relief Fund are not adequate. Matters relating to nuclear, biological and chemical emergencies are looked after by the **Cabinet Committee on Security**.

The **Cabinet Secretary**, as the highest executive officer, heads the **National Disaster Management Committee** (NCMC). Secretaries of ministries and

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departments concerned and heads of other organizations are members of NCMC, which reviews and monitors disaster situations on a regular basis and gives directions to the **Disaster Management Group** as deemed necessary. The NCMC can give directions to any ministry, department or organization for specific action needed for meeting the disaster situation.

Till recently, the **Department of Agriculture and Cooperation** had the nodal responsibility for managing disasters. After the Gujarat earthquake in 2001, this responsibility has been shifted to the **Ministry of Home Affairs**. However, in view of the highly technical and specific nature of certain disaster events such as aviation disasters, rail accidents, chemical disasters and biological disasters etc; the ministries dealing with that particular subject have the **nodal responsibility** for handling that particular type of disaster, as shown below:

NODAL MINISTRIES FOR MANAGING DIFFERENT TYPES OF DISASTERS	
Type of Disasters	Nodal Ministry
Natural and Manmade Disasters	Home Affairs
Droughts	Agriculture
Air Accidents	Civil Aviation
Railway Accidents	Railways
Chemical Disasters	Environment
Biological Disasters	Health
Nuclear Accidents	Department of Atomic Energy

The **Central Relief Commissioner** in the Ministry of Home Affairs is the Chairman of the **Disaster Management Group** (CMG) consisting of nodal officers from various concerned ministries. The CMG's functions are to **review annual contingency plans** formulated by various ministries, departments and organizations in their respective sectors, measures required for dealing with a natural disaster, coordinate the activities of the Union Ministries and State Governments in relation to disaster preparedness and relief, and to obtain information from the nodal officers on all these issues. In the event of a disaster, the **CMG meets frequently** to review relief operations and extends all possible assistance required by the affected states to overcome the situation. The **Resident Commissioner** of the affected state is also associated with such meetings.

Schemes for **financing expenditure on relief** in the wake of natural calamities are governed by the recommendations of the **Finance Commission** appointed by the Government of India every five years. Under the existing scheme, each state has a corpus of funds called **Calamity Relief Fund (CRF)** administered by a State Level Committee headed by the Chief Secretary of the State Government. The **size of the corpus** is determined with reference to the expenditure normally incurred by the state on relief and rehabilitation over the **past 10 years**. In case the funds under CRF are not sufficient to meet the specific requirements, State Governments can seek assistance from the **National Calamity Contingency Fund (NCCF)** – a fund created at national government level. Both these funds, as the names suggest, are meant for relief and rehabilitation and **do not cover either mitigation or reconstruction works**, which have to be funded separately by the State or Union Government.

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Apart from this, the Union Government facilitates the services of the **Armed Forces**. The Armed Forces, in view of their ability to organize action in adverse ground circumstances, their **speed of operational response** and also the resources and capabilities at their disposal play a major role in assisting the civil administration particularly in emergency support functions such as communications, search and rescue operations, health and medical facilities, transportation, power, food and civil supplies, public works and engineering, in the immediate aftermath of major disasters.

Timely Action Saves Lives: On June 26, 2005, there was a **sudden breach in the artificial lake on river Parechu**, in Tibet (China) which led to an unprecedented rise in the water level of river **Satluj** and caused **flash floods in five districts of Himachal Pradesh**. Due to a timely alert sounded by the ITBP post at Lepcha and prompt action initiated by the State Government and Government of India for evacuation of people residing on the bank of rivers Spiti and Satluj, not a single human life was lost. The flash floods, however, caused **extensive damage to roads, bridges**, agricultural crops, government & private properties and other infrastructure.

INTERNATIONAL EFFORTS & HIGH POWERED COMMITTEE (HPC)

A paradigm shift in the **approach to disaster management** from relief & rehabilitation to prevention & mitigation and towards a **holistic & comprehensive framework**, took place with the **United Nations** deciding to observe the 1990s as the International Decade of Natural Disaster Reduction (**IDNDR**). National Governments were expected to pay special attention to measures to deal with natural disasters in a manner designed to minimize their occurrence and to mitigate hardships if they do occur. The efforts took concrete shape in India in **1999** with the constitution of a High Powered Committee (**HPC**) on Disaster Management.

Its mandate was to **suggest institutional measures** for effective management of both natural & man-made disasters. The HPC submitted its final report in **2001** outlining a vision to create a **disaster-free India** through adherence to the **culture of preparedness**, quick response, strategic thinking and prevention. The HPC came out with a large number of recommendations, dealing with the **constitutional and legal framework**, organizational structures and institutional mechanism in the overall disaster management system of the country.

CONSTITUTIONAL FRAMEWORK: NEED FOR A SEPARATE ENTRY

As stated earlier, the subject of disaster management does not find mention in any of the three lists in the **VII Schedule** of the Indian Constitution. The **NCRCW** (National Commission on Review of Working of Constitution) in **2000** recommended that –Management of Disasters and Emergencies, natural or man-made be included in **list three** i.e. the concurrent list of the Seventh Schedule of the Indian Constitution. High Powered Committee (**HPC**) in **2001** recommended that disaster management should find an appropriate mention in **any one of the three lists of the VII Schedule** to the Constitution. Before we examine the issue of where the subject should appropriately be included, it is necessary to **analyze the activities** that

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constitute 'disaster management' so as to ensure that these do not come into conflict with other entries in the three lists.

Disaster management encompasses all activities including **preparedness**, early warning systems, **rescue, relief and rehabilitation**. The term disaster includes natural calamities, health related disasters (epidemics), industrial disasters and disasters caused by hostile elements such as terrorists. There are already **various entries in the three lists**, which deal with some aspect or other of disaster management. „**Public order**“ finds a place in the State List, as does **Public Health**. Entries 14 and 17 in the State List deal with **Agriculture and Water** respectively. **Environment and Social Security** are included in the Concurrent List. **Atomic energy and Railways** are part of the Union List. In addition, after the 73rd and 74th amendments all civic powers have been delegated to local bodies.

Due to the **cross cutting nature of activities** that constitute disaster management and the **vertical and horizontal linkages** required which involve coordination between the Union, State and local governments on the one hand and a host of government departments and agencies on the other; setting up of a **broadly uniform institutional framework** at all levels is of paramount importance. The legislative underpinning for such a framework would need to ensure congruence and coherence with regard to the **division of labour and responsibilities** among the agencies at the Union, State and other levels. **2nd ARC** (Administrative Reforms Commission) recommended that a new entry, "**Management of Disasters and Emergencies, natural or manmade**", may be included in **List III** (Concurrent List) of the VII Schedule of the Constitution to best achieve the goals of disaster management.

LEGAL FRAMEWORK: EVOLUTION & PRESENT STATUS

Traditionally the **district administration** has been the focal point of disaster management activities and powers have been vested in the Collectors. While there was no comprehensive law on the subject, **laws and regulations** pertaining to certain specific types of disaster situations did exist. These include:

- **The Factories Act, 1948** amended after the Bhopal tragedy to include the right to information; along with the EPA, 1986 which lays down rules for the protection of land, water and air; and the Manufacture, Storage and Transport of **Hazardous Chemicals Rules, 1989** and the Chemical Accident (Prevention and Preparedness) Rules, 1996;
- **The Atomic Energy Act** combined with Rules notified under the Environment Protection act, 1986 (EPA) which provide for emergency response plans both on and off site for atomic accidents / disasters;
- **State Essential Services Maintenance Acts** (ESMA) which govern incidents involving disruption of essential public services;
- **Various Regulations/ Codes/ Rules** relating to different aspects of disaster management e.g. Coastal Zone Regulations, Building Codes, Fire Safety Rules etc;
- The **Code of Criminal Procedure**, which deals with public nuisance; **The Army Act**, which empowers civil administration to seek help of army during disaster; and
- State Public Health Acts; **State laws** dealing with public order & local governments.

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HPC drafted a **comprehensive legislation** on the subject in 2001 as **-National Calamity Management Bill**. This draft Bill aimed at ensuring efficiency and effective management of natural and other calamities and achieving greater coordination and responsiveness with respect to prevention and mitigation of disasters so as to provide better relief and rehabilitation of victims of disasters. Besides, HPC also drafted a **Model State Disaster Management Bill**.

At the time of **Gujarat earthquake** in **2001**, the Union Government announced important **policy decisions** for revamping the disaster management system in the country. These are:

- Disaster management with reference to **rapid onset disasters** was moved from the purview of the Ministry of Agriculture to the **Ministry of Home Affairs**. The Ministry of Agriculture retains the responsibility for droughts, pest attacks and hailstorms;
- State Governments were advised to reorganize their Relief & Rehabilitation Department into a separate **Disaster Management Department**;
- State Governments were further advised to constitute **State Disaster Management Authority** under the Chairmanship of State Chief Ministers and the District Disaster Management Committee under the Chairmanship of District Collectors;
- A specialized force comprising 8 battalions to be named as **National Disaster Response Force** to be constituted with state-of-the-art equipment and training to respond to various natural and man-made disasters;
- An advanced **fail-proof disaster communication network** would be set up through Emergency Operation Centres (EOC) at national, state and district levels;
- The **National Institute of Disaster Management** was set up at Delhi for training, capacity building, research and documentation on different aspects of disaster management in the country;
- **Basics of disaster management** to be introduced in school education, disaster resistant technologies to be introduced in engineering and architecture courses and emergency health management to be introduced in medical and nursing education;
- A **community based** disaster risk management programme to be launched in multi-hazard districts throughout the country.

While the post-Gujarat earthquake reform initiatives were still in their initial phase of implementation, a **devastating tsunami** hit many countries on the rim of the Indian Ocean including several states of our country. This experience brought home the necessity of further reforms in the system. Taking the institutional reform process further, the Union Government decided to formulate **comprehensive disaster management legislation**, providing for a legal and institutional framework of disaster management at all levels in the country.

While the Central law was under consideration, the following **state laws were passed**: (i) The Bihar Disaster Management Act, 2004, (ii) Uttaranchal Disaster Mitigation, Management and Prevention Act, 2005, (iii) The Gujarat State Disaster Management Act, 2003 and (iv) The Uttar Pradesh Disaster Management Act, 2005.

The **Bihar** Act is based on the model recommended by the HPC. The **Uttaranchal** Act contemplates constitution of a Disaster Mitigation and Management Center to focus on disaster management, creating awareness, networking & information exchange, establishing and operationalising an Advance Warning System in the region

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etc. The **Gujarat Act is quite different**. Here the **definition** of 'disaster' is wider than in the model proposed by HPC. The Gujarat Act also constitutes a **State Disaster Management Authority**, headed by the Chief Minister with state ministers and officers as its members. This Authority acts as the central planning, coordinating and monitoring body for disaster management. The Act does not constitute anybody at the district level but envisages that the **Collector would head** the disaster management efforts.

Meanwhile, Parliament enacted the **Disaster Management Act, 2005** by invoking entry namely „**Social security and social insurance, employment and unemployment**“ in the Concurrent List even though all aspects of disaster management cannot be said to be covered by this entry. **Salient features of Act** are given below:

THE DISASTER MANAGEMENT ACT, 2005: SALIENT FEATURES

- The Act **defines disaster** as 'a catastrophe, mishap, calamity or grave occurrence in any area, arising from **natural or manmade** causes, or by accident or negligence which results in substantial loss of life or human suffering or damage to, and destruction of, property, or damage to, or degradation of, environment, and is of such a nature or magnitude as to be **beyond the coping capacity of the community** of the affected area'.
- The Act provides for establishment of a **National Disaster Management Authority** (NDMA) with **Prime Minister** as the ex-officio Chairperson and other Members, not exceeding 9 in number. The NDMA shall be responsible to **lay down policies** on disaster management; approve the National Plan & plans prepared by various Ministries or Departments; lay down **guidelines** to be followed by the State Authorities in drawing up the State Plan; and **coordinate** the enforcement and implementation of the policy and plan for disaster management.
- The Act further provides for the constitution of a **National Executive Committee** (NEC). The **Secretary** in charge of the Ministry of the Central Government having administrative control of disaster management shall be ex officio Chairperson of the NEC. NEC shall act as the **coordinating and monitoring body** for disaster management & related aspects; **prepare the National Plan** to be approved by the National Authority; provide **technical assistance** to the State Governments; **evaluate preparedness** at all governmental levels; initiate **training** programme; and promote general education & awareness.
- At the **State level**, there shall be a **State Disaster Management Authority** (SDMA) with **Chief Minister** as ex officio Chairperson responsible for such functions similar to **NDMA** but at the State level. There shall be a State Executive Committee (SEC) on the lines of **NEC** with **Chief Secretary** as the ex officio Chairperson.
- At the **district level**, there shall be a **District Disaster Management Authority** (DDMA), with **Collector** as ex officio Chairperson, **elected representative** of the local authority as the ex officio co-Chairperson, and Chief Executive Officer, the Superintendent of Police, Chief Medical Officer, all ex officio and maximum 2 other district level officers to be appointed by the State Government, as members shall act as the district planning, coordinating and implementing body for disaster management and take all measures for the purposes of disaster management in the

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district in accordance with the **guidelines laid down by the National Authority and State Authority.**

- The Act provides for the preparation of a **hierarchy of Plans** at National, State and District levels. All these Plans shall be reviewed and updated **annually**. The **National Disaster Plan** shall be **prepared by the NEC** with regard to the national policy and in consultation with the State Governments and expert bodies and organizations and shall be **approved by the NDMA**. The National Plan shall include:
 - a. measures to be taken for the **prevention** of disasters, or the mitigation of their effects; **integration** of mitigation measures in the development plans;
 - b. measures to be taken for **preparedness and capacity building** to effectively respond to any threatening disaster situation or disaster;
 - c. **roles and responsibilities** of different Ministries or Department of the Government of India in respect of measures specified above
- **State Disaster Management Plan** shall be prepared by the SDMA in line with the National Plan and after consultation with the local authorities, district authorities and people's representatives as it may deem fit.
- **District Disaster Plan** shall be prepared by the DDMA in consultation with the local authorities and municipality and in line with the National and State Plan. Besides other things, the District Plan shall also include the **response plans in the event of a disaster**, providing for- allocation of **responsibilities** to various Departments; prompt **response** to disaster & relief thereof; **procurement** of essential resources; establishment of **communication** links; and dissemination of **information** to public.
- The Act further provides for the constitution of the **National Institute of Disaster Management** (NIDM) responsible for planning and promoting **training & research** in the area of disaster management, documentation and development of a national level information base.
- The Act further provides for the setting up of **National Disaster Response Force** (NDRF) for the purpose of **specialist response** to disaster or threatening disaster. The superintendence, direction and control of the Force shall vest in the NDMA.
- It provides for a **National Disaster Response Fund** (NDRF) under NEC and National Disaster Mitigation Fund under NDMA. Besides, every Ministry and Department shall make provisions in its **annual budget**, for funds for the purpose of carrying out the activities and programmes set out in its disaster management plans. The States shall constitute similar funds at the State and district levels.

Analysis of the Disaster Management Act, 2005

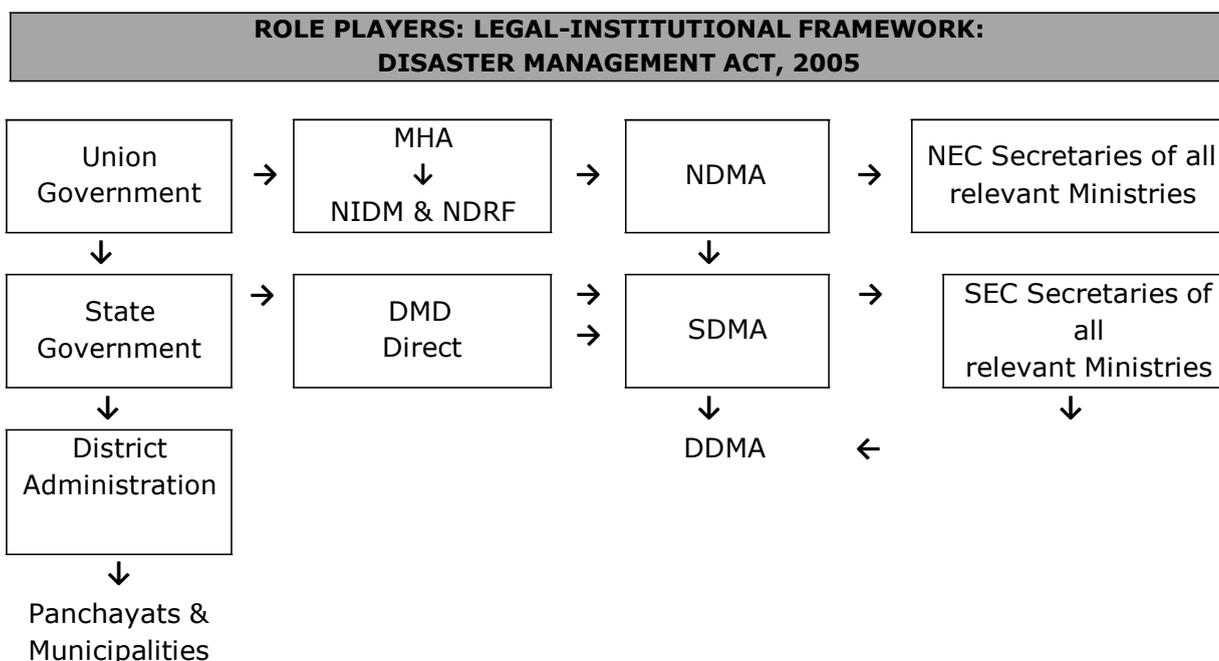
The scope of this definition does not cover a **variety of other crisis situations** that may or may not culminate in a disaster. The Act concentrates very **comprehensive powers and functions** at the national level. The NDMA as well as the NEC have been given the role not just of planning, coordinating, monitoring and providing assistance during a disaster but also **executive functions** related to implementation of the emergency relief and disaster response. The Act envisages a **unified structure** of disaster management in the country; the **integration** of this

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institutional structure with the existing constitutional, legal and administrative framework of the country may, however, **pose several problems**.

Under the Act, the NDMA and the NEC will not only approve the national plans and the plans of the respective union ministries/ departments; they will also lay down guidelines for the state authorities, coordinate the enforcement and implementation of these policies and plans for disaster management and ensure timely response. All these functions traditionally have been performed by State Governments. What, in fact, is however needed is **further empowerment and delegation** to the front-end functionaries when it comes to implementation of disaster management efforts. Moreover, in any disaster situation, **expeditious and appropriate response** is the essence, and the **field functionaries**, the State Governments and the line departments and ministries of the Union Government being aware of the field situation would be in the best position to provide timely and effective response, if they are fully authorized to do so.

International practices also do not normally involve setting up **centralized authorities** with command and control functions to deal with disasters. For example, in **the US**, the Federal Emergency Management Agency (**FEMA**) is an agency that operates under the control of the Department of Home Land Security for the purpose of **overseeing federal government assistance** in domestic disaster preparation, training of first responders and coordination of the government's disaster response efforts. Similarly, in **Japan**, although legislation provides an overall structure for planning and response, **local governments** have the primary responsibility of disaster management. **Bangladesh**, on the other hand, with its history of recurrent floods and cyclones, has adopted a more unitary model, setting up a Ministry of Disaster Management and Relief (MDMR) at the national level.



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Main Recommendations of 2nd ARC on Disaster Management Act 2005:

- a. Disaster Management should continue to be the **primary responsibility** of the State Governments and the Union Government should play a **supportive role**.
- b. The Act should provide **categorization of disasters** (say, local, district, state or national level) along with **intensity** of each type that will help in determining the level of **authority** primarily responsible as well as the **scale** of response and relief.
- c. The law should create a **uniform structure** at the apex level to handle all disaster headed by the PM at the national level and the CM at the state level.
- d. The **NEC need not be constituted**, and the NCMC should continue to be the apex coordination body. At the state level, the existing coordination mechanism under the Chief Secretary should continue.
- e. The role of the **local governments** should be brought to the forefront for disaster management.
- f. The law should make provisions for **stringent punishment** for misutilisation of funds meant for disaster management.

What should a law on disaster management provide?

The experience from past disasters and the prospect of more disasters, demand a **holistic and an agile system** for dealing with disaster. This would require strengthening of the existing legal framework, **removal of loopholes**, wherever they exist, ensuring an effective **coordination mechanism** and an administrative structure with unity of command and well defined responsibilities at all levels.

The traditionally used **definition** of the word 'disaster' and its association with natural calamities is limited in scope. With rapid economic development, **man-made disasters** pose equally grave threats to all life, property and environment. Moreover, man-made disasters are **preventable** and therefore what needs to be tackled is 'crises' and not disaster. Every disaster is a crisis, but **every crisis may not lead to a disaster**. Focus should be on **management of crises** so that their degeneration into a disaster is prevented.

The **multidisciplinary nature** of disaster management, its large canvass spreading from preparedness to rehabilitation and evaluation, and its widespread impact, which require resources to be drawn from different levels of government, means that a totally centralized or totally decentralized mechanism would be ineffective. It is best if **certain functions of disaster management are centralized** while others are decentralized down to the lowest level.

Immediate rescue and relief should be the responsibility of the **level of government closest** to the affected population. This logically has to be the district administration and the local self-governments. The same argument also holds good for the **rehabilitation** efforts. The district administration is part of the State Government and the primary responsibility for managing any disaster is with the State Governments. The resources of states being limited they seek and get assistance from the Union Government. This arrangement of **"bottom-up" responsibilities** regarding implementation is appropriate and has worked well in past and should not be disturbed.

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On the other hand, disaster management **planning** requires **wider perspective and expertise**. Developments in science and technology should be used for mitigating the adverse impacts of disasters and have to be studied, researched and updated. **Specialized manpower and equipment** for dealing with disasters also needs to be readily available. A repository of best practices needs to be created so that these could be replicated, adapted, if necessary and used on future occasions. National and regional **early warning systems** need to be developed and deployed. Moreover, there is the need for implementation of standard **capacity building and awareness generation programmes**. These types of activities call for an agency to coordinate efforts at the state and the national levels.

Thus, the legislation for disaster management needs to **create agencies/ authorities** at local/district/state and national levels. The responsibility and the authority assigned to each one of these have to be distinct. **National level planning**, research, analysis and adoption of best practices, development of standard operating procedures (national level), development of training and capacity building programmes, administration of early warning systems and formulating policy on disaster management are best entrusted to a national body. **Local planning and the actual work of implementation** are better left with State Governments, local governments and the district administration with support from the Union Government's implementing agencies.

Disaster management may require **mobilization of resources and services**. Such resources and services may have to be requisitioned including from individuals and private organizations. The law needs to empower authorities handling disasters to requisition such **resources for specified periods** and the issue of compensation should not be a hindrance in disaster management efforts. A **warning about a looming disaster**, received well in time, can avert huge loss of human lives. To ensure this, state-of-the-art early warning systems have to be meticulously designed and installed.

But even with a high degree of sophistication, the human element is involved in the **transmission process** and any slippage due to carelessness could prove disastrous. Prompt transmission of information, as prescribed under standard operating procedures and instructions for transmission, should be made a statutory duty of each concerned functionary. **Responsibilities of citizens** should also be appropriately provided for in the law.

Another lesson learnt from past disasters is that **funds meant for disaster relief** often tend to get misused as normal procedures are not followed because of urgency. While enforcing stringent procurement procedures may become a hurdle in the disaster management effort, the **penalty for misutilisation of funds** meant for disaster relief should be stringent and could form part of the law itself.

The Role and Functions of a National Disaster Management Organisation

The main scope of a **disaster management law**; or a National Disaster Counter Measure Act is to establish a national agency/ organization for coordination of disaster management.

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The **role** of such an organization is to:

- Provide a **coherent approach** to disaster management across all phases from preparedness and mitigation to response and recovery.
- Provide a **common framework**
- Allocate **responsibilities clearly**.
- Provide a framework for **coordinated response**.

The National Disaster Management Organisation (NDMO) is **not intended to**:

- **Duplicate** normal government.
- Act **independently** of government.
- Seek to **control** other agencies.

INSTITUTIONAL FRAMEWORK

Institutional Framework at Apex Level

HPC had observed that disaster management needs **full political commitment** at all levels of national, state and local government as cataclysmic events sometimes assume the **nature of national disaster** involving the mobilization of practically the entire government at the highest level. The HPC had recommended that an **institutional mechanism** needs to be created at the highest level by setting a **Cabinet Committee on Disaster Management** that would ensure continued and sustained focus on this area at the highest level of government.

The HPC also recommended that the **All Party National Committee** under the Chairmanship of the Prime Minister and the Working Group set up under it, need to be institutionalized as **permanent standing bodies** as the former would help generate the necessary political will, consensus and support, while the latter, that is the Working Group, being a body of experts, will evolve appropriate strategies for implementation of broad policy guidelines.

The HPC recommended the creation of a **separate ministry of disaster management** for **sustained and focused efforts** in the area of disaster preparedness, mitigation and management. It was envisaged that this ministry would deal with both man-made and natural disasters as a 'nodal ministry'. The functions expected of the ministry were **networking and coordination** of national resources while the concerned 'functional' ministries would continue to discharge their responsibilities and functions in accordance with their respective disaster management plans and also work in close cooperation with the nodal ministry. **Uttaranchal** is the only state, which has a separate department of disaster management. However **2nd ARC** was not in favour of creation of a separate ministry as it is likely to lead to conflict and delays rather than coordination. Such a coordination mechanism is now available with the formation of the **NDMA**.

Coordination at the Apex Operational Level

National Disaster Management Committee (**NCMC**) headed by the Cabinet Secretary coordinates and guides the work of different departments of Government of India in times of disaster. The **NEC** envisaged under the Disaster Management Act, 2005 would be **duplicating the role** of NCMC to a great extent. Moreover, there is need to shift the focus from managing disasters to **managing crises** and the NEC would not be

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in position to handle all types of disaster. This problem would be further compounded in case of **multiple disasters**. **Unity of command and quick decision making** are paramount in any disaster management situation. 2nd ARC recommended that NEC as envisaged under the Disaster Management Act **need not be constituted** and that the existing coordination mechanism under the Cabinet Secretary should continue. Similarly, at the state level the existing coordination mechanism under the Chief Secretary should be retained.

The Act also envisages establishment of a **National Disaster Response Force (NDRF)**, a uniformed and highly trained **quick response agency** to respond to the needs of search and rescue and to provide, on the spot, life-saving assistance to the victims. To a large extent, this role has been admirably filled by our **Armed Forces**, in particular, the Army. The lessons learnt from the devastating hurricane Katrina in the US is that extraordinarily severe disasters could overwhelm specialized agencies and that in such situations the Armed Forces remain the „**measure of last resort**“. It is imperative that even after the NDRF becomes fully functional, the „**enabling role**“ of the **Armed Forces** in assisting the civil authorities be retained and the Armed Forces continue to maintain capabilities in specialized search and rescue operations.

Role of Local Self-Governments

Local self-governments, both rural and urban, have emerged as important tiers of governance, after the 73rd and 74th Amendments to the Constitution. For the people, they are also the **nearest units of administration** and are among the **first responders to any disaster** besides being closely knit with the communities. These units can thus play an important role in disaster management under the **overall leadership of the District Administration**. With the enactment of a central legislation on the subject and the possibility that more state level legislations will be forthcoming, State Governments would need to examine if enabling, provisions need to be introduced in disaster management legislations or even the municipal legislations to **bring greater salience** to the role of the municipal bodies in responding to disasters.

Disaster Management Set Up for Metropolitan Cities

In major cities (say, with population **exceeding 2.5 million**), Municipal Corporations have a **large administrative system** including departments like engineering, public health and revenue, and sometimes fire services. These should provide a **good mechanism for coordinated response** in case of any disaster/disaster. Moreover, in cities where there is a **Police Commissioner system**, the District Collector does not have as much a role as in other districts. In such situations, **District Disaster Management Authority** prescribed by the Disaster Management Act, 2005 may not be very suitable. In metropolitan cities it is advisable to make the urban metropolitan government directly responsible for disaster management. The **Mayor assisted by the Commissioner** of the Municipal Corporation and the Police Commissioner should be directly responsible for Disaster Management.

Bringing “Water” at the Centre Stage of Policy Domain

Two of the major types of disasters i.e. **floods and droughts** are primarily water related. Adoption of both short and long term measures would remain

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sub-optimal unless larger issues like the **National Water Budget** and a policy regime that takes cognizance of the **mismatch between supply and demand** are properly addressed. A major impediment to making any progress in this direction is the „**segmented policy attention**“ from a number of ministries/ departments. Without being exhaustive, attention may be invited to the **following different policy platforms**:

- Ministry of Water Resources; Irrigation and Flood Control, Inter-State Basin Issues.
- Department of Drinking Water Supply; Rural Water Supply.
- Ministry of Urban Development and Poverty Alleviation; Urban Water Supply.
- Ministry of Environment and Forests; Lakes, control of desertification/aridity.
- Ministry of Agriculture; Watershed Development/Droughts.
- Ministry of Rural Development; Water conservation in rural areas.
- Ministry of Science and Technology; Hydrology, Hydrogeology etc.

The **long term interests** of the country, including drought related concerns, will be better addressed if all the policy aspects and **schemes with water, water conservation and improving water availability** as their primary focus are brought on a single policy platform. This aspect needs to be considered along with other issues concerning „**machinery of the central government**“. It may be added here that while a **National Water Policy** encompassing diverse policy concerns was framed in 2002 with the Ministry of Water Resources as the „**nodal point**“, recognition of ‘policy diversities’ has not resulted in the emergence of a road map for integration of responsibilities.

The National Commission for **Integrated Water Resources Development Plan-1999** examined the issue of institutional set up at the state and national levels. That Commission stated as follows about the structure at the state level. The dominant **institutional structure** of governments in India is departmental and that is true of the water sector also. In that structure, there is **division of responsibilities among departments**, both in the Ministry (secretariat) and at the implementing levels (Head of the Department and his vertical organization down to the field level) - No department is in charge of or can **command services of all components of work** that are essential for achieving results. Since the number of departments has increased, there is need for **time-consuming consultations**.

While there are **constant inter-departmental references and meetings**, there is a weak coordination and lack of a holistic approach. The negative effects of departmental structure are aggravated by the **lack of internal delegation of decision-making**. The head of the department and organization for research, education, training and survey and data collection - which should have **enough autonomy in their working**, function as subordinate offices and have to seek the Ministry’s orders and approvals on most matters. **Micro-management** and not achievement of results is the main result. The basic constraints in a departmental structure are compounded in the case of ‘Water’, because many departments deal with different aspects of water.

Since the *raison d’être* of departmental officialdom is to **serve farmers**, the irrigation bureaucracy must understand and **appreciate the socio-economic dynamics of human interaction**. The pressing needs of integrated decision-making

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require an organizational restructuring to a more **holistic management orientation** involving a multidisciplinary interaction of diverse expertise covering the full range of **water management skills** to achieve the goals. The irrigation departments may be restructured from a hierarchical to a functional orientation.

Similarly, it emphasized the need for an **integrated approach at the national level also**. It stated: The Ministry of Water Resources was concerned, from its earlier days as Ministry of Irrigation and Power, mainly with 'irrigation' aspects of water resources. Its current mandate in the Allocation of Business includes the following general clause, namely: **'Development, conservation and management of water** as a national resource; overall national perspective of water planning and coordination in relation to diverse use of water'.

Water supply– urban and rural, **soil conservation** and watershed development, environment, water quality etc. are dealt with by other ministries/ departments. The policies and programmes of the one **impinge on the other**. Since water has diverse uses, the entire subject cannot be brought under one ministry and as stated above, what is essential is to **ensure coordination**. For this purpose, the ministry (secretariat) and more so, its attached office (head of the department) should have **multi-disciplinary capability**.

The challenges of **integrated water development and management** can be fixed only if the **apex institution at the national level** is suitably equipped for it and has the necessary **multi-disciplinary capacity**. The status of an attached office, which is in practice subordinate to the Ministry and has little autonomy in functioning, is inappropriate for achieving this. **2nd Arc recommended** that the CWC should be restructured into a statutory high-powered **inter-disciplinary Commission**, with maximum autonomy, in order to deal with policy and reforms, centre-state and inter-state issues, planning and project finalization, international aspects other than those that have to be retained with the ministry; legal economic and financial issues, water productivity, conservation and management, environmental aspects and rehabilitation, people's participation and communication, coordination and facilitation of inter-disciplinary research, HRD and training, and a National Information/ Data System.

„Policy Integration“ between Long and Short Term Measures

While a number of Centrally Sponsored Schemes have objectives connected directly or indirectly, with drought avoidance, the **two major interventions** in this sphere are the Drought Prone Areas Programme (**DPAP**) and the Desert Development Programme (**DDP**). The thrust of these schemes is **to „treat“ land and vegetation in selected areas** in a manner that the 'treated areas' become less vulnerable to ill effects associated with high drought vulnerability and aridity. These schemes are handled by the **Department of Land Resources (DoLR)** in the Ministry of Rural Development. DoLR is also entrusted with another issue of crucial significance to agriculture, namely, Land Reforms. It is learnt that there is a proposal under active consideration for forming a **National Rainfed Areas Authority**. As already mentioned, for droughts, management of the chronic malady and the disaster are best dealt within a holistic manner in the same Ministry.

Creation of Legal and Institutional Framework for Managing Floods in Inter-State Rivers

Unprecedented floods in many states year after year have highlighted the need for **coordinated release of waters** from reservoirs in the case of inter-state rivers. **Timely information of storage levels** and inflows is not published and there is also the tendency to retain water in the reservoirs until the levels reached are considered dangerous. **Sudden release** of water leads to large scale flooding of downstream regions. The **National Commission for Integrated Development Plan** for Water Resources (1999) had recommended the constitution of inter-state river basin authorities. A beginning should be made at least for the purpose **collection of data, timely release of such data** and working out of agreed releases from reservoirs on reaching certain levels of storage. Legislation needs to be enacted urgently by Parliament using the power under Entry 56 of the Union List dealing with inter-state rivers.

Empowering the Relief Commissioners to Effectively Discharge Disaster Related Responsibilities

The **state level nodal points**, by whatever names known, have to discharge onerous responsibilities of coordination and supervision of disaster relief operations. Such duties are more demanding in case of droughts due to the much longer duration of the **phenomenon and involvement of more governmental agencies**. Keen observers of the scene have generally held the view that there needs to be a standing, though not necessarily **permanent arrangement**, to enable the nodal points to discharge the heavy responsibilities effectively during disaster. This responsibility encompasses many spheres- **damage assessments, planning of relief operations**, sectoral arrangements, inter-sectoral cooperation, distribution of relief and monitoring activities with communication of reports and returns. Added to this is the **daunting task of rendering accounts**.

Clearly, therefore, a **strengthening of the nodal point** and establishment of an **executing-coordinating agency is imperative**. This could be achieved by secondment of officers from related departments to the State Disaster Management Authorities during a disaster. All these officers should work under the leadership of the Disaster Management Department/ Authority. An added advantage of this arrangement will be that over a period of time **departmental representatives** will develop expertise in disaster management. This should help address the long term need for a dedicated cadre of disaster managers. The **State Disaster Management organisations** need to be strengthened for dealing with disaster. This could be achieved in the following manner:

- a. A framework should be in readiness to be put in place immediately during disaster or on fulfillment of some pre-defined scenarios – **the „trigger mechanism“** needs to be well defined to ensure that the **„framework“ is put in active operation instantaneously**.
- b. The 'framework' may consist of **officers drawn from Revenue, Police, Agriculture, Animal Husbandry, Public Health Engineering**, Water Resources, Women & Child Development, Welfare, Public Works, Highways, Irrigation, Health, and Treasury & Accounts Departments. The designated officers must undergo a

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week"s orientation every year, though they may continue to discharge their normal departmental responsibilities except when seconded to the nodal point in the manner suggested above.

- c. The designated officers will work as a **cohesive integrated team** under one roof on whole-time basis during disaster situations, under the leadership of the nodal officer and be responsible entirely for the functioning of their department insofar as it relates to drought/ disaster management.
- d. The **role and responsibility of each department** needs to be specifically identified and defined on the lines the **Ministry of Agriculture** has specified the responsibilities of various Union Government agencies during severe droughts.
- e. The **designated departmental officer** should be delegated powers and responsibilities defined in advance and will deal with other departmental functionaries directly.

Institutional Support of Science & Technology Institutions

Disaster management depends heavily upon the inputs from various **science and technology institutions**. Indeed, major improvements in disaster management efforts may be attributed to developments in science and technology. As disaster management is multidisciplinary in nature, the relevant research is carried out in several **sectoral Research and Development organizations**. Towards strengthening the **national response mechanisms**, the Department of Space (DOS) in the 10th Five Year Plan launched a **Disaster Management Support (DMS) programme**.

Using synergistically space and airborne systems in conjunction with the conventional technologies, the programme has been providing space enabled products and services on a reliable and timely basis for effective disaster management. Other Science and Technology Departments have also drawn up similar major proposals. The organizations are working through **mutual consultations**, but it is advisable to provide a formal common platform to **achieve synergy**. The National Disaster Management Authority, assisted by NIDM, may facilitate a **common platform** between the Science and Technology organizations and the users of the relevant technologies. Such mechanisms may be operationalised both at the Union and State levels.

Strengthening of National Institute of Disaster Management (NIDM))

The National Institute of Disaster Management (NIDM) is a premier national organization working for **human resource development** at national level in the area of disaster mitigation and management. It is an **autonomous body** under the Ministry of Home Affairs and its **objectives** are: (i) to undertake **quality** research, (ii) to work as a **national resource centre**, (iii) to **professionalize** disaster management, (iv) to promote training, (v) to build partnerships with stakeholders and other institutions and (vi) to link learning and action. Certain steps are necessary to enable the institution to meet the expectations with which it was established. In addition to research and studies, the institution needs to engage itself in documenting and disseminating global and national best practices and in developing planning, training and evaluation methodologies.

Professionalization of Disaster Management

Institutional development for disaster management in the country has clearly suffered on account of paucity of **professionally qualified personnel**. While civil servants and other senior personnel in organizations like the police, armed forces and municipal bodies have provided a leadership role and their leadership will continue to be required, it is time that **special attention** is paid to the long felt need to professionalize disaster management in the country. The 'best practices' in disaster management are the **strategies and methods perfected by several developed countries** and India can take advantage from exposure to these practices. It is, therefore, desirable that the possibility of bilateral agreements with foreign governments for exchange of experiences and learning from their documentation and research efforts be fully explored.

'Disaster Management' as a **body of knowledge** should be introduced as a subject in **Management and Public Administration**. The University Grants Commission may initiate the process to see how best this can be implemented in selected universities. The possibility of **bilateral agreements** with foreign governments and international institutions dealing with different aspects of disaster management, for exchange of experiences and learning from their documentation and research efforts may be explored.

DISASTER MANAGEMENT SYSTEM IN THE UNITED STATES

The **1960s and early 1970s** brought massive disasters requiring major **federal response and recovery operations** by the Federal Disaster Assistance Administration, established within the **Department of Housing and Urban Development**. Hurricane Carla struck in 1962, hurricane Betsy in 1965, hurricane Camille in 1969, and hurricane Agnes in 1972. The San Fernando earthquake rocked Southern California in 1971, and the Alaskan earthquake hit in 1964. To respond to national concern regarding these events, the Congress passed the **1974 Disaster Relief Act** that established the process of Presidential disaster declarations.

However, emergency and disaster activities were **still fragmented**. Many parallel programs and policies existed at the state and local level, compounding the complexity of federal disaster relief efforts. In 1979, President Carter issued an executive order that **merged many of the separate disaster related responsibilities** into a new, independent **Federal Emergency Management Agency (FEMA)**. Among other agencies, FEMA absorbed the Federal Insurance Administration, the National Fire Prevention and Control Administration, the National Weather Service Community Preparedness Program, the Federal Preparedness Agency of the General Services Administration, and the Federal Disaster Assistance Administration activities from HUD. **Civil defense responsibilities** were also transferred to the new agency from the Defense Department's Defense Civil Preparedness Agency.

FEMA led the federal response to **hurricane Andrew**, which slammed into and leveled much of South Florida in August 1992. Based on recommendations following the response to hurricane Andrew, FEMA was elevated to a **cabinet level agency** whose director reported to the President. The **Homeland Security Act of 2002**, which established DHS, created new requirements for emergency preparedness and response and placed FEMA within DHS.

LINKAGES BETWEEN DEVELOPMENT AND SPREAD OF EXTREMISM

LEFT EXTREMISM/ NAXALISM

SPREAD AND INTENSITY

The left extremist outburst, later known as the Naxalite movement, started in March **1967** in the 3 police station areas (**Naxalbari, Khoribari and Phansidewa**) of Darjeeling district in West Bengal. The ‘Naxalbari phase’ of the movement (1967-68) gathered momentum during May-June 1967 but was brought under control by July-August 1967. Today, the left extremist movement is a complex web that covers many States. According to the Ministry of Home Affairs, at present, **76 districts in the 9 States** of Andhra Pradesh, Bihar, Chhattisgarh, Jharkhand, Madhya Pradesh, Maharashtra, Orissa, Uttar Pradesh and West Bengal are afflicted with **ultra-left extremism** forming an almost **continuous Naxal corridor**.

CPI (MI)-PWG and Maoist Communist Centre-India (MCC-I) have been trying to increase their influence and operations in some parts of other States, namely Tamil Nadu, Karnataka and Kerala and in certain new areas in some of the already affected States. The merger of the CPI (MI)-PWG and the MCC in 2004 has **strengthened their combat capability**. It is estimated that these extremist outfits now have 9,000-10,000 **armed fighters** with access to about 6,500 firearms. There are perhaps another 40,000 full-time cadres. In the last decade, extremist violence is **increasing and expanding**, taking a heavy toll of lives in the affected states. Most of the affected areas are **forest areas** predominantly inhabited by tribal populations.

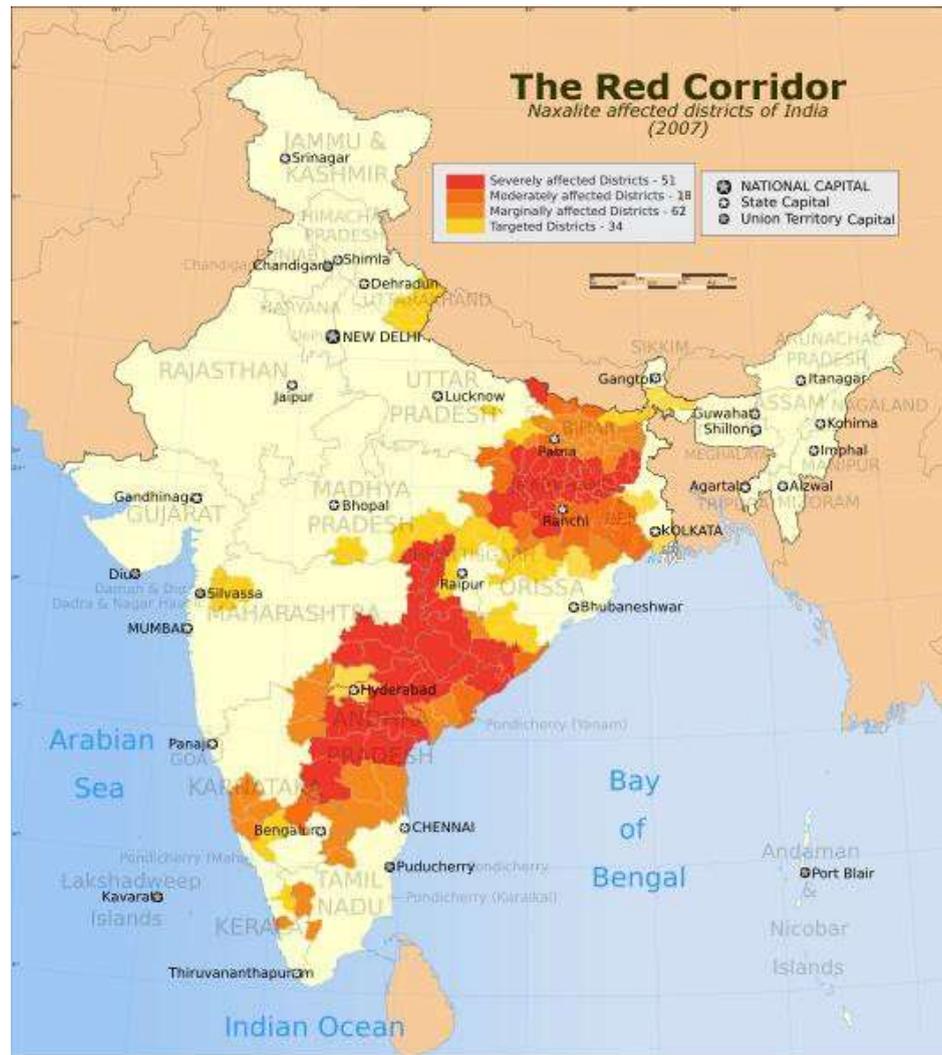
The „Nature“ of the Movement

Barring a phase in the late 1960s and early 1970s the left extremist movement has been largely **agrarian** in the sense that it seeks to **mobilize discontent and misgovernance** in the rural areas to achieve its objectives. Some of the **major features** of the left extremist movement include the following;

- It has emerged as the **greatest challenge** to internal security.
- It has **gained people’s confidence**, grown in strength particularly in forest and tribal areas, by mobilising dispossessed and marginalised sections.
- It creates conditions for non-functioning of the government and actively seeks **disruption of development activities** as a means to achieve its objective of ‘wresting control’.
- It spreads **fear** among the law-abiding citizens.

While these features also form part of the activities of all terrorist organisations, due to its wider **geographical coverage**, left extremism has made a deep impact on the conflict scenario of the country.

AREAS OF OPERATION



Naxals are especially concentrated in an area known as the "Red corridor" where they control 92,000 square kilometers. The outfit has also been making attempts to establish and expand its presence in several other States such as Gujarat, Haryana, Punjab, Rajasthan and Himachal Pradesh. According to **Research and Analysis Wing (RAW)**, 20,000 armed cadre Naxalites were operating apart from 50,000 regular cadres working in their various organizations.

CAUSES FOR SPREAD OF LEFT EXTREMISM

While the goal of the left extremists was to actualise their own vision of the State through 'revolution', they chose to usher that revolution by enlisting the **support of the deprived and exploited sections of society** particularly in areas where such sections constituted a significant part of the population. It is, therefore, necessary to identify the reasons for such deprivation and consequent discontent. –Expert Group on Development and the causes of Discontent, unrest and Extremism of the **Planning commission** has identified the following causes:

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Land Related Factors

- Evasion of land ceiling laws.
- Existence of special land tenures (enjoying exemptions under ceiling laws).
- **Encroachment** and occupation of Government and community lands (even the water-bodies) by powerful sections of society.
- Lack of **title** to public land cultivated by the landless poor.
- Poor **implementation of laws** prohibiting transfer of tribal land to non-tribals in the Fifth Schedule areas.
- **Non-regularisation** of traditional land rights.
- Displacement and Forced **Evictions**. Eviction from lands traditionally used by tribals.
- **Displacements** caused by irrigation and power projects without adequate arrangements for rehabilitation.
- Large scale land **acquisition** for 'public purposes' without appropriate compensation or rehabilitation.

Livelihood Related Causes

- Lack of **food security**– corruption in the Public Distribution System (which is often non-functional).
- Disruption of **traditional occupations** and lack of alternative work opportunities.
- Deprivation of **traditional rights** in common property resources.
- **Social Exclusion**
- Denial of **dignity**.
- Continued practice, in some areas, of **untouchability** in various forms.
- Poor **implementation of special laws** on prevention of atrocities, protection of civil rights and abolition of bonded labour etc.

Governance Related Factors

- **Corruption** and poor provision/ non-provision of essential public services including primary health care and education.
- Incompetent, ill trained and poorly motivated **public personnel** who are mostly absent from their place of posting.
- **Misuse of powers** by the police and violations of the norms of law.
- Perversion of **electoral politics** and unsatisfactory working of local government institutions.

It may be highlighted again that these causes are most glaring in **forest areas** predominantly inhabited by tribal populations who thus become the main instruments and victims of left extremist violence. There is a paradox that the **diagnoses of the problem** by the government and the left extremists are similar. Both 'sides' agree that concealed tenancy, tenurial insecurity, low wage rates and lingering feudal practices in many places have generated a discontent among the rural poor – a discontent that makes many of them **active participants in politically motivated violent upsurges**.

Despite a **variety of legislations** enacted to address a whole host of **land related issues** like introduction of land ceilings, distribution of surplus land, consolidation of holdings, prevention of fragmentation of land, protection of rights of

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tenants and settlement of waste-lands etc, their **impact at the ground level** is marginal due to tardy implementation. This has enabled the left extremists to **exploit the disappointment** of the promises made to beneficiaries particularly in areas where there are large number of landless labourers and share-croppers. For example, in Andhra Pradesh, it is the common perception that land for which **pattas** have been issued to the landless is under **de facto occupancy of affluent and powerful people** and that, even tribal leaders are working as agricultural labour in such lands.

Another 'cause' which needs to be noted is the disruption of the age old **tribal- forest relationship**. Historically, tribal life was well integrated with the forest, but legislations and governance in the last century considerably **altered this symbiosis**. The Forest Act, 1927 and the Forest conservation Act, 1980 along with stringent Supreme Court orders have turned forests into **prohibited areas for the tribals**, creating serious imbalances in their lives and livelihoods. This has turned the tribals against government's methods of forest management, and gradually against government itself. This discontent has **provided fertile ground for the spread of left extremism** among tribals living in forest areas.

Rampant alienation of the land rights of the tribals to non-tribals and the States' measures to prevent and undo such transfers through legislations such as the Andhra Pradesh Land Transfer Regulation Act of 1970 have remained on paper, and have further accentuated tribal discontent. In fact, in Andhra Pradesh, there is a perception that even the talks held between the State Government and the Naxals failed primarily because **forest land could not be distributed** among the tribals as demanded by the Naxals.

MEASURES TAKEN BY UNION GOVERNMENT

1. **Modernization of State Police:** Funds are given to the States under the Police Modernization Scheme to modernize their police forces in terms of modern weaponry, latest communication equipment, mobility and other infrastructure.
2. **Revision of Security Related Expenditure (SRE) Scheme:** The level of reimbursement under the Scheme has been raised to 100% and new items like insurance scheme for police personnel, community policing, rehabilitation of surrendered naxalites etc. have been covered under it.
3. **India Reserve Battalions:** The naxal affected States have been sanctioned India Reserve battalions mainly to strengthen security apparatus at their level as also to enable the States to provide gainful employment to the youth, particularly in the naxal areas.
4. **Deployment of SSB along Indo-Nepal Border:** In order to ensure that there is no spillover effect of the activities of Nepalese Maoists to our territory.
5. **Recruitment in Central Para Military Forces:** In order to wean away the potential youth from the path to militancy, recruitment guidelines have been revised to permit 40% recruitment in Central Para Military Forces from the border areas and areas affected by militancy or naxalism.
6. **Backward Districts Initiative (BDI):** Since the naxalite menace has to be addressed on the developmental front also, the Central Government has provided financial assistance for 55 naxal affected districts in the 9 States under the (BDI) component of the Rashtriya Sam Vikas Yojana.

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7. **Tribal and Forest related issues:** In order to address the areas of disaffection among the tribals, the Government has passed Scheduled Tribes (Recognition of Forest Rights) Act, 2006.
8. **Monitoring Mechanism:** Several monitoring mechanisms have been set up including a periodical review by the Cabinet Committee on Security (CCS), Standing Committee of the Chief Ministers of the naxal affected states, Quarterly Coordination Center meetings chaired by the Union Home Secretary with the Chief Secretaries and the Directors General of Police of the affected states.
9. Home Ministry has requested all the Naxal affected states to implement the "**Surrender-Cum-Rehabilitation**" scheme for the Naxalites who want to shun and join in the majority interest of the mainstream Government. Recently, the Jharkhand government offered monthly allowance of Rs. 2000, Life insurance worth Rs. 10 lakh, vocational training for 2 years, one acre agri-land and free education to the Naxalites and their families.
10. **State specific resistance** has already been in force in the form of Salwa Judum (Chattisgarh), Grey Hounds (Andhra Pradesh) and COBRA (Orissa).
11. The government has also initiated **publicity campaigns** in order to garner support from the general public in their efforts to crack down on the naxals. Centre has warned **Maoist sympathizers** including members of civil society and NGOs found supporting the naxals by propagating their ideology or by any other means to be ready to face severe punishment. Many leaders like Kobad Gandhi, Chatradhar Mahato, Chandrabhushan Yadav etc. were arrested.

FEDERAL ISSUES INVOLVED AND ROLE OF STATE POLICE, CRPF, ARMY & AIR FORCE

Given that the naxalite menace is a **multi-State phenomenon** and the objective of the Maoists is not merely to subvert law and order in tribal areas in various States but **wage war** against the Indian Republic, the involvement of centre becomes imperative. Under these circumstances, the Union Government may have to consider invoking even **Article 355** of the Constitution which states, -It shall be the duty of the Union Government to protect every State against external aggression and internal disturbance and to ensure that the governance of every state is carried out in accordance with provisions of the Constitution. The Union Government will have to work out a coordinated plan of operations by all the States carried out in an integrated manner.

Already, a **special cell in the Home Ministry** has been coordinating with the States concerned and providing them assistance in anti-naxalite operations. As Law and Order is a State subject and so the Centre should provide the necessary backup and play a catalytic role by way of facilitating and aiding the negotiation process— all this without impinging on the rights of the States or undermining the federal spirit of the Constitution.

Apart from the Centre-State issue, another important aspect is the relative roles of the State Police, the CRPF and the Army and Air Force. The position taken was that it is basically the responsibility of the State Police; the Centre can hitherto **supplement the State Police force** by providing troops of the Central armed reserve police force.

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After the recent **Dantewada ghastly massacre**, the Home Minister felt that this approach may not be adequate and the help of the Army and Air Force will have to be invoked. His thinking is a sharp departure from the hitherto held position that the Army is meant to and equipped for dealing with **external aggression** by forces of the hostile country and not with the people of the country. This principle has already been sacrificed in dealing with disturbances caused by insurgency in the North- Eastern States like Manipur as well as in J&K which has for long been the victim of externally induced terrorism. The **Disturbed Areas Act** and **Armed Forces Special Powers Act** have been designed to facilitate the active role of the Army in these Border States.

Now the same approach, it was suggested, had to be extended to the tribal areas to introduce the Army to deal with the Maoist challenge. The Army is being prepared to send its officers on deputation to the States to give guidance for carrying out effective operations. They could also provide training to the State Police force. As for the Air Force, they are prepared to provide **helicopters for surveillance and transport**. All these and other matters formed part of the proposals in the paper submitted by the Home Ministry to the Cabinet Committee on Security presided over by the Prime Minister. Having regard to the opposition of the Defence Ministry to any kind of involvement of the Army and Air Force, the Committee advised the Home Ministry to recruit on contract basis ex-servicemen to help in the operations against the Maoists.

RESOLUTION OF LEFT EXTREMIST CONFLICTS – SUCCESSES AND FAILURES

Many left extremist movements, notably the uprising in Naxalbari, could be **resolved successfully**. An analysis of what really happened in such areas particularly in Naxalbari may provide necessary insights for resolving the present problem of left extremism. From 1972 onwards, the Government of **West Bengal** adopted a slew of **ameliorative measures** in the Naxal-affected districts. The Comprehensive Area Development Programme (**CADP**) was introduced to supply inputs and credit to small farmers and the government took the responsibility of marketing their produce. **Naxalbari and Debra**, the worst Naxal- affected areas, were selected for the programme.

At about the same time, directives were issued to government officials in **Srikakulam** in Andhra Pradesh and **Ganjam** in Orissa to ensure that **debts** incurred by the tribal poor are cancelled and instead, loans were advanced to them from banks and other sources for agricultural improvement. In West Bengal, after the **Left Front government** came to power in **1977**, **Operation Barga** was started to ensure the rights of the sharecroppers. Alongside, significant increases were made in the **minimum wages** which benefitted large sections of the rural poor. As a result, the beneficiaries of these government programmes began to distance themselves from Naxalism and the process signaled the beginning of the end of Naxalism in these areas. There are important lessons to learn from the experience – there is **no „permanent cure“** to conflict situations and any let up in measures which bring relief can cause recrudescence of conflicts.

Unlike the relatively successful stories outlined above, the situation in **Chhattisgarh** today continues to cause serious concern. The **Bastar region** of the State, which is seriously affected, is an example of how left extremism gained ground because, inter alia, the **tribals in the area were deprived of forest-based**

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employment. Initially, the forests of Bastar were used by the extremists from Andhra Pradesh and Maharashtra as a temporary refuge; later **permanent training camps** came to be established. The active participation of local tribals followed much later in the wake of stresses and strains on their livelihood, growing food insecurity and the growing despair about improvements in their socio- economic situation.

The situation in the region has not been helped by the raising of **local resistance groups called Salwa Judum** started initially in 2 tribal development blocks of south Bastar and now extended to 11 blocks in Chhattisgarh. Even though Salwa Judum is publicised as a spontaneous **awakening of the masses against extremists**, today thousands of tribals are being protected in fortified camps pointing to the disturbed life they are forced to lead. These camps have been attacked by the extremists leading to several deaths. In the process, the poor tribals have been caught between the **legitimate sovereign power** of the State and the **illegitimate coercive power** of the extremists who deliver instant justice through peoples' courts and other informal devices.

Applying the West Bengal model to areas currently affected by left extremism like Chhattisgarh is a matter requiring careful consideration. It is clear that a **judicious mix of development and welfare initiatives** coupled with **land reforms and well planned counter- insurgency operations** is required to restore peace, harmony and confidence in the administration in such areas. It is a matter of satisfaction, therefore that this approach is now receiving wide endorsement. We must recognize that Naxalism is **not merely a law and order issue**. In many areas, the phenomenon of Naxalism is directly related to **under-development**.

It is not a coincidence that it is the tribal areas that are the main battleground of left wing extremism today. Large swathes of tribal territory have become the **hunting ground of left wing extremists. Exploitation, artificially depressed wages**, iniquitous socio political circumstances, inadequate employment opportunities, lack of access to resources, under-developed agriculture, geographical isolation, and lack of land reforms- all **contribute significantly to the growth of the naxalite movement**. All these factors have to be taken into consideration as we evolve solutions for facing the challenge of Naxalism. There has now emerged a consensus on not treating violent left extremism only as a law and order problem but as a **multi causal malaise** with breakdown of law and order as its 'ranking symptom'. In short, management of left extremist violence would require **tapping the capacity of all the elements** of the government and civil society.

MANAGING LEFT EXTREMISM – THE POLITICAL PARADIGM

The government has initiated a „**14-point policy**“ which rightly underscores the need to contextualize left extremism in a perspective that is much wider than the conventional wisdom which places trust on a mixture of the „**police stick**“ and the „**development carrot**“ as the panacea for militant extremism particularly of the left variety. It needs to be emphasized that while the ultimate goal of the left extremist movement is to capture state power, its immediate manifestation is in the form of a **struggle for social justice, equality, dignity and honesty in public services**. Viewed thus, the spread of the movement over a wide area signifies the fact that efforts to remove those conditions which give rise to the acceptance of the ideology of violent

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left extremism have not been particularly successful. In the circumstances it should be possible to visualize this movement not as a threat to the security of the State but a **fight within the State for obtaining what the system promised but failed to deliver.**

In that context, there may also be a need to keep the **door open for negotiations** with such groups and not necessarily insist on preconditions such as lying down of arms. The violent activities of the „**foot soldiers**“ – as opposed to its ideologically hardened hardcore – could well be due to the fact that their attempts to get their grievances redressed through non-violent, democratic methods may have not evoked due response. The temptation to utilise the police forces is very high but it should be remembered that **unaccountable police action** and abuse of police power validates violence even among the hitherto non-involved populations.

To sum up, left extremism feeds on **persistent and serious shortcomings in the domain of general and development administration**, resulting in the failure of the government to address the needs of the poor in areas pertaining to land, food, water and personal security, equity, ethnic/cultural identity etc. If this diagnosis is accepted, then the ‘containment’ of the problem may inter alia require consideration of the following:

- Most of the ‘participants’ in violence perpetrated under the banner of left extremist organisations are **alienated sections of society** rather than perpetrators of ‘high treason’ – they have to be treated as such.
- A **fortiori police action** over a long period is counter-productive; it is likely to affect the innocent more than the extremists.
- **Negotiations** have a definite ameliorative role under the circumstances; this is the experience the world over.
- Faithful, fair and just **implementation of laws** and **programmes for social justice** will go a long way to remove the basic causes of resentment among aggrieved sections of society.
- Sustained, professionally sound and **sincere development initiatives** suitable to local conditions along with democratic methods of conflict resolution have a higher chance of success.

Actualisation of such **strategy of „containment“** would require all round **capacity building** within the apparatus of the State and civil society, sincerity and perseverance of efforts and accountable and transparent administration.

CAPACITY BUILDING TO DEAL WITH VIOLENT LEFT EXTREMISM

Various instruments and elements of State and civil society need to be pressed into service to manage the situation brought about by left extremism. To achieve this, it is necessary that the **capacities of such instruments** and elements are suitably enhanced. These can be considered under the following categories:

- A. Security Forces
- B. Administrative Institutions
- C. Government Personnel
- D. local bodies
- E. civil Society Organisations

Building capacity of Security Forces (including the Police)

- a. 'Dialogue' and 'accommodation' are easier to find acceptance when the **good intentions of the State** and its will to restore order are concurrently visible. Thus subject to the limitations of police methods, security forces have a supportive but essential role in handling the situation. This would require suitable **legal and motivational support** to and effective deployment of the security forces.
- b. A **satisfactory state of law and order** is also a necessary precondition for development. Development, despite being essential to maintain peace in disturbed areas, must be accompanied by **vigorous action of the security forces** including providing protection to personnel responsible for implementation of development programmes. In seriously disturbed areas where agencies involved with development work find it difficult to operate, there may be a case for **temporarily entrusting some development work to the security forces**. This approach was tried successfully in West Bengal, where the local police helped in ensuring that schools and health institutions functioned effectively.
- c. It goes without saying that even in the most difficult and trying situations, the **operation of security forces** must be strictly within the framework of the law. To enhance the capacity of the security forces to act effectively and firmly but within constitutional bounds, it is necessary that **standard operational procedures** and protocols are laid down in specific terms and detail.
- d. **Training and reorientation** including sensitizing police and paramilitary personnel to the root causes of the disturbances that they are seeking to curb are requirements that need no further elaboration. Formation of **specially trained special task forces** on the pattern of the **Greyhounds** in Andhra Pradesh also form an important element of the strategy to build capacity in the police machinery for tackling left extremism.
- e. Notwithstanding the large scale deployment of forces from outside the affected areas, experience of handling extremist violence of different types indicates that a police force comprising primarily of **local people** is of inestimable value in dealing with the situation. **Local police forces** have a huge advantage in intelligence gathering capacity because of their constant interaction with local populations. In terms of costs also, strengthening the local police station is far more **cost effective** and more viable in the long run than inducting central forces. In areas affected by left extremism generally the **representation from the groups involved** – mainly the tribals – is inadequate.

Building capacity of Administrative Institutions

There is a great need to **build institutional, in addition to individual, capacity** to improve the quality of delivery of services. Filling the **administrative vacuum** in the regions of the country affected by left extremism is of paramount importance. Institutional capacity refers not only to organisations but also to the **legal framework** and norms within which services are to be delivered. In the context of left extremism, matters like more efficient implementation of laws impinging on the lives and livelihood of the tribals and endowing the delivery institutions with greater effectiveness and empathy are issues of particular relevance.

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Mention has already been made about the crucial **importance of forests in the life of the tribals** and the role which extinguishment of some of their traditional rights played in engendering discontent among this section leading to their support for left extremism. The recently enacted The Scheduled Tribes and other Traditional Forest Dwellers (**Recognition of Forest Rights) Act, 2006** is a welcome measure which seeks to enhance institutional capacity to deal with a major causative factor for support of left extremism in tribal areas. It vests land rights to the extent of **4 hectares per Forest Dwelling Scheduled Tribe** (FDST) nuclear family provided they have been the 'user' of forest land for four generations or 75 years from the 'cut off' date i.e. December 13, 2005.

This **right is heritable** but not alienable and transferable. Vested land can be used **only for livelihood purposes**. Rights under this also include access to **minor forest produce**, community **rights to intellectual property** and traditional knowledge related to forest biodiversity and cultural diversity. The dwellers are **duty bound to protect the forests**, biodiversity and wildlife in the area. The provisions of the Act, if implemented effectively, will go a long way in addressing the problems of the tribals. It is also necessary that an **Oversight committee** is constituted to monitor its implementation, consisting of individuals including tribals, people with commitment to forest conservation and wildlife preservation and those who have the right degree of social commitment to these causes. Depressed wages and inadequate employment opportunities have already been referred to as causes for tribal discontent. The introduction of the **National Rural Employment Guarantee Scheme** is a major institutional innovation to deal with these causative factors.

Institutional capacity needs to be similarly strengthened within the **line departments**, particularly within their field formations in tribal areas by introducing appropriate **management practices** to deal with the specific needs of marginalised groups and to make deployment of personnel qualified to cater to area specific needs. At the State level, a **coordinated approach** towards converging development programmes for backwards/ areas affected by left extremism by setting up suitable institutional mechanisms should be considered. For example, in Andhra Pradesh, the Principal Secretary, **Remote and Interior Areas Development** (RIAD) department heads such a mechanism to identify problems and suggest measures to meet the development needs of vulnerable areas and groups in a coordinated and comprehensive manner.

There is a case for providing much greater **flexibility in the implementation of centrally sponsored** and other development schemes in such areas for which decentralisation would appear to be the answer. Considering the **nexus between food insecurity and disaffection** with the State, it is necessary that the non-functioning public distribution system is revived by strengthening organisations like LAMP (Large Area Multipurpose Cooperative Societies) to replace privately owned fair price shops and to implement decentralised schemes for procurement and distribution of food-grains etc.

Similar flexibility has to be introduced in the administrative and judicial set up so that **dispute settlement** at the local level is both timely and effective. Provision of **local courts** and giving judicial and magisterial powers to the officers of the revenue and developmental departments to effectively deal with local issues could also be considered. Left extremism and other endemic disturbances feeding on public discontent,

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require a **combination of efforts by the police, development and regulatory agencies**. An in-depth analysis of the history of left extremism reveals that there should be effective implementation of the provisions of the constitution and the laws and policies already adopted by the Government alongwith efficient delivery of services to remove the support base of extremists.

Capacity building among Government Personnel

Personnel management has been a **neglected aspect** of administration in tribal areas. Posting and deployment in such areas is usually looked upon as a **punishment by officers** who either work half-heartedly or remain absent for long periods from their place of duty. This underscores the need to identify those officers from the State, including from technical services, who view postings in these areas as a **challenging and satisfying experience** and have empathy and sensitivity to appreciate the problems of its people and the commitment to play a role in resolving them. State Governments should give such officers the benefit of being trained at national level institutions like the **LBS National Academy of Administration** to **professionally equip them** to serve in tribal areas.

Such officers could then bring their exposure and unique experience in the making of public policies, strategies and schemes for the development of these areas and the well being of its citizens. As an incentive it would be necessary to **reward these officers through better emoluments**, recognition of their services and retention of residential accommodation and education of their children in the State headquarters, if so desired. There is need for a **national policy** which could provide for reimbursing State Governments for the additional resources that may be required to make it attractive for officers to voluntarily opt for serving under difficult conditions in such areas.

At the **supervisory level and among technical personnel**, non-tribals tend to predominate. Equally well known is the fact that service in a tribal area (by non-tribals) is out of **compulsion** i.e. only till such time as a posting or alternative employment in non-tribal areas is not available. In the circumstances, it is not surprising that **absenteeism, dereliction of duty and poor work standards** are the norms in such areas, and this, in turn, contribute to disaffection of local populations. Measures such as formation of **regional cadres** of technical departments taken by the Government of Assam for areas under the **Bodoland Territorial Council** are a positive step for obviating the situation but with 'outsiders' dominating such cadres, the problem of **inadequate availability of willing personnel** is not fully addressed.

It also appears that the **apathy in the discharge of functions** resulting in poor delivery of services has a great deal to do with the relegation of oversight functions by administrative and 'line department' officials. While the malaise may be widespread, it has special relevance for areas affected by left extremism. There is a strong case for **"back to the basics"** in the matter of administrative **monitoring and supervision**. The system of periodic official inspections and review of organisational performance needs to be revitalised. It must be recognised that a major reason for such practices falling in disuse in 'disturbed areas' is the apprehension of senior functionaries about their **personal safety while on duty**. It would therefore be advisable to provide suitable security to senior administrative and technical officers while on tour, and thus

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should be taken into account in working out requirements for security forces in areas affected by serious violence.

Capacity building in local bodies

In an atmosphere of distrust of the petty bureaucracy and apparent inefficiency of the administrative apparatus in delivering services, one obvious solution is to **strengthen local self-governing institutions** to facilitate settlement of local problems. Enactment of the provisions of the Panchayats (Extension to the Scheduled Areas) Act, 1996 commonly known as **PESA**, is thus a welcome initiative for ensuring **grass-roots management** of community affairs. This enactment applies to areas under the **Fifth Schedule**, which coincidentally comprises many areas affected by violent left extremism. PESA brings the 'general body' of the village – the Gram Sabha – at the centre-stage of village affairs. It brings **common village assets** like water bodies, wastelands, and minor forest produce etc under the collective ownership of the village community with the power to approve implementation of development plans and to verify their implementation by ratifying, or not ratifying, decisions of the Panchayats. The community is likewise made the **custodian of traditions, culture and identity of the village** and is thus in a position to build consensus about various aspects of village life.

However, PESA is an „**indicative legislation**“; it lays down certain guidelines whose implementation depends on the States enacting legislations in their Panchayati Raj and other Acts. While many States have taken preliminary action on the lines suggested in PESA, there is a general impression that its implementation is, by and large, unsatisfactory. There is a need that the State Governments would also put in place **mechanisms to monitor** that the objectives set out therein are being met. It may be useful to **link performance** in this regard with allocation of untied grants for area development.

If the view that making people actively participate in their own development leads to greater public contentment and satisfaction is to be upheld, then the health of **cooperative institutions** in these areas is as important as a robust Panchayat system. **Corruption and inefficiency** in the excessively controlled and bureaucratic cooperative institutions was arguably responsible for **sowing the seeds of disaffection** among the tribals particularly in livelihood related societies concerned with minor forest produce, handlooms and handicrafts and fisheries etc. Subsequent **legal reforms in the cooperatives** carried out by many States, too, did not restore the health of the cooperatives in the affected areas. Apex level institutions like **TRIFED** have failed to provide the **right guidance and leadership** to the cooperatives in tribal areas. It is time that the needs of the cooperative sector in these areas are given attention on the analogy of PESA.

Capacity building in Civil Society Organisations

Opinions vary about the role of civil society organisations in bringing about peace in conflict situations particularly in cases of left extremism because many such organisations are alleged to have a **leftist ideological orientation** (without necessarily sharing the violent objectives of the extremists) and, in some cases, the 'NGO' may even be a 'front' for the extremists themselves. Votaries of the 'law and order

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approach' hold that such associations are no better than **proxies for militant extremists** with demoralisation of security forces as their primary aim and that they sidetrack the violence, killing and extortion by the extremists by raising the bogey of police persecution.

On the other hand, there is a growing realisation that such organisations have a major role to play as **interlocutors**, and that their vigil and critical alertness acts as a **bulwark against abuse of power** by the police and other state functionaries – in other words their activities strengthen the rule of law. While there may be **some „black sheep“** among these organisations, there is little doubt that they have the potential to act as a bridge between the extremists and the government and in educating the people about the futility of violence and preventing aggravation of the situation by ventilating public grievances within the legal-democratic framework.

CUTTING THE SOURCE OF FINANCES FOR NAXALITES

Like any other extremist movement the Naxalite movement also mobilizes funds which sustain them. Such mobilisation is in the form of **extortion from local people** and also from contractors executing various projects in the affected areas. Besides, funds are also raised through **forest and mine operations**. One way to ensure that development funds do not reach the extremists is by entrusting these works temporarily to organisations like the **Border Roads Organisation** and other governmental agencies which can execute these works directly. This is recommended as a purely **temporary measure** and not to stifle local private entrepreneurship.

Clamping down on the sources of funding for left extremists is another area that requires urgent attention. The extensive **contractor-transporter-extremist nexus** and its links with illegal mining and collection of forest produce in the entire region affected by left extremism yields a **huge volume of funds** for the extremists. An effective anti-extortion and **economic offences wing** that can curtail, if not totally dry up, such funding sources to extremists, has to be constituted.

Left extremism is posing serious challenges in different parts of the country through **exploiting the sense of deprivation** and consequent **discontent of marginalised sections** of community. Arguably, the Indian state and society have dealt with this malaise with a greater degree of sensitivity and with a slew of non-police methods in tandem with the conventional methods of law and order enforcement with greater success than in many societies. At the same time, the fact that the phenomenon of left extremism is prevalent– and is in fact, endemic in several pockets – indicates that **much more remains to be done**. It is necessary that the approach to the problem must be **balanced and multi-pronged** with a judicious mix of development, political and police methodologies.

OTHER SUGGESTIONS

Immediate Measures

- Create a **separate Ministry** for the development of the Naxalite affected States in line with Ministry of Development of North Eastern Region (DoNER) in order to oversee speedy development of the Naxalite affected areas

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- **Intervene with the State governments** not to adopt policies and practices which prolong and accentuate the Naxalite conflict;
- Take initiatives for holding **dialogues** between the State governments and the CPI (M).
- Declare **cease-fire** to facilitate holding of talks with the Naxalites ensuring that the naxals declare cease-fire too and stop targeting of the civilians & unarmed persons and use of explosives & mines.

Governance & Development Related Measures

The Naxalite movement is principally a political action for armed conquest of State power. Violence or the threat of violence by the armed cadre invariably accompanies the solutions the Naxalite movement offers to popular grievances. Therefore following steps should be taken:

- In Naxalite infected areas the first step is to **enforce land ceiling laws**. This has to be done despite the pressures of landlords, money lenders and influential castes. Several landless poor have been subsequently alienated from their lands. These lands should be restored to them.
- Acquisition of land has emerged as the single largest cause of involuntary displacement of tribals and turning them landless. **Indiscriminate land acquisition** should be stopped and land acquisition for public purpose should be confined to public welfare activities and matters of national security.
- Given that most of the rural poor, SCs and STs are dependent upon agriculture. This requires strengthening **subsidiary and supportive activities** in animal husbandry, fisheries, horticulture, sericulture and poultry.
- The PWG has become a well-armed force and will fight to try and retain power by targeting the Para military forces and police. Such perilous activities cannot be left to be routinely dealt with as ordinary crime or law and order problem. There is need for a **specialized national level agency**, to be constituted by a statute of Parliament which can tackle these federal crimes.
- There should be effective implementation of the existing constitutional provisions, protection of Civil Rights and **SC/ST (Prevention of Atrocities) Act laws**. National Commissions on SC & ST and NHRC should have to be given powers to make them effective in cases of violation of laws.
- **Usury and indebtedness** are the chief causes of acute distress and exploitation like land alienation and bonded labour. All debt liabilities of weaker sections should be liquidated.
- The **cooperative banking structure** which is the most accessible to the poorer sections should be urgently revamped and revitalized. There is also need for widespread provision of Grain Banks managed by Gram Sabhas in tribal areas. **NREGA** should be intensively implemented.
- **Forest produce** should be provided a protective market by fixing minimum support price for various commodities, upgradation of traditional haats, and provision of modern storage facilities.
- The Scheduled Tribes and Other Traditional Forest Dwellers (**Recognition of Forest Rights) Act, 2006** is a very significant step in recognizing and vesting the forest rights of tribals. This Act needs to be strictly operationalised in letter and spirit.

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- Programme should be started to **identify CPRs**, removing encroachment particularly by the rich and restore their productivity through afforestation, pasteurization, rainwater-harvesting, etc.
- Disparities in availability of physical, developmental and social **infrastructure** should be removed by speedy creation of infrastructure in Naxal-affected districts.
- Mobilizing the **support of the people** is also absolutely essential to weaken the support base of the Naxals. Authorities should encourage civil society groups, having knowledge of, and sympathy with, local tribals in assisting for wider participation of people in implementation of the strategy.
- The **law enforcement machinery** in the affected areas would need to be strengthened. Some measures could be: additional police stations/outposts in the affected areas; filling up the police vacancies and improving the police-people ratio; sophisticated weapons for the police; personnel to be given training in counter-insurgency including protection of human rights etc.
- All the **central and state schemes** should build in enough flexibility to allow panchayat bodies to reshape them to suit their objective conditions. Panchayats at three tiers should have powers and authority to hold officials accountable for the subjects devolved to panchayats. Similarly, they should have powers to review performance and working of all departments in their areas.
- One major deficiency of existing administrative arrangements is the absence of a Justice Administration system in these areas. In this regard **Nyaya Panchayat Law** should be enacted by the Centre with enabling provisions for the states to adopt. Strengthening and reorientation of the law enforcement apparatus is a necessity to ensure justice and peace for the tribals.

Naxalism poses a major challenge to the country. The approach to the Naxalites problems needs a blend of firm but sophisticated, handling of Naxalites violence with sensitive handling of the developmental aspects. If Governments both Central and States look after the issue more seriously and take urgent measures then we can definitely root out this malaise from the country. The **success of Andhra Pradesh** in containing the Naxalite problem is not merely due to the military one, but as a result of comprehensive strategy encompassing military tactics supported by a successful surrender and rehabilitation package. This success should be replicated in other naxal areas.

MONEY-LAUNDERING AND ITS PREVENTION MEASURES AGAINST FINANCING OF TERRORISM

Terrorist activities in most cases require **substantial financial support**. Such activities generally involve the **propagation of an ideology** advocating militant action to achieve their goals, increasing the number of devoted followers willing to carry out militant action in furtherance of such goals, acquisition of and training in use of arms and explosives, planning and execution of such militant action etc. All these necessarily require significant funding. Apart from the **proceeds of illegal operations**, such funding could be sourced even from the **proceeds of lawful activities**. Supporters of a militant ideology could well make financial contributions to terrorist organizations from their known sources of income. Such contributions could also be made to some **non-profit or charitable institutions** acting as a front for terrorist organizations, knowingly or un-knowingly.

Funds may also be provided to such front organizations by **laundering the proceeds of crime**. In fact, terrorist organizations could also finance their activities by either resorting to or working in concert with **cartels involved in drug trafficking**, smuggling etc. – without having to resort to money-laundering per se. Funding could also involve **counterfeiting of currency**. In all the scenarios mentioned above, the end result is that money reaches the persons involved in carrying out terrorist acts. This brings into focus the crucial issue of transfer of funds – both **within and without the national boundaries**. International **organized crime** makes use of a wide range of methods and **networking to transfer funds** with a view to launder the proceeds of crime. Many of these methods are utilized by terrorist organizations in order to transfer funds required for financing their activities.

Money laundering is the criminal practice of filtering ill-gotten gains or –dirty money through a series of transactions, so that the funds are –cleaned to look like proceeds from legal activities. Money laundering is driven by criminal activities and conceals the true source, ownership, or use of funds. The **International Monetary Fund** has stated that the aggregate size of money laundering in the world could be somewhere between **2 and 5 percent of the world's gross domestic product**.

Money Laundering has a **close nexus with organised crime**. Money Launderers amass enormous profits through drug trafficking, international frauds, arms dealing etc. Cash transactions are predominantly used for Money Laundering as they facilitate the concealment of the true ownership and origin of money. Criminal activities such as drug trafficking acquire an air of anonymity through cash transactions.

The most common types of criminals who need to launder money are **drug traffickers, embezzlers, corrupt politicians and public officials, mobsters, terrorists and con artists**. Drug traffickers are in serious need of good laundering systems because they deal almost exclusively in cash, which causes all sorts of logistics problems. One important aspect of money laundering is the tendency and need for perpetrators to operate **cross border schemes** for the purpose of concealment and/ or

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to take advantage of the uneven developments in the national anti money laundering regimes.

Banks and financial institutions are vulnerable from the Money Laundering point of view since criminal proceeds can enter banks in the form of large cash deposits. Bank officials therefore need to exercise constant vigilance in opening of accounts with large cash deposits and in checking suspicious transactions.

In India money laundering is popularly known as Hawala transactions. It gained popularity during early 1990's when many of the politicians were caught in its net. Hawala is an alternative or parallel remittance system. The Hawala Mechanism facilitated the conversion of money from black into white. **"Hawala" is an Arabic word meaning the transfer of money** or information between two persons **using a third person.** The system dates to the Arabic traders as a means of avoiding robbery. It predates western banking by several centuries.

Apart from using the facilities provided by **international trade**, such organizations also take recourse to **bulk cash smuggling** and use of **informal channels of transfer of money (like hawala)**. This is the reason that internationally, there has been a tendency to **merge the anti-money laundering and counter-terrorist finance (AML/CTF)** regimes. However, **2 features distinguish the activities** related to money laundering operations with those related to financing of terrorist activities, which have a bearing on the nature of strategy to be adopted in a counter-terrorist finance regime. These are:

- a. In case of **money laundering**, the activity begins with the **generation of proceeds from unlawful activities/ crime** and ends with their **conversion into legal assets** (movable or immovable). On the other hand, financing of **terrorist activities** could be from legal or illegal funds and it culminates when it reaches the **perpetrators of a terrorist act**. Even if it involves money laundering activity in between, the **money trail** has to continue to its final destination. This widens the scope of investigation in cases involving terrorist finance.
- b. In the case of **money laundering**, even if the proceeds of unlawful activities/ crime get 'laundered', enforcement authorities could **undo the effect on the basis of post-facto investigation**. In case of **terrorist finance**, once the finance chain is completed and an act of terrorism has taken place, post facto investigation is limited to **generating evidence** leading to conviction of the perpetrators; loss of life and damage to property and public confidence is already done.

It follows from the above that the law enforcement and investigation regime has to be **wider in scope while dealing with terrorist finance** as compared to money laundering operations. Further, in dealing with financing of terrorist activities, the emphasis has to be more on **obstructing such activities** while in progress. The success and failure of a counter-terrorist finance regime would thus depend on the manner in which these two elements are incorporated in its strategy.

The **main planks of a strategy** to deal with the financial aspects of terrorist activities tend to involve:

- a. **Asset recovery** and obstruction powers
- b. **Legal penalties** against persons/ organizations involved in financing terrorism

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- c. Adoption of diligent customer identification programmes and standard record keeping procedures by **financial institutions/ agencies**
- d. Reporting of **suspicious financial activity** by individuals and institutions
- e. **Anti-money laundering measures**
- f. **Capacity building** and coordination mechanisms between agencies involved
- g. **International cooperation**

In the last decade, a **slew of measures has been taken in the US and UK** in their fight against terrorism. India too has taken many steps in this direction. We shall discuss these measures:

USA Congress has given the following findings regarding the money laundering:

- a. Money laundering provides the fuel that permits **transnational criminal enterprises** to conduct and expand their operations
- b. Money laundering and the defects in financial transparency are critical to the **financing of global terrorism**
- c. **Legitimate financial mechanisms** and banking relationships are subverted by the money launderers to move the proceeds of crime
- d. Certain national jurisdictions offer 'offshore' banking and related facilities which are designed to provide **anonymity**. Coupled with weak supervisory and enforcement regimes, these are suited to the movement of funds related to **narcotics trafficking, terrorism**, etc. They also pose challenges to tracking the trail of money.

METHODOLOGICAL PHASES OF MONEY LAUNDERING

The basic money laundering process has three steps:

- 1. Placement** - At this stage, the launderer inserts the dirty money into a legitimate financial institution. This is often in the form of cash bank deposits. This is the riskiest stage of the laundering process because large amounts of cash are pretty conspicuous, and banks are required to report high-value transactions.
- 2. Layering** - Layering involves sending the money through various financial transactions to change its form and make it difficult to follow. Layering may consist of several bank-to-bank transfers, wire transfers between different accounts in different names in different countries, making deposits and withdrawals to continually vary the amount of money in the accounts, changing the money's currency, and purchasing high-value items (boats, houses, cars, diamonds etc.) to change the form of the money. This is the most complex step in any laundering scheme, and it's all about making the original dirty money as hard to trace as possible.
- 3. Integration** - At the integration stage, the money re-enters the mainstream economy in legitimate-looking form -- it appears to come from a legal transaction. This may involve a final bank transfer into the account of a local business in which the launderer is "investing" in exchange for a cut of the profits. At this point, the criminal can use the money without getting caught. It's very difficult to catch a

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launderer during the integration stage if there is no documentation during the previous stages.

Following are the **various measures adopted all over the world for money laundering**, even though it is not exhaustive but it encompasses **some of the most widely used methods**.

- 1. Structuring deposits:** This method is also known as **smurfing**. In this method large amount of money is broken into smaller, less-suspicious amount.
- 2. Overseas banks underground/ alternative banking:** Money launderers often send money through various "offshore accounts" in countries that have bank secrecy laws, meaning that for all intents and purposes, these countries allow anonymous banking. A complex scheme can involve hundreds of bank transfers to and from offshore banks.
- 3. Shell companies:** These are fake companies that exist for no other reason than to launder money. They take in dirty money as "payment" for supposed goods or services but actually provide no goods or services; they simply create the appearance of legitimate transactions through fake invoices and balance sheets.
- 4. Investing in legitimate business:** Launderers sometimes place dirty money in otherwise legitimate businesses to clean it. They may use large business like brokerage firms or casinos that deal in so much money it's easy for the dirty stuff to blend in, or they may use small, cash-intensive businesses like bars, car washes, strip clubs or check-cashing stores.

OTHER EFFECTS OF MONEY LAUNDERING

- Ill-effects of money laundering are seen all over the world on almost all the sectors of life. More noticeable are economic effects which are on a broader scale. **Developing countries often bear the brunt** of modern money laundering because the governments are still in the process of establishing regulations for their newly privatized financial sectors. This makes them a prime target. In the 1990's, numerous banks in the developing **Baltic States** ended up with huge, widely rumored deposits of dirty money. Bank patrons proceeded to withdraw their own clean money for fear of losing it if the banks came under investigation and lost their insurance. The banks collapsed as a result.
- Other major issues facing world economies include errors in economic policy resulting from artificially inflated financial sectors. Massive influxes of dirty cash into particular areas of the economy that are desirable to money launderers create false demand, and officials act on this new demand by **adjusting economic policy**. When the laundering process reaches a certain point or if law enforcement officials start to show interest, all of that money will suddenly disappear without any predictable economic cause resulting in that **financial sector to fall apart**. Laundered money is usually untaxed, meaning the rest of us ultimately have to make up the **loss in tax revenue**.

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- The **negative economic effects** of money laundering on **economic development** are difficult to quantify. It is clear that such activity damages the financial-sector institutions that are critical to economic growth, **reduces productivity** in the economy's real sector by **diverting resources** and **encouraging crime and corruption**, which slow economic growth, and can distort the economy's external sector – international trade and capital flows – to the detriment of long-term economic development. Money laundering also **facilitates crime and corruption** within developing economies, which is the **antithesis of sustainable economic growth**. Money laundering reduces the cost of doing business for the criminal element, thereby **increasing the level of crime**.
- Money laundering can also be associated with **significant distortions** to a country's imports and exports. On the import side, criminal elements often use illicit proceeds to purchase imported luxury goods, either with laundered funds or as part of the process of laundering such funds. Such imports do not generate domestic economic activity or employment, and in some cases can artificially depress domestic prices, thus **reducing the profitability of domestic enterprises**.

Infamous Indian case involved that of Ketan parikh who brought the stock market to fall and many Indian politicians who received kickbacks for performing their executive functions through Hawala channels. The Hawala Mechanism left virtually no paper trail, which would attract investigations. The profits generated from Hawala were surreptitiously invested in real estate, gilt edged securities etc., to launder them. The list is unending and there is dire need to control these forces.

ANTI MONEY-LAUNDERING MEASURES & DUE DILIGENCE IN FINANCIAL SYSTEM

A. INDIA

The provisions related to money laundering are contained in the Prevention of Money-Laundering Act, 2002 (**POMLA**) as amended by the **Prevention of Money-Laundering (Amendment) Act, 2005**. As per POMLA, money-laundering has been defined as: —Whosoever **directly or indirectly** attempts to indulge or knowingly assists or knowingly is a party or is actually involved in any process or activity connected with the **proceeds of crime** and projecting it as untainted property shall be guilty of offence of money-laundering.

Thus, money-laundering is confined to **activities/ offences connected with „proceeds of crime“**. 'Proceeds of crime' has been defined to mean any **property derived** or obtained, directly or indirectly, by any person as a result of criminal activity relating to a **„scheduled offence“** or the value of any such property. 'Scheduled offence' has been defined to mean the **offences specified under Part A of the Schedule to the Act** or those offences specified under Part B of the Schedule to the Act, if the total value involved in such offences is 30 lakh rupees or more.

Money-laundering will be an offence under the Act **only if it relates to any activity connected with the proceeds of crime**. Transactions not related to these scheduled crimes will be beyond the purview of the Act. Further, such activity connected with the proceeds of crime should be projected as **untainted property** to

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come under the purview of this Act. Although 'property' has been defined in the Act, the term 'untainted' has been left open for interpretation. It is apparent that the effectiveness of this Act is dependent on the **inclusions and exclusions in the Schedule to the Act.**

The Schedule **contains certain offences** under the Indian Penal Code, NDPS Act, 1985, Arms Act, 1959; Wildlife (Protection) Act, 1972; Immoral Traffic (Prevention) Act, 1956 and The Prevention of Corruption Act, 1988. A glance at the **offences listed in the Schedule** reveals that offences related to **organised crime** and racketeering; terrorism, including terrorist financing; **trafficking** in human beings; illicit trafficking in stolen and other goods; **fraud**, especially financial frauds; **counterfeiting** and piracy of goods; **smuggling** and insider trading and capital market manipulations etc. are **not listed therein**. This **limits the effectiveness of the Act** as far as dealing with complex money laundering and terrorist financing operations is concerned.

Even the offences mentioned in the Schedule have various **short-comings in the present scope** of the application of the law. The Schedule leaves certain provisions of **NDPS Act** which deals with punishment for contravention in relation to manufacture, possession, sale, purchase, transport, interstate trade or use of „**manufactured drug**“ or any preparation thereof. It may be mentioned here that this is **one of the major areas of criminal activities** related to offences under the NDPS Act attracting punishment in the form of rigorous imprisonment for a term not less than 10 years.

Similarly, the Schedule conspicuously leaves certain offences contained in **Immoral Traffic (Prevention) Act, 1956** which relate to keeping a brothel and living on the **earnings of prostitution**. The omission of these from the purview of the POMLA removes the proceeds of crime related to this area from the pale of money-laundering legislation. It also leaves out the certain provisions of **Prevention of Corruption Act, 1988** which pertain to **criminal misconduct by public servants**. The provisions therein cover cases of habitual offence and more importantly, cases of 'property disproportionate to known sources of income'.

Apart from the lacunae in the scope and application of the law in the present Act, there are also some **procedural enforcement issues** which could impinge on the overall effectiveness of the Act. These are as under:

1. **Attachment of property involved in money-laundering:** Act empowers the appropriate authority to provisionally attach property which he has the reason to believe are related to proceeds of crime. However the Act makes it mandatory that no such action for attachment of a property can be initiated **until the offence is registered with police, investigation** has been completed by the competent authority and a report to that effect has been made to the **Magistrate**.
2. **Search and Seizure etc.:** Act empowers the appropriate authority to carry out search and seizure proceedings if he has reason to believe that any person has committed an act, which constitutes money-laundering or is in possession of proceeds of the crime or records related to money-laundering. But the proviso to this Section lays down the **same pre-conditions** as mentioned above.

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3. Waiting for the investigation to be completed by the police officer and filing of the report by him could provide ample **opportunities for obliterating the money laundering trail**, destruction of evidence, movement of assets etc. Thus, both these proceedings will **remain non-starters** until and unless a complaint has been lodged with the respective authorities and a report has been submitted to the Magistrate. There is a case for **advancement of the stage** at which the search & seizure action or attachment of property could be undertaken under the POMLA, especially in cases which may have wider ramifications. Nonetheless, while allowing for the same, adequate safeguards may also be provided in the Act in order to **reduce the scope for any possible misuse**.
4. Once the proceedings under the POMLA have been initiated, the appropriate authorities are required to **file a complaint before the adjudicating authority** within a period of 30 days. The adjudicating authority will then decide whether such property is involved in money-laundering. If it confirms such attachment, then such attachment or retention of the seized property or record shall - (a) continue during the **pendency of the proceedings** relating to any scheduled offence before a court; and (b) **become final** after the guilt of the person is proved in the trial court and order of such trial court becomes final. The order of attachment of any property or retention of the seized property or record will **become final only after the guilt of the person is proved** in the trial court and the order of such trial court becomes final.

Investigation of Money Laundering Offences

The Prevention of Money Laundering Act incorporates **2 sets of measures** to counter money laundering: (i) it describes the **power and authority** available with the officers enforcing the law; and (ii) it also provides for a transaction **reporting regime** which is administered by a separate financial intelligence unit. The Directorate of Enforcement is the law **enforcing agency** in the case of POMLA. It draws its strength from officers with proven investigative and related skills from various Services, for example the Income-tax, Customs and Police, etc. through an **objective selection mechanism** for all officers above the rank of Deputy Director. The **present composition and structure** of the Directorate of Enforcement is sound but there is a need to strengthen the institutional **coordination mechanisms** between the Directorate of Enforcement and other intelligence collecting and coordinating agencies.

Financial Intelligence Unit

POMLA created the **reporting regime** with regard to financial transactions as envisaged in the Act through the establishment of the Indian **Financial Intelligence Unit** (FIU-IND). The regulations include **maintenance of record** of prescribed transactions, furnishing information to FIU-IND, and verification of clients. **Every reporting entity** is required to furnish to FIU-IND, inter alia, **monthly information** relating to **cash transactions of value of rupees 10 lakhs** or its equivalent in foreign currency; information on transactions which appear to be **complex** or which raise the **suspicion** of involving proceeds of crime etc. FIU-IND **analyses these reports** and **disseminates the information** to appropriate intelligence agencies.

The recipients of such information are the Ministry of Home Affairs,

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Research & Analysis Wing (RAW), Intelligence Bureau (IB), National Security Council Secretariat, Central Board of Direct Taxes, Central Board of Excise & Customs, Directorate of Enforcement, Narcotics Control Bureau, Central Bureau of Investigation, Reserve Bank of India, Securities and Exchange Board of India and Insurance Regulatory Development Authority. Presently, **all banking companies** including private foreign banks, co-operative banks, RRBs, **financial institutions** including insurance companies, hire-purchase companies, chit funds, non-banking financial companies and intermediaries **constitute a reporting entity**. The reporting regime **needs to be extended to high risk sectors** such as real-estate as is the case in the UK. As the volume of transactions reported would see a continuous growth accompanied by an increase in their complexity, the FIU-IND would have to be **strengthened organizationally** to meet challenges.

Co-ordination

Apart from the specific inputs provided by FIU-IND on transactions suspected of being related to money laundering, the **main forum for co-ordination and co-operation** among various agencies dealing with economic offences available to the Directorate of Enforcement is the **Regional Economic Intelligence Councils (REICs)**. The REICs, constituted in **1996**, are the nodal regional agencies for ensuring operational coordination amongst different enforcement and investigation agencies dealing with **economic offences** in their respective regions. These REICs are located at 18 regional centres throughout the country and consist of **designated officers** of CBDT, CBEC, CBI, ED, heads of related agencies of the Union and State Governments in the region, RBI, SBI, Registrar of Companies, etc. The REICs not only share **information related to tax matters** but also **cover all areas of economic intelligence** focusing on real time dissemination of information.

The functioning of the REICs is coordinated by the **Central Economic Intelligence Bureau (CEIB)** which is under the administrative control of the Department of Revenue, Ministry of Finance. The CEIB acts as the **nodal agency for economic intelligence**. As the Directorate of Enforcement is a member of the REIC, it would be useful if the platform provided by them is also utilized to coordinate among agencies in cases which are suspected to be linked with money laundering. Further, owing to the **complexity of cases involved**, it would also be useful if the FIU-IND, apart from disseminating agency specific information, furnishes **overall region-centric information** to the CEIB for disseminating it to the respective REICs with a view to expanding the information regime.

PREVENTION OF MONEY LAUNDERING (AMENDMENT) BILL, (POMLA) 2009

Parliament has adopted the Prevention of Money laundering (Amendment) Bill, 2009. It aims at combating **money laundering, terror financing and cross border economic offences**. In addition, it would introduce tougher sanctions for those convicted of **insider trading** and market abuse. It also in cross a new category of offences, which have cross border implications.

Under the bill, the **enforcement Directorate** will be empowered to search the premises immediately after the offence is committed and the police has filed a report under the Cr. P.C. **Financial intermediaries** like money changers, money

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transfer service providers such as Western Union and international Payment gateways including Visa and Master Card have also been brought under the ambit of the POMLA. The provisions will also check the misuse of the **“proceeds of crime”**, be. It from the sale of banned narcotic substances or breach of the Unlawful Activities (Prevention) Act.

The passage of the bill will enable India's entry into the Financial **Action Task Force (FATF)**, an inter-governmental body that has the mandate to combat money laundering and terrorist financing. The period of provisional **attachment of property** will be increased from 90 to 120 days. Bill will safeguard against harassment of **innocent persons** who may have unknowingly dealt in proceeds of crime. After the amendments, only a person who directly or indirectly attempts to indulge or knowingly assists or is actually involved in any activity concerned with the proceeds of crime shall be guilty of the offence of money laundering. Money laundering offences will fall, under **two categories**.

1. All transactions in proceeds of offences against the state and those involving narcotics are in the first category, where there is no threshold limit for attracting the provisions of the anti-money laundering law.
2. In the second category are the proceeds from other crimes, where there will be a threshold limit of Rs 30 lakh.

The **money laundering authority** and subordinate offices will be set up to administer the law. The officials of the authority can seize, undertake searches and attach properties of persons involved in money laundering and confiscate the proceeds of crime safeguard against misuse. The **officials will be subject to prosecution** in case of **“motivated searches”**, but it will require explicit permission from the government. Unlike the foreign exchange management act, which is a corollary place of legislation but mostly provides for compounding of offences and fines, the money laundering prevention law provides for criminal prosecution.

B. THE USA

Before September 11, 2001, US law lays stress on **financial transactions involved in promoting specified unlawful activity**; perpetrating tax evasion; concealing the nature, location, source, ownership or control of proceeds of specified unlawful activity; avoiding transaction reporting requirements under different laws; actual transportation, transmission or transfer of instruments or funds from or to the United States as related to specific unlawful activities and property transactions for the same purpose.

After September 11, 2001, the **“Uniting and Strengthening America by Providing Appropriate Tools Required to Intercept and Obstruct Terrorism (USA PATRIOT) Act of 2001”** was enacted. This significant piece of legislation contains a number of provisions related to **financial transactions and terrorist activities**. Some of these are described here:

1. **Interception of wire, oral and electronic communications relating to terrorism**: Law enforcement authorities may intercept wire, oral or electronic communications under a **judicially supervised procedure**. However, this authority is only available in connection with the investigations of **specifically designated**

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serious crimes. These include: (a) engaging in financial transactions with the government of a country which is designated as **country supporting international terrorism** and (b) providing any kind material support to terrorists or terrorist organizations.

2. Special measures targeted towards international primary money laundering issues:

- a. The Secretary of Treasury is authorized to require domestic financial institutions and agencies to take „**special measures**“ upon something of primary money laundering concern.
- b. Every financial institution with a private banking for a foreign person or bank to establish **controls to detect** and report money laundering.
- c. Prohibits banks operating in the US and others from maintaining correspondent accounts for **foreign shell banks**.
- d. It includes **bribery of a public official** etc. to the list of offences under foreign law
- e. It requires **minimum standards** to be prescribed for financial institutions to identify their customers.

Thus, the USA PATRIOT Act, 2001 is basically an **exercise in capacity building** in order to create an **information-rich environment** enabling the law enforcement agencies to effectively **trace and obstruct terrorist finance** and protect the financial systems from money laundering and terrorist abuse. Thus, the focus is now on protecting the financial system from abuse through **customer identification programmes**, maintenance of records by financial institutions and reporting of suspicious transactions to Financial Crimes Enforcement Network (**FinCEN**). The Federal Bureau of Investigation (**FBI**), Immigration and Customs Enforcement, Internal Revenue Service-Criminal Investigation and Drug Enforcement Authority are the **main US agencies** involved in the fight against money laundering.

C. The UK

The United Kingdom has also put in place a sound anti-money laundering system. The **Proceeds of Crime Act 2002 (POCA)** provides for a **single set of money laundering offences**, applicable throughout the UK to proceeds of all crimes. Thus, law enforcement agencies no longer need to show that illicit money has been derived from one particular kind of crime. Some of the offences which deals with money laundering, are as follows:

- a. **Concealing etc.:** A person commits an offence if he conceals, disguises, converts, removes or transfers criminal property. It includes concealing or disguising its **nature, source, location, disposition**, movement or ownership or any rights with respect to it.
- b. **Arrangements:** A person commits an offence if he enters into an arrangement which he knows or suspects facilitates the **acquisition, retention, use or control** of criminal property by or on behalf of another person.
- c. **Acquisition, use and possession:** A person commits an offence if he acquires, uses or has possession of criminal property.

With one stroke, POCA opens up **new legal avenues to prosecute** those

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associated with criminal finance and to deprive them of any benefit they might enjoy from criminal assets. It has been claimed that POCA delivers one of the world's most powerful legal tools against money laundering.

The Money Laundering Regulations 2007 provides that **due diligence measures** be undertaken in the case of **customer identification**; record-keeping, procedures and training; supervision and registration of high value dealers, money service businesses and trusts or company service providers; etc. A very **wide spectrum of service providers** is covered under these Regulations. The information is to be provided to the **UK FIU**, which in turn analyses the information and makes it available to law enforcement agencies. The FIU also has a specialized **Terrorist Finance Team**.

Further, in case of persons convicted for certain serious offences, the Court may make a Financial Reporting Order under the Serious Crime and Police Act which requires **continuous disclosure of financial records** provided the court is satisfied that the **risk of the offender** committing another such offence is 'sufficiently high'. POCA also contains provisions for making **confiscation orders** in cases where the offender has been convicted under any other law. Under these orders, the offender is required to **pay back the value of the benefit** derived from a given crime.

MEASURES TO BLOCK THE FLOW OF FUNDS FOR FINANCING TERRORIST ACTIVITIES

While an effective money laundering regime is an essential element of the fight against terrorist finance, certain **additional measures** are required to prevent financing of terrorist activities. Steps taken in this connection are detailed below.

A. INDIA

Making terrorist finance an offence

- 1. TADA:** Under TADA (Terrorist and Disruptive Activities (Prevention) Act, 1987), holding **property derived or obtained from any terrorist activity** or acquiring them through terrorist funds was an offence. The Act also provided for **seizure** of such property. It empowered the investigating officer to seize or attach any property about which he has reasons to believe that it is derived or obtained from the commission of any terrorist act under investigation, albeit with the **prior approval of the Superintendent of Police**. However, he was also required to duly inform the **Designated Court** within 48 hours of such attachment for confirmation or revoking of the order. The Designated Court was empowered to **order forfeiture** of such properties in the event of conviction.
- 2. POTA:** Under POTA also, holding property derived or obtained from any terrorist activity or acquiring them through terrorist funds was an offence. The **Prevention of Terrorism Act, 2002** (POTA) also included the phrase **„act of raising funds intended for the purpose of terrorism“** in the definition of the term 'a terrorist act' itself. POTA also made the holding of proceeds of terrorism illegal and provided that such proceeds -whether held by a terrorist or by any other person and whether or not such person is prosecuted or convicted under this Act, shall be **liable to be**

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forfeited to the Central Government or the State Government, as the case may be...l. Further, **fund raising for a terrorist organization** was also made an offence. This included inviting others to provide money or property and receiving money or property with the intention of using it or having reasonable cause to suspect that it may be used, for the purposes of terrorism and providing money or property knowing or having reasonable cause to suspect that it may be used for the purpose of terrorism.

It authorized an officer (not below the rank of Superintendent of Police) investigating an offence committed under this Act to **seize or attach any property representing the proceeds of terrorism**. However, prior approval in this case was to be obtained from the **Director General of Police** of the State Government before making the order. This authority extended to seizure or attachment of any property which is being used or is intended to be used for the purpose of any organization declared as a **terrorist organization** for the purposes of the Act.

Further, the investigating officer had the power to **seize and detain cash, including postal orders, traveler's cheques, banker's drafts** and other specified monetary instruments, if had reasons to suspect that it was intended to be used for the purposes of terrorism or it formed a part of the resources of a terrorist organization. As in the case of TADA, the investigating officer was required to inform the **Designated Authority within 48 hours**, who had the authority to confirm or revoke the order. It empowered the **Special Court** to pass an order regarding forfeiture of such property or otherwise. The Special Court was also empowered to **order the attachment of movable and immovable property** belonging to a person accused of any offence under POTA during the period of the trial.

- 3. ULCAA:** The **Unlawful Activities (Prevention) Amendment Act, 2004** also provides for punishment for knowingly holding a property derived or obtained from the commission of a terrorist act or acquired through terrorist funds. Like POTA, this Act also **prohibits the possession of any proceeds of terrorism** and provides for forfeiture of such proceeds. Besides, raising funds for a terrorist organization has also been made an offence.

The Investigating Officer is authorized to **seize or attach property representing the proceeds of terrorism** with the prior approval of the **Director General of Police** of the State in which such properties are situated. He is required to duly inform the **Designated Authority within 48 hours** of the seizure or attachment who in turn is empowered to confirm or revoke the same. The Investigating Officer is also authorized to seize and **detain any cash** to which the Chapter on 'Forfeiture of Proceeds of Crime' applies including traveler's cheques and banker's drafts etc. if they are related to terrorism or a terrorist organization. The **forfeiture of such proceeds is to be ordered by a Court of law**. The Court is also authorized to order attachment of properties of an accused.

Blocking the channels of financing terrorist activities

Owing to the fact that carrying out of any terrorist act would necessarily involve financial backing, any strategy to **counter financing of terrorism** should not only contain measures regarding investigation and prosecution of the offence after the

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commission of any terrorist act, but also measures providing legal and institutional basis to **gathering of intelligence/ information** leading to carrying out of investigations and **blocking of funds and material support** essential for the commissioning of such acts. In other words, apart from making the raising of funds for terrorism an offence, focus has to be on **prevention of such acts also**.

For example, in **the US**, one important development in the aftermath of the events of September 11, 2001 was the operationalisation of a **Terrorism Financing Operations Section** (TFOS) by the FBI which —works not only to identify and track financial transactions and links after a terrorist act has occurred; it exploits financial information to identify previously unknown terrorist cells, to recognize potential terrorist activity or planning, and to predict and prevent potential terrorist acts. In fact, to strengthen the efforts against terrorist financing activities, various investigation agencies in the US have separately created their own **anti-terrorist finance units** apart from increasing their participation in inter-agency efforts.

In **India** the provisions in the **ULPAA** (the anti-terrorist law in operation today) regarding **attachment and seizure of property** leading to forfeiture are applicable **only in the case of „proceeds of terrorism“**. Thus, attachment and forfeiture could only be in the case of properties which are derived or **obtained from the commission of any „terrorist act“** or are acquired by using funds traceable to a 'terrorist act'. This means that, except in the case of a 'terrorist organisation', the attachment and forfeiture provisions become **operative only after the „terrorist act“ has already been committed**.

In order to thwart the menace of terrorism and block the financing of terrorist activities, apart from the provisions already mentioned above, the **new legal provisions on terrorism** may also incorporate provisions regarding **freezing of assets, bank accounts, deposits etc.** while investigating the financial trail in cases where there is **reasonable suspicion** of their intended use in facilitating the commission of terrorist acts. Such actions may be undertaken by the investigating officer with the prior **approval of a designated authority** and subject to adequate safeguards.

Information/ intelligence on terrorist financing activities could be, and are actually being, generated by different intelligence and investigation agencies which are engaged in general or specific fields of activities. Financing of terrorist activities can be done through a multitude of modes, like: (a) value transfers through trading transactions, (b) hawala transactions, (c) currency smuggling, (d) counterfeiting, (e) defrauding financial institutions and the public at large, (f) false claim of exemptions, (g) false claim of refunds, (h) using non- profit organizations and charities as a vehicle (i) drug trafficking and narcotics trade, (j) investments and trading in capital and commodities markets (including foreign investments), (k) transactions in real estate etc.

Owing to the scope for their abuse, the investigation agencies having the authority to inquire into such activities as mentioned above, need to **devote more resources and manpower to identify suspected terrorist financing activities** so that information could be provided to intelligence agencies and authorities empowered to investigate terrorism cases. Another important source of information in this regard is the **financial reporting regime administered by FIU-IND**. This regime has been

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strengthened recently, in the sense that the **Prevention of Money-laundering Rules, 2005** has been amended in 2007 to include reporting to FIU-IND of any transaction which –gives rise to a reasonable ground of suspicion that it may involve financing of the activities relating to terrorismll.

Thus, the entities covered by the transaction reporting regime are now required to report such **specific suspicious transactions also**. However, for **concerted action on the financial leads** provided by information gathered by various sources, a **specialized cell** may be created in the proposed **National Counter-terrorism Centre** drawing upon expertise from the Union Ministries of Finance and Home Affairs and the Cabinet Secretariat. Further, different investigation agencies dealing with financial transactions may set-up **anti-terrorist finance cells** within their organizations to augment the efforts of intelligence agencies involved in counter-terrorism activities and facilitate coordination among agencies.

While financing of terrorist activity through ‘conventional’ methods such as currency smuggling, counterfeiting, drug-trafficking, frauds, use of informal channels of money transmission (‘hawala’) etc. continues, **methods such as online payments, trade-based money-laundering, abuse of charities, false claims etc.** have increasingly assumed centre-stage in the recent years. As investigation of transactions related to such activities requires **specialized investigation techniques** and skills, there is need to develop **multi-faceted investigation teams** in the agencies charged with the responsibility of conducting investigations under the anti-terrorist law. However, apart from the **present system of deputations** to such agencies, it would be useful to commission **dedicated teams** within these investigating agencies with a view to investigate financial aspects of specific cases/group of cases by inducting officers having specialization in different aspects of financial investigation for short periods. The objective would be **speedy and focused completion of the financial aspect of the investigation** in such cases.

B. THE USA

- 1. Making terrorist finance an offence:** US Code deals with offences related to ‘terrorism’, wherein engagement in financial transactions with the government of a country designated as a **country supporting international terrorism** has been made an offence. The provision of **material support or resources** or concealment of the nature, location, source or ownership of such material support knowing or intending their use in certain acts etc. is made an offence. Here ‘material support or resources’ has been defined to include any property, tangible or intangible, or service, including currency or monetary instruments or financial securities and financial services.
- 2. Asset freezing:** through an Executive Order of 2001, US government aimed at all individuals and institutions linked to global terrorism and **allows the US to freeze assets** subject to US jurisdiction and to **prohibit transactions by US persons** with any person or institution designated pursuant to the Executive Order based on their association with terrorists or terrorist organizations. It also authorizes the **imposition of blocking orders** on additional domestic or foreign institutions that support terrorism. This Order immediately **froze the financial assets situated in the US of 27 listed entities** and prohibited transactions of US citizens with these

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entities. The list has been subsequently expanded to include many more individuals, charitable organisations, businesses etc.

C. THE UK

- 1. Making terrorist finance an offence:** under the Terrorist Act, 2000 a person commits an offence if he **invites, receives or provides; uses or possesses;** enters into or becomes **concerned in an arrangement** as a result of which money or other property, and intends that it should be used, or has reasonable cause to suspect that it may be used, for the purposes of terrorism.
- 2. Asset freezing:** HM **Treasury** can direct freezing of assets and funds on grounds of suspected involvement with terrorism. This action is also taken in concert with other Governments. The **Anti-terrorism, Crime and Security Act 2001** provides for making of 'freezing orders' with respect to certain funds.

POVERTY

Different people think about poverty in different ways. Some people think that poverty is about being able to buy and sell but other people think about getting a fair share of education and health care or about being given respect, and having some influence over what happens in their life. Because of these differences it is useful to think about two main types of poverty - income poverty and non-income poverty.

Income poverty happens when a household takes in less than one US dollar per day. This means that people will not have enough food or medicine and they will have poor clothes and houses. Income poverty is due to people not having access to money or other assets. The best way to reduce income poverty is to encourage and support the development of effective businesses (small, medium and large) which make good use of our natural resources and talents to create wealth and jobs

Non income poverty happens when people may have a little bit of money but otherwise the quality of their life is not good. They do not have access to affordable social and physical services (schooling, health care, medicines, safe water, good sanitation, and good transport). The best way to reduce non-income poverty it to make sure that people have access to affordable and good quality social services and infrastructure, that they feel secure in their homes, that they trust the authorities and, if they are vulnerable, that there are safety net programmes to protect them.

:: Poverty is the **deprivation of common necessities** such as food, clothing, shelter and safe drinking water, all of which determine our quality of life. It may also include the **lack of access to opportunities** such as education and employment which aid the escape from poverty and/ or allow one to enjoy the respect of fellow citizens.

This is the World Bank's definition of poverty:

:: Poverty is an **income level below some minimum level necessary to meet basic needs**. This minimum level is usually called the **-poverty line**.

Definition agreed by the World Summit on Social Development in Copenhagen in 1995:

- Poverty is a condition characterized by **severe deprivation of basic human needs**, including food, safe drinking water, sanitation facilities, health, shelter, education and information. It depends not only on income but also on **access to services**.
- It includes a **lack of income and productive resources to ensure sustainable livelihoods**; hunger and malnutrition; ill health; limited or lack of access to education and other basic services; increased morbidity and mortality from illness; homelessness and inadequate housing; unsafe environments and social discrimination and exclusion.
- It is also characterized by **lack of participation in decision making** and in civil, social and cultural life.
- **It occurs in all countries**: as mass poverty in many developing countries, pockets of poverty amid wealth in developed countries, loss of livelihoods as a result of

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economic recession, sudden poverty as a result of disaster or conflict, the poverty of low-wage workers, and the utter destitution of people who fall outside family support systems, social institutions and safety nets.

Poverty has many dimensions

- A **material** dimension (food, clothing etc.)
- A **psychological** dimension (respect, self-esteem, trust, fear)
- A **political** dimension (power, representation) and
- A **social** dimension (education, health, work).

:: The **latter 2 dimensions** point to the fact that poverty, while often suffered alone and in solitude, requires **social cooperation** if it is to be eliminated. The **material, political and social dimensions can, to some extent, be** measured, which is necessary if we want to have an idea of the importance of the problem, its evolution over time, and the effectiveness and success of policy measures aimed to combat poverty. One can measure nutrition, housing, income, access to certain services, standard of living, quality of life etc.

:: The **psychological dimension** is much more difficult to measure, but no less important. This dimension also shows us that poverty is not just a matter of the current state one is in, and the resources one has or doesn't have. It is also about vulnerability, about the **future**, about trust and fear. Poverty means comparing yourself to others, feeling like a failure, humiliated, shameful etc. The **insufficiency of resources to meet basic needs**, such as nutrition, shelter, health and education can result in following **material symptoms of poverty**:

- Low **income or consumption** levels.
- Low average **calorie** intake levels.
- High infant **mortality** rates.
- Low **life expectancy** rates.
- High **illiteracy** rates.
- High **unemployment**.
- Widespread **diseases**, especially curable ones.
- Famine or high risk of **famine**.
- High rates of economic **migration**.

:: Apart from these absolute monetary and non-monetary kinds of poverty, there is also **relative poverty**: people compare themselves to others, mostly others who are relatively close by and better off. This inequality of income or consumption can result in the following **psychological symptoms of poverty**:

- Feelings of loss of dignity
- Low self-esteem
- Feelings of relative powerlessness
- Feelings of lack of participation in culture and politics
- Feelings of discrimination and resentment

A third kind of poverty is **vulnerability**, actual or perceived risk of future poverty. This vulnerability can result in following **psychological symptoms** of poverty:

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- Fear, stress
- Feelings of insecurity
- Irrational precaution measures
- Family planning decisions
- Migration

ANOTHER DIMENSION: ABSOLUTE POVERTY & RELATIVE POVERTY

:: Poverty is usually measured as either absolute or relative poverty (the latter being actually an index of **income inequality**). Absolute poverty refers to a **set standard** which is consistent over time and between countries. The World Bank defines extreme poverty as living on **less than US \$1.25 (PPP) per day**, and **moderate poverty** as **less than \$2 a day** (but note that a person or family with access to subsistence resources, e.g. subsistence farmers, may have a low cash income without a correspondingly low standard of living- they are not living "on" their cash income but using it as a top up). It estimates that "in 2010, 1.2 billion people had consumption levels below \$1 a day and 2.7 billion lived on less than \$2 a day".

:: **6 million children die of hunger every year** - 17,000 every day. **Selective Primary Health Care** has been shown to be one of the most efficient ways in which absolute poverty can be eradicated in comparison to Primary Health Care which has a target of treating diseases. **Disease prevention** is the focus of Selective Primary Health Care which puts this system on higher grounds in terms of preventing malnutrition and illness, thus putting an end to Absolute Poverty.

:: The **proportion of the** developing world's **population living in extreme economic poverty** fell from 28% in 1990 to 22% in 2012. Most of this improvement has occurred in East **and** South Asia. In East Asia the World Bank reported that "The poverty headcount rate at the \$2-a-day level is estimated to have fallen to about 25% (in 2012), down from 69% in 1990." In Sub-Saharan Africa extreme poverty went up from 41% in 1981 to 48.5% in 2010.

:: In the early 1990s some of the **transition economies of** Eastern Europe **and** Central Asia experienced a sharp drop in income. The collapse of the Soviet Union resulted in large declines in GDP per capita, of about 30 to 35% between 1990 and 1998. As a result poverty rates also increased although in subsequent years as per capita incomes recovered the poverty rate dropped from 31.4% of the population to 19.6%.

:: World Bank data shows that the percentage of the population living in households with **consumption or income per person below the poverty line** has decreased in each region of the world since 1990:

Region	1990	2002	2010
East Asia and Pacific	15.40%	12.33%	12.5%
Europe and Central Asia	3.60%	1.28%	0.7%
Latin America and the Caribbean	9.62%	9.08%	5.5%
Middle East and North Africa	2.08%	1.69%	2.4%
South Asia	35.04%	33.44%	31.0%
Sub-Saharan Africa	46.07%	42.63%	48.5%

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:: However, there are **various criticisms** of these measurements. Although "a clear trend decline in the percentage of people who are absolutely poor is evident ... with uneven progress across regions...the **developing world outside China and India has seen little or no sustained progress** in reducing the number of poor".

:: **The World Bank report "Global Economic Prospects"** predicts that in **2030** the number living on less than the equivalent of **\$1 a day will fall by half**, to about 550 million. Much of **Africa** will have difficulty keeping pace with the rest of the developing world and even if conditions there improve in absolute terms, the report warns, Africa in 2030 will be home to a larger proportion of the world's poorest people than it is today.

:: The reason for the faster economic growth in East Asia **and** South Asia is a result of their relative backwardness, in a phenomenon called the **convergence hypothesis** or the **conditional convergence hypothesis**. Because these economies began modernizing later than richer nations, they could benefit from simply adapting **technological advances** which enable higher levels of productivity that had been invented over centuries in richer nations.

RELATIVE POVERTY

:: Relative poverty views poverty as **socially defined and dependent on** social context, hence relative poverty is a **measure of income inequality**. Usually, relative poverty is measured as the percentage of population with income **less than some fixed proportion of median income**. There are several other different income inequality metrics, for example the Gini coefficient or the Theil Index.

:: Relative poverty measures are used as official poverty rates in several **developed countries**. As such these poverty statistics **measure inequality rather than material deprivation** or hardship. The measurements are usually based on a person's yearly income and frequently take no account of total wealth. The main poverty line used in the OECD and the European Union is based on "**economic distance**", a level of income set at 60% of the median household income.

:: **Ultra-poverty**, a term apparently coined by **Michael Lipton**, connotes being **amongst poorest of the poor in low-income countries**. Lipton defined ultra-poverty as receiving less than 80% of minimum caloric intake whilst spending more than 80% of income on food. Alternatively a 2007 report issued by **International Food Policy Research Institute** defined ultra-poverty as living on less than 54 cents per day. The depth of poverty should be measured. This **depth is the distance to the poverty line**. Just below the poverty line or way below makes a lot of difference.

MEASURES OF POVERTY

Not all of the kinds of poverty can be easily measured. Some perhaps cannot be measured at all. Even the apparently easy ones, such as infant mortality rates or income levels, can and do pose problems, such as the **availability of data** (poor countries often do not have the institutional resources to generate high quality statistics), international comparability of data, definitions of data etc. However, it

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is important to measure the levels of poverty and their evolution as good as we can. Only if we have data can we **judge the effectiveness of specific programs** to alleviate specific symptoms of poverty.

Poverty is **not just a philosophical problem** because depending on the definition of poverty we use, our measurements will be radically different (even with an identical definition, measurements will be different because of different measurement methods). Roughly **6 different parameters for measuring poverty** are used:

- insufficient **income**
- insufficient **consumption** spending
- insufficient **caloric** intake
- **food consumption spending** above a certain share of total spending
- certain **health indicators** such as stunting, malnutrition, infant mortality rates or life expectancy
- certain **education** indicators such as illiteracy

None of these parameters is ideal, although the first and second on the list are the most widely used. A few words about the advantages and disadvantages of each are as follows:

1 Income: e.g. **-\$1 a day** level, which is the **World Bank definition** of extreme poverty level; moderate poverty is less than \$2 a day; these levels are of course expressed in purchasing power parity.

:: In **developed countries**, income is a common definition because it's easy to measure. Most people in developed countries earn a salary or get their income from sources that are **easy to estimate** (interest payments, the value of houses, stock market returns etc.). They don't depend for their income on the climate, crop yields etc. Moreover, developed countries have **good tax data** which can be used to calculate incomes.

:: In **developing countries**, however, income data tend to be underestimated because it's **difficult to value the income of farmers and shepherds**. Farmers' incomes fluctuate heavily with climate conditions, crop yields etc. Another disadvantage is that people are generally **reluctant to disclose their full income**. Some income may have been hidden from the **tax administration** or may have been earned from illegal activity such as **corruption**, smuggling, drug trade, prostitution, theft etc. For this reason, using income to estimate poverty means overestimating it.

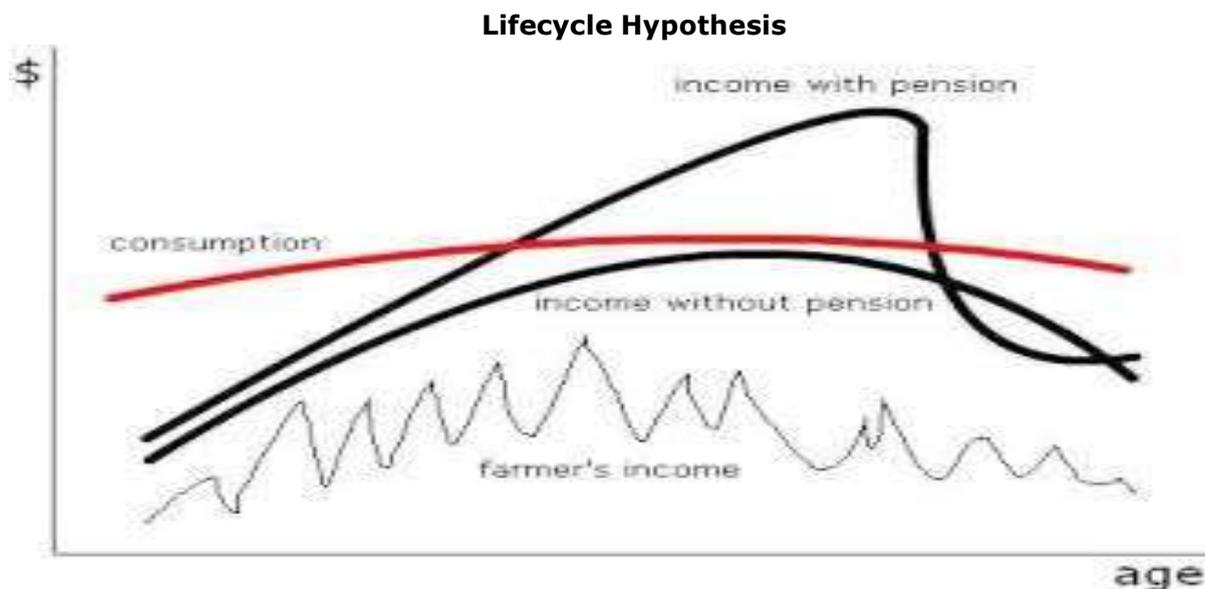
2 Gross Domestic Product (GDP, or total annual country income) per capita or per citizen is another measure of poverty. However, the problem with this measure is that it tells us about average and not how it is distributed over the spectrum. For example, in India, the people below poverty line are much below the average GDP per capita.

3 Consumption: The main advantage of using consumption rather than income to measure poverty is that consumption is **much more stable over the year and over a lifetime**. This is even truer in the case of farmers who depend on the weather for their income and hence have a more volatile income. As farmers are often relatively poor, this issue is all the more salient for poverty measurement. This

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is called the **lifecycle hypothesis** (shown in graph). Another advantage of using consumption is that people aren't as reticent to talk about it as they are about certain parts of their income.

:: However, consumption of goods like **durable goods and housing** is difficult to measure because it's difficult to value them. For example, if a household owns a house, it is difficult to estimate what it would cost to rent that particular house and add this to the total consumption of that household. Then the same has to be done for cars etc.



:: Another difficulty in measuring consumption is that in developing countries households **consume a lot of what they themselves produce** on the family farm. This as well is often difficult to value correctly. And finally, **different people have different consumption needs**, depending of their age, health, work etc. It's not clear how these different needs are taken into account when consumption is measured and used as an indicator of poverty.

- 4 **Calorie intake:** the problem with this is that **different people need different amounts** of calories (depending on their type of work, their age, health etc.), and that it isn't very easy to measure how many calories people actually consume. An average adult male has to eat food representing **approximately 2000-2500 calories** per day in order to sustain the human body.
- 5 **Food spending as a fraction of total spending:** here the problem is that if we say people who spend more than x% of their total spending on food are considered poor, we still have to factor in **relative food prices**.
- 6 **Stunting as an indicator of malnutrition and hence of poverty:** stunting (height for age) is a notoriously difficult thing to measure.
- 7 Another measure of poverty is work out the **parameters related to education** such number of years in education, Literacy levels, drop-out rates etc.

:: Another issue with poverty measurement is that people may have comparable incomes or even consumption patterns, but they may face very **different social or environmental conditions**: an annual income of \$500 may be adequate for people living in a rural environment with a temperate climate where housing is cheap,

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heating isn't necessary and subsistence farming is relatively easy. But the same income can mean deep poverty for a family living in a crowded city on the edge of a desert. The presence or absence of public goods such as quality schools, roads, running water and electricity also makes a lot of difference, but poverty measurement usually doesn't take these goods into account.

:: For other types of **poverty such as income differences**, traditionally used measure is the **Gini coefficient** although most symptoms of this kind of poverty, as well as social, psychological poverty, are **intangible**. The difficulties of aggregating the different available measures, together with the difficulties of measuring other indicators, result in the **impossibility to establish a single, binary poverty indicator**, —are you poor or not?, yes or no type of indicator. As a result, many scientists and politicians use a simplified rule to establish poverty, for example the —1 \$ a day rule, of some other kind of poverty level expressed quantitatively. It is also important to measure the time frame of poverty, i.e. **incidental or chronic poverty**. This difference should be taken into account when devising policies.

POVERTY ESTIMATES IN INDIA

Poverty in India is still rampant, with the nation estimated to have a third of the world's poor, despite an impressive economic growth. **In 2011, World Bank stated, 32.7%** of the total Indian people fall below the international poverty line of US\$ 1.25 per day (PPP) while 68.7% live on less than US\$ 2 per day. According to 2010 data from the **United Nations Development Programme**, an estimated **37.2% of Indians** live below the country's national poverty line.

According to a **new Poverty Development Goals Report**, as many as 320 million people in India and China are expected to come out of extreme poverty in the next four years, while **India's poverty rate is projected to drop to 22% in 2015**. The report also indicates that in Southern Asia, however, only India, where the poverty rate is projected to fall from 51% in 1990 to about 22% in 2015, is on track to cut poverty in half by the 2015 target date.

The latest UNICEF data shows that **one in three malnourished children** worldwide are found **in India**, whilst 42 percent of the nation's children under five years of age are underweight. **The 2011 Global Hunger Index (GHI) Report** places India amongst the three countries where the GHI between 1996 and 2011 went up from 22.9 to 23.7, while 78 out of the 81 developing countries studied, including Pakistan, Nepal, Bangladesh, Vietnam, Kenya, Nigeria, Myanmar, Uganda, Zimbabwe and Malawi, succeeded in improving hunger condition.

:: According to the definition by **Planning Commission**, poverty line is drawn with an intake of **2400 calories in rural areas and 2100 calories in urban areas**. If a person is unable to get that much minimum level of calories, then he/ she is considered as being below poverty line. The Planning Commission in **March 2012** released the latest poverty estimates for the country showing a **decline in the incidence of poverty** by 7.3 per cent over the past 5 years and stating that anyone with a daily consumption expenditure of Rs. 28.35 and Rs. 22.42 in urban and rural areas respectively is above the poverty line.

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OTHER POVERTY ESTIMATES FOR INDIA

Estimates by **NCAER** (National Council of Applied Economic Research), show that **48% of the Indian households** earn more than ₹90,000 (US\$ 1,998) annually (or more than US\$ 3 PPP per person). According to NCAER, of the 222 million households in India, the absolutely poor households (annual incomes below ₹45,000) accounted for only 15.6 % of them or about 35 million (about 200 million Indians). Another 80 million households are in income levels of ₹45,000-90,000 per year. These numbers also are more or less **in line with the latest World Bank estimates** of the **-below-the-poverty-line** households that may total about 100 million (or about 456 million individuals).

Income inequality in India is increasing, with a Gini coefficient of 32.5 in 1999-2000. Although the Indian economy has grown steadily over the last two decades, its **growth has been uneven** when comparing different social groups, economic groups, geographic regions, and rural and urban areas. Between 1999 and 2008, the annualized growth rates for Gujarat (8.8%), Haryana (8.7%), or Delhi (7.4%) were much higher than for Bihar (5.1%), Uttar Pradesh (4.4%), or Madhya Pradesh (3.5%).

Poverty rates in **rural Orissa** (43%) and **rural Bihar** (41%) are among the world's most extreme. A study by the Oxford Poverty and Human Development Initiative using a Multi-dimensional Poverty Index (**MPI**) found that there were 645 million poor living under the MPI in India, 421 million of whom are concentrated in eight North India and East India states of Bihar, Chhattisgarh, Jharkhand, Madhya Pradesh, Orissa, Rajasthan, Uttar Pradesh and West Bengal. This number is higher than the 410 million poor living in the 26 poorest African nations.

A report by the state-run **National Commission for Enterprises in the Unorganised Sector** (NCEUS) found that 77% of Indians, or 836 million people, lived on less than 20 rupees (approximately US\$ 0.50 nominal; US\$ 2 PPP) per day. It is relevant to view poverty in India on a PPP basis as food etc. are purchased in Rupees.

According to a recently released **World Bank report**, India is on **track to meet its** poverty reduction **goals**. However by **2015**, an estimated **53 million people** will still live in extreme poverty and 23.6% of the population will still live under US\$ 1.25 per day. This number is expected to reduce to 20.3% or 268 million people by 2020. However, at the same time, the effects of the worldwide recession in 2009 have plunged 100 million more Indians into poverty than there were in 2004, increasing the effective poverty rate from 27.5% to 37.2%.

:: Despite this, India is sitting on **unused foreign aid of over ₹100,000 crore** (US\$ 22.2 billion) reflecting inadequate planning by ministries like urban development, water resources and energy, a report by Comptroller and Auditor General of India (CAG) has said. —unutilized committed external assistance was of the order of ₹ 1, 05,339 crore, the CAG said in its report tabled in Parliament in March 2011. In fact, the Indian government has **paid commitment charges** of ₹86.11 crore (US\$ 19.12 million) out of taxpayer-money in the form of penalty for **not timely utilizing the aid** approved by multilateral and bilateral lending agencies.

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PROBLEMS WITH EXISTING OFFICIAL POVERTY LINES

:: The existing all-India rural and urban official poverty lines were originally defined in terms of **Per Capita Total Consumer Expenditure** (PCTE) at 1973-74 market prices and **adjusted over time and across states** for changes in prices keeping unchanged the original 1973-74 rural and urban underlying all-India reference **Poverty Line Baskets** (PLB) of goods and services. These all-India rural and urban PLBs were derived for rural and urban areas separately, anchored in the per capita calorie norms of 2400 (rural) and 2100 (urban) per day.

:: However, they covered the consumption of all the goods and services incorporated in the rural and urban **reference poverty line baskets**. Three major criticisms of these poverty lines have been commonly aired. One, the **consumption patterns** underlying the rural and urban PLBs remained tied down to those observed more than three decades ago in 1973-74 and hence had become outdated. Two, **crude price adjustment** for prices was leading to implausible results such as proportion of total urban population below poverty line being higher than its rural counterpart in certain major states. Three, the earlier poverty lines assumed that **basic social services of health and education** would be supplied by the state and hence, although private expenditure on education and health was covered in the base year 1973-74, no account was taken of either the increase in the proportion of these in total expenditure over time or of their proper representation in available price indices.

CAUSES OF POVERTY IN INDIA

- **Caste system:** Dalits constitute the bulk of poor and unemployed. Casteism is still widespread in rural areas, and continues to segregate Dalits despite the steady rise and empowerment of the Dalits through social reforms and the implementation of reservations in employment and benefits. Caste explanations of poverty, however, fail to account for the urban/rural divide. However, using the **UN definition** of poverty, 65% of **rural forward castes** are below the poverty line.
- **British era: Jawaharlal Nehru** claimed "A significant fact which stands out is that those parts of India which have been longest under British rule are the poorest today." The Indian economy was purposely and severely de-industrialized, especially in the areas of textiles and metal-working, through colonial privatizations, regulations, tariffs on manufactured or refined Indian goods, taxes, and direct seizures.
- **India's economic policies:** In 1947, the **average annual income** in India was US\$ 439, compared with US\$ 619 for China. By 1999, the numbers were US\$ 1,818 and US\$ 3,259 respectively. Thus **India was left far behind due to its economic policies** especially the **License Raj** and the accompanying **red tape** that were required to set up and run business in India. The License Raj was a result of India's decision to have a planned economy, where all aspects of the economy are controlled by the state and licenses were given to a select few. **Corruption** flourished under this system. Up to 80 agencies had to be satisfied before a firm could be granted a license to produce and the state would decide what was produced, how much, at what price and what sources of capital were used.

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- **Over-reliance on agriculture:** There is a surplus of labour in agriculture. While services and industry have grown at double digit figures, agriculture growth rate has dropped from 4.8% to 2%. About 60% of the population depends on agriculture whereas the contribution of agriculture to the GDP is about 18%.
- **High population growth rate**, although demographers generally agree that this is a symptom rather than cause of poverty.
- High **Illiteracy** (about 35% of adult population)
- **Regional inequalities**

CAUSES OF RURAL POVERTY IN INDIA

- Rapid Population Growth & Excessive Population Pressure on Agriculture
- Lack of Capital
- Lack of Alternate Employment Opportunities Other than Agriculture
- Illiteracy & Child Marriage Tradition
- Regional Disparities
- Joint Family System
- Lack of proper implementation of PDS

CAUSES OF URBAN POVERTY INDIA

- Migration of Rural Youth towards Cities
- Lack of Vocational Education / Training
- Limited Job Opportunities of Employment in the Cities
- Rapid increase in Population
- Lack of Housing Facilities
- No proper Implementation of Public Distribution System

LIBERALIZATION POLICIES AND THEIR EFFECTS

:: **75% of poor are in rural India.** There is a viewpoint that holds that the **economic reforms** initiated in the early 1990s are **responsible for the collapse of rural economies and the agrarian crisis** currently underway. P Sainath describes that the **level of** inequality has risen to extraordinary levels, when at the same time; hunger in India has reached its highest level in decades. He also points out that rural economies across India have collapsed, or on the verge of collapse due to the neo-liberal policies of the government of India since the 1990s.

:: The **human cost of the "liberalization"** has been very high. The huge wave of **farm suicides** in Indian rural population from 1997 to 2007 totaled close to 200,000, according to official statistics. Commentators have faulted the policies pursued by the government which, according to Sainath, resulted in a very high portion of rural households getting into the **debt cycle**, resulting in a very high number of farm suicides.

:: Government policies encouraging farmers to **switch to cash crops**, in place of traditional food crops, has resulted in an extraordinary increase in farm input costs, while market forces determined the price of the cash crop. Sainath points out that a disproportionately large number of affected farm suicides have occurred with cash

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crops, because with food crops such as rice, even if the price falls, there is food left to survive on.

:: He also points out that **inequality** has reached one of the highest rates India has ever seen. During the time when **Public investment in agriculture** shrank to 2% of the GDP, the nation suffered the worst agrarian crisis in decades, the same time as India became the nation of **second highest number of dollar billionaires**. Sainath argues that Farm incomes have collapsed. Hunger has grown very fast. Non-farm employment has stagnated. Only the National Rural Employment Guarantee Act has brought some limited relief in recent times. Millions move towards towns and cities where, too, there are few jobs to be found.

SUCCESS OF EFFORTS TO ALLEVIATE POVERTY

Since the early 1950s, government has initiated, sustained, and refined various planning schemes to help the poor attain self sufficiency in food production. Probably the most important initiative has been the **supply of basic commodities**, particularly food at controlled prices, available throughout the country as poor spend about 80 percent of their income on food.

Eradication of poverty in India is generally only considered to be a **long-term goal**. Poverty alleviation is expected to make better progress in the next 50 years than in the past, as a **trickle-down effect of the growing middle class**. Increasing stress on education, reservation of seats in government jobs and the increasing empowerment of women and the economically weaker sections of society, are also expected to contribute to the alleviation of poverty. It is incorrect to say that all poverty reduction programmes have failed. The **growth of the middle class** (which was virtually non-existent when India became a free nation in August 1947) **indicates that economic prosperity** has indeed been very impressive in India, but the distribution of wealth is not at all even.

CONTROVERSY OVER EXTENT OF POVERTY REDUCTION

:: While **total overall poverty in India has declined**, the extent of poverty reduction is often debated. With the rapid economic growth that India is experiencing, it is likely that a significant fraction of the rural population will continue to migrate toward cities, making the issue of urban poverty more significant in the long run.

:: While **absolute poverty** may not have increased India remains at an **abysmal rank in the UN** Human Development Index. India in recent years remained at lowest position in the index compared to last 10 years. It can even be argued that the situation has become worse on **critical indicators of overall well-being** such as the number of people who are **undernourished** (India has the highest number of malnourished people, at 230 million), and the number of malnourished children (43% of India's children under 5 are underweight (BMI<18.5), the highest in the world) as of 2008.

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:: A study by the **McKinsey Global Institute** found that in 1985, 93% of the Indian population lived on a **household income of less than 90,000 rupees a year**, or about a dollar per person per day; by 2005 that proportion had been cut nearly in half, to 54%. More than 103 million people have moved out of desperate poverty in the course of one generation in urban and rural areas as well. They project that if India can achieve 7.3% annual growth over the next 20 years, 465 million more people will be lifted out of poverty. Contrary to popular perceptions, rural India has benefited from this growth: extreme rural poverty has declined from 94% in 1985 to 61% in 2005, and they project that it will drop to 26% by 2025. Report concludes that **India's economic reforms and the increased growth that has resulted have been the most successful anti-poverty programmes in the country.**

Persistence of malnutrition among children

:: The World Bank, citing estimates made by the World Health Organization, states that "About 49% of the world's underweight children, 34% of the world's stunted children and 46% of the world's wasted children, live in India." The World Bank also noted that "while poverty is often the underlying cause of malnutrition in children, the superior economic growth experienced by South Asian countries compared to those in Sub-Saharan Africa, has not translated into superior nutritional status for the South Asian child". A special commission to the **Supreme Court** has noted that the **child malnutrition rate in India is twice as great as sub-Saharan Africa.**

TENDULKAR COMMITTEE REPORT

:: There has been a growing concern on the official estimates of poverty. In view of this, **Planning Commission** set up an expert group under the chairmanship of **Suresh Tendulkar** to examine the issue and suggest a new poverty line and estimates. Following are the salient features of the proposed poverty lines:

- 1 The expert group has also taken a conscious decision to move away from anchoring the poverty lines to a **calorie intake norm** in view of the fact that calorie consumption calculated by converting the consumed quantities in the last 30 days as collected by NSS has not been found to be well correlated with the **nutritional outcomes** observed from other specialized surveys either over time or across space (i.e. between states or rural and urban areas).
- 2 NSSO has decided to shift to **Mixed Reference Period (MRP)** for all its consumption surveys in future, namely, **365-days for low frequency items** (clothing, footwear, durables, education and institutional health expenditure) and 30-days for all the remaining items. This change captures the household consumption expenditure of the poor households on low-frequency items of purchase more satisfactorily than the earlier 30-day recall period. The Expert Group decided to adopt the **MRP-based estimates** of consumption expenditure as the basis for future poverty lines as against previous practice of using **Uniform Reference Period** estimates of consumption expenditure.
- 3 The new poverty lines have been arrived at after assessing the adequacy of **private household expenditure on education and health**, while the earlier calorie-anchored poverty lines did not explicitly account for these.

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- 4 It may be noted that although those near the poverty line in urban areas continue to afford the original **calorie norm** of 2100 per capita per day, their actual observed calorie intake from 61st Round of NSS of is 1776 calories per capita. This actual intake is very close to the revised calorie intake norm of 1770 per capita per day currently recommended for India by the **Food and Agriculture Organization** (FAO). Actual observed calorie intake of those near the new poverty line in rural areas (1999 calories per capita) is higher than the FAO norm.
- 5 Separate allowance for private expenditure on **transport and conveyance** has been made in the recommended poverty lines. For **rent and conveyance**, actual expenditure share for these items were used to adjust the poverty line for each state.

ENTRENCHED FACTORS ASSOCIATED WITH POVERTY

- **Scarcity of basic needs:** Rise in the costs of living makes poor people less able to afford items. Poor people spend a greater portion of their budgets **on food** than richer people. As a result, poor households and those near the poverty threshold can be particularly vulnerable to increases in food prices.
- **Third World debt:** Third World debt plays a large part in international inequality **and poverty**. On average in 1999, \$128 billion was transferred from indebted industrializing countries to debt holding nations for **debt repayments**. The World Bank and the IMF, as primary holders of Third World debt, attach structural adjustment conditionalities to loans. These conditionalities generally push for economic liberalization, including reducing barriers to trade, elimination of state subsidies, Union busting, privatization of state assets and services etc. As a result of such policies, developing countries need to spend a large proportion of their budgets to repay foreign debt.
- **Barriers to opportunities:** lack of economic freedom inhibits entrepreneurship among the poor. New enterprises and foreign investment can be driven away by the results of **inefficient institutions**, notably corruption, weak rule of law and excessive bureaucratic burdens. Lack of financial services, as a result of restrictive regulations, such as the requirements for banking licenses, makes it hard for even smaller micro-savings programs to reach the poor. In India, businesses had to bribe government officials even for routine activities, which were, in effect, a tax on business. **Lack of opportunities** can further be caused by the failure of governments to provide essential infrastructure.
- **Colonial Histories:** One of the most important barriers to development in poor countries is lack of uniform, basic infrastructure, such as roads and means of communication. Some development scholars have identified colonial history as an important contributor to the current situation. In most countries with a history of colonization, the colonizers developed local economies to facilitate the expropriation of resources for their own economic growth and development.
- **Centralization of Power:** In many developing countries, political power is disproportionately centralized. Instead of having a network of political representatives distributed equally throughout society, in centralized systems of governance one major party, politician, or region is responsible for decision-making throughout the country. This often causes development problems. For example, in these situations politicians make decisions about places that they are unfamiliar with,

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lacking sufficient knowledge about the context to design effective and appropriate policies and programs.

- **Corruption:** Corruption often accompanies centralization of power, when leaders are not accountable to those they serve. Most directly, corruption inhibits development when leaders help themselves to money that would otherwise be used for development projects. In other cases, leaders reward political support by providing services to their followers.
- **Warfare:** Warfare contributes to more entrenched poverty by diverting scarce resources from fighting poverty to maintaining a military. Take, for example, the cases of Ethiopia and Eritrea. The most recent conflict over borders between the two countries erupted into war when both countries faced severe food shortages due to drought.
- **Environmental degradation:** Awareness and concern about environmental degradation have grown around the world over the last few decades, and are currently shared by people of different nations, cultures, religions, and social classes. However, the negative impacts of environmental degradation are disproportionately felt by the poor. Throughout the developing world, the poor often rely on natural resources to meet their basic needs through agricultural production and gathering resources essential for household maintenance, such as water, firewood, and wild plants for consumption and medicine. Thus, the depletion and contamination of water sources directly threaten the livelihoods of those who depend on them.
- **Social Inequality:** One of the more entrenched sources of poverty throughout the world is social inequality that stems from cultural ideas about the relative worth of different genders, races, ethnic groups, and social classes. Ascribed inequality works by placing individuals in different social categories at birth, often based on religious, ethnic, or 'racial' characteristics. In South African history, apartheid laws defined a binary caste system that assigned different rights (or lack thereof) and social spaces to Whites and Blacks, using skin color to automatically determine the opportunities available to individuals in each group.

EFFECTS OF POVERTY

:: The effects of poverty may also be causes, thus creating a "**poverty cycle**" operating across multiple levels, individual, local, national and global.

HEALTH

- Hunger, disease, and less education describe a person in poverty. One third of deaths - some 18 million people a year or 50,000 per day - are due to **poverty-related causes**: in total 270 million people, most of them women and children, have died as a result of poverty since 1990. Those living in poverty suffer disproportionately from hunger or even starvation and disease. Those living in poverty suffer lower life expectancy.
- According to the World Health Organization, hunger **and** malnutrition are the single gravest threats to the world's public health and malnutrition is by far the biggest contributor to child mortality, present in half of all cases.
- **Women who have born children into poverty** may not be able to nourish the children efficiently and provide adequate care in infancy. The children may also suffer

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from disease that has been passed down to the child through birth. Asthma and rickets are common problems children acquire when born into poverty.

EDUCATION

- There is a high risk of **educational underachievement** for children who are from low-income housing circumstances.
- This often is a process that begins in primary school for some less fortunate children. For children with low resources, the risk factors are similar to excuses such as **juvenile delinquency rates**, higher levels of teenage pregnancy, and the economic dependency upon their low income parent or parents.
- Poverty often **drastically affects children's success in school**. A child's "home activities, preferences, mannerisms" must align with the world and in the cases that they do not these students are at a disadvantage in the school and most importantly the classroom. Children who live at or below the poverty level will have far **less success educationally** than children who live above the poverty line.
- Poor children have a great deal less healthcare and this ultimately results in many absences from the academic year. Additionally, poor children are much more likely to suffer from **hunger, fatigue**, irritability, **headaches**, ear infections, flu, and colds. These illnesses could potentially restrict a child or student's focus and concentration.

HOUSING

- **Slum-dwellers**, who make up a third of the world's urban population, live in poverty no better, if not worse, than rural people, who are the traditional focus of the poverty in the developing world, according to a report by the United Nations.
- Most of the children living in institutions around the world have a surviving parent or close relative, and they most commonly entered orphanages because of poverty.

VIOLENCE

- According to a UN report on modern slavery, the most common form of human **trafficking** is for prostitution, which is largely fueled by poverty.
- In Zimbabwe, a number of girls are turning to **prostitution** for food to survive because of the increasing poverty.
- Also there are also many effects of poverty closer to home. For example after dropping out of school children may turn to violence as a source of income i.e mugging people, betting during street fights etc.

ADDRESSING THE UNDERLYING CAUSES OF POVERTY

:: Building a more widespread commitment to overcoming poverty is an essential first step in overcoming poverty, and actions to address this are discussed below.

- **Share the benefits of economic growth** through an emphasis on more widespread employment: The phenomenon of **jobless economic growth** that increases income inequalities and generates too few jobs for low income groups poses a serious threat to the well-being of many nations, both North and South.

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Government policies should consider not only aggregate economic impact but also the distribution of employment. **Socially responsible venture capital and microcredit initiatives** can foster employment-generating businesses that complement the local culture and environment.

- **Root out corruption**, which harms society as a whole: Corruption, both in government and business, places heavy cost on society. Businesses should enact, publicize and follow codes of conduct banning corruption on the part of their staff and directors. Citizens must **demand greater transparency** on the part of both government and the corporate sector and create reform movements where needed.
- **Broaden access to education and technology** among marginalized groups, and especially among girls and women: The educational attainment of **women** has strong bearing on the well-being of their families, and efforts to improve education for women and girls must be strengthened. At the same time, steps should be taken to ensure that the **current revolution in information technology** benefits marginalized groups. This must begin in school.
- Improve **government capacity to provide universal access** to essential goods and services, including potable water, affordable food, primary health care, education, housing and **other social services**: Governments around the world have made commitments to this through the 20/20 Initiative, which calls for 20% of national budgets and 20% of foreign aid to be spent on human services. But raising adequate resources through effective taxation and other mechanisms is often politically difficult. New mechanisms for **public policy dialogue** that enable citizens of all classes to recognize the benefit of universal access to key services must be put in place. Nonprofit groups and even corporations can provide essential support here, helping articulate a **vision of a healthy society**. These nongovernmental actors can also help in the actual provision of services.
- **Investments in human capital** in the form of health, is needed for economic growth. Nations do not necessarily need wealth to gain health. Cheap water filters and promoting hand washing are some of the most **cost effective health interventions** and can cut deaths from diarrhea and pneumonia. Knowledge on the cost effectiveness of healthcare interventions can be elusive but educational measures to disseminate what works are available, such as the disease control priorities project.
- **Human capital**, in the form of education, is an even more important determinant of economic growth than physical capital. **De-worming children** costs about 50 cents per child per year and reduces non-attendance from anemia, illness and malnutrition and is only a twenty-fifth as expensive to increase school attendance as by constructing schools.
- **Good Infrastructure**, such as roads and information networks, helps market reforms to work. It was the technology of the steam engine that originally began the dramatic decreases in poverty levels. **Cell phone technology** brings the market to poor or rural sections. With necessary information, remote farmers can produce specific crops to sell to the buyers that bring the best price. Such technology also makes **financial services accessible** to the poor. Those in poverty place overwhelming importance on having a safe place to save money, much more so than receiving loans. Also, a large part of microfinance loans are spent on products that would usually be paid by a checking or savings account.

- **Aid in its simplest form is a basic income grant**, a form of social security periodically providing citizens with money. Some aid, such as **Conditional Cash Transfers**, can be rewarded based on desirable actions such as enrolling children in school or receiving vaccinations. Another form of aid is microloans, made famous by the **Grameen Bank**, where small amounts of money are loaned to farmers or villages, mostly women, who can then obtain physical capital to increase their economic rewards. Aid from **non-governmental organizations** may be more effective than governmental aid; this may be because it is better at reaching the poor and better controlled at the grassroots level.
- **Good Institutions:** Efficient institutions that are not corrupt and obey the rule of law make and enforce good laws that provide security to property and businesses. Efficient and fair governments would work to invest in the long-term interests of the nation rather than plunder resources through corruption. Examples of good governance leading to economic development and poverty reduction include Thailand, Taiwan, Malaysia, South Korea, and Vietnam, which tends to have a **strong government**, called a hard state or development state.

CROPPING PATTERNS IN INDIA

Cropping activities go on **all the year-round in India**, provided water is available for crops. In northern India, there are **two distinct seasons**, **kharif** (July to October), and **rabi** (October to March). Crops grown between March and June are known as **zaid**. In some parts of the country, there are **no such distinct seasons**, but there they have their own classification of seasons. The village revenue officials keep plot-wise record of crops grown in each season. These are **annually compiled district-wise, state-wise** and on all-India basis. From these records one could calculate the relative abundance of a **crop or a group of crops in a region**.

These crops are grown sole or mixed (mixed-cropping), or in a **definite sequence** (rotational cropping). The land may be occupied by **one crop** during one season (mono-cropping), or **by two crops** (double-cropping) which may be grown in a year in sequence. Of late, the trend is even more than two crops (multiple-cropping) in a year. These intensive cropping may be done **either in sequence or even there may be relay-cropping-one** crop under-sown in a standing crop. With wide-rowed slow growing cropping patterns, companion crops may be grown.

CROPPING PATTERNS

There are **various ways of utilising the land intensively**. It is proposed to give a synoptic view of cropping patterns prevalent in the country. Before dealing with the cropping patterns, brief descriptions of the **factors that determine the cropping systems** of an individual locality or region are briefly presented here. In any locality, the **prevalent cropping systems** are the cumulative results of **past and present decisions** by individuals, communities or governments and their agencies. These decisions are usually **based on experience, tradition, expected profit, personal preferences and resources**, social and political pressures and so on. The most important element of farming in India is the **production of grains and the dominant food-chain is grainman**. On this basis, the country may be divided broadly into **five agricultural regions**.

1. **The rice region** extending from the eastern part to include a very large part of the northeastern and the south-eastern India, with another strip along the western coast.
2. **The wheat region**, occupying most of the northern, western and central India.
3. **The millet-sorghum region**, comprising Rajasthan, Madhya Pradesh and the Deccan Plateau in the centre of the Indian Peninsula.
4. **The temperate Himalayan region** of Kashmir, Himachal Pradesh and Uttar Pradesh and some adjoining areas. Here potatoes are as important as cereal crops (which are mainly maize and rice), and the tree-fruits form a large part of agricultural production.
5. **The plantation crops region** of Assam and the hills of southern India where good quality tea is produced. There is an important production of high-quality coffee in the hills of the western peninsular India. Rubber is mostly grown in Kerala and parts of Karnataka and Tamil Nadu. There are some large estates, but most of the growers

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would come under the category of small holders. Sugarcane, which in many countries is a plantation crop, is almost entirely grown by small holders in India.

THE PRESENT CROPPING PATTERNS

A broad picture of the **major cropping patterns in India** can be presented by taking the **major crops** into consideration. To begin with, the south-westerly monsoon crops (kharif) are bajra, maize, ragi, groundnut and cotton. Among the post-monsoon crops (rabi) - wheat, sorghum (rabi) and gram, can also be considered to be the base crops for describing the cropping patterns. With such an approach, the **crop occupying the highest%age of the sown area of the region is taken** as the base crop and all other possible alternative crops which are sown in the region either as substitutes of the base crop in the same season or as the crops which **fit in the rotation in the subsequent season**, are considered in the pattern.

Also these crops have been identified as associating themselves with a particular type of agro-climate, and certain other minor crops with similar requirements are **grouped in one category**. For example, **wheat, barley and oats**, are taken as one category. Similarly the minor millets are grouped with sorghum or bajra. Among the kharif crops, rice, jowar, bajra, maize, groundnut and cotton are the prominent crops to be considered the base crops for describing the kharif cropping patterns.

KHARIF SEASON CROPPING PATTERNS

The Rice-Based Cropping Patterns

Rice is grown in the **high-rainfall area** or in areas where supplemental irrigation is available to ensure good yields. If the crop has to depend solely on rainfall, it requires **not less than 30 cm per month** of rainfall over the entire growing period. However, only 10% of the area in the country comes under this category, and it lies in the eastern parts. Nearly 45% of the **total rice area in India receives 30 cm per month** of rainfall during at least two months (July and August) of the south-westerly monsoon and much less during other months.

In contrast to these parts, the **eastern and southern regions** comprising Assam, West Bengal, coastal Orissa, coastal Andhra Pradesh, Karnataka (most part), Tamil Nadu and Kerala receive rainfall of 10 to 20 cm per month in **four to eight consecutive months**, starting earlier or going over later than the south-westerly monsoon months. With supplemental irrigation, **2 or 3 crops are taken in these areas**. However, it has been observed that on an all-India basis, nearly 80% of rice is sown during June-September and the rest during the rest of the season. Area wise the **mono-season belt** occupies >50% of the area (comprising Assam, West Bengal, coastal Orissa, coastal Andhra Pradesh, parts of Tamil Nadu, Karnataka and Kerala).

On an all-India basis, about 30 rice-based cropping patterns have been identified in different states. In the most humid areas of eastern India comprising **Tripura, Manipur and Mizoram, rice is the exclusive crop**. In Meghalaya, rice is alternated with cotton, vegetable and food crops, whereas in **Arunachal Pradesh**, where rice **is not grown** exclusively, the alternative crops being maize, small millets and oilseeds. In parts of Assam, West Bengal, Bihar, Orissa and northern coastal districts

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of Andhra Pradesh, jute forms an important commercial crop alternative to rice. In West Bengal, besides **rice and jute**, **pulses** and **maize** are grown on a limited scale.

In **Bihar**, rice is grown around 50% (5.3 m ha) of its cropped area (15% of all-India area), whereas pulses, wheat, jute, maize, sugarcane and oilseeds are the alternative crops. In **Uttar Pradesh** rice is grown on 20% (4.6 m ha) of its cropped area and represents about 12% of the all-India area under this crop. Rice is concentrated in the **eastern districts of Uttar Pradesh** where the alternative crops are pulses, groundnut, **sugarcane, bajra and jowar** in the decreasing order of their importance. **Tobacco** is grown in some districts.

In **Orissa**, rice is grown on more than 50% of the area, whereas the alternative crops are: pulses, ragi, oilseeds, maize and small millets. In Madhya Pradesh rice is grown in the Chhattisgarh area on 4.3 m ha (12% of the all-India rice area), but the **crop suffers because of inadequate rainfall and irrigation**. The important alternative crops of this area are: small millets, pulses and groundnut. Wheat is also grown on a limited scale.

In the southern states, namely Andhra Pradesh, Tamil Nadu and Kerala **rice is grown in more than one season** and mostly under irrigation or under sufficient rainfall. Together, these three states have over 6.0 m ha, representing over 17% of the all-India area under rice. **Important alternative plantation crops** in Andhra Pradesh are: **pulses, groundnut, jowar, maize, sugarcane and tobacco**. In Karnataka the crops alternative to rice is: **ragi, plantation crops, bajra, cotton, groundnut, jowar and maize**.

In **Kerala** plantation crops and tapioca form the **main plantation crops alternative to rice**. In Maharashtra rice is grown mostly in the Konkan area over 1.3 m ha, along with ragi, pulses, jowar, sugarcane, groundnuts and oilseeds. In other states, namely Gujarat, Jammu and Kashmir, Rajasthan and Himachal Pradesh, **rice forms a minor plantation crop** and is mostly grown with irrigation. However, in Punjab and Haryana and to some extent in western Uttar Pradesh owing to high water-table during this monsoon season, rice has become a major crops in such areas.

The Kharif Cereals Other Than Rice

Maize, jowar and bajra form the main kharif cereals, whereas **ragi and small millets** come next and are grown on a limited area. By and large, **maize** is a crop grown commonly in **high-rainfall areas** or on soils with a better capacity for retaining moisture, but with good drainage. Next comes **jowar** in the **medium rainfall regions** whereas **bajra** has been the main crop in areas with low or less dependable rainfall and on **light textured soils**.

Even though these crops are spread all over the western, northern and southern India, the regions of these crops patterns are demarcated well to the **west of 80° longitude** (except that of maize). **Ragi as a kharif cereal** (2.4 m ha) is mainly concentrated in Karnataka, **Tamil Nadu and Andhra Pradesh** which account for main than 60% of the total area under this crop in India. The cropping patterns based on each of these kharif cereals are discussed.

The Maize-Based Cropping Patterns

The largest area under the kharif maize is in **Uttar Pradesh** (1.5 m ha), followed by **Bihar, Rajasthan, Madhya Pradesh** and **Punjab**. Taking the rainfall of the **maize growing areas** under consideration, over 72% of the areas receive **20-30 cm per month of rainfall** in at least 2 months or more during the south westerly monsoon season. On the all-India basis, about 12 **cropping patterns have been identified**. They have **maize as the base crop**. In the maize growing areas of Uttar Pradesh and Bihar, **rice in kharif** and **wheat in Rabi** are the main alternative crops. In some areas, **bajra, groundnut, sugarcane, ragi and pulses** are taken as alternative crops.

In Rajasthan maize is grown as an **extensive crop** in some areas, whereas at other places, it is replaced by small **millet, pulses, groundnut and wheat (Rabi)** as alternative crop. In **Madhya Pradesh**, mainly the **kharif jowar is replaced by maize**, whereas **rice and groundnut** are also grown to a limited extent. In Punjab maize has **groundnut, fodder crops** and wheat (Rabi) as alternative crops. In other states, e.g. **Gujarat, rice, groundnut, cotton and wheat** form the alternative crops in the maize-growing areas of Himachal Pradesh, whereas in Andhra Pradesh, **rice, kharif jowar, and oilseeds** are grown in these areas.

The Kharif Jowar-Based Cropping Patterns

The area under the kharif jowar **in India is highest in Maharashtra** (2.5 m ha), closely followed by **Madhya Pradesh** (2.3 m ha), whereas in each of the states of **Rajasthan, Andhra Pradesh, Karnataka and Gujarat**, the area under this crops is between 1.0 and 1.4 m ha. **Jowar is mainly grown where rainfall distribution ranges from 10-20 per month** at least for 3 to 4 months of the south-westerly monsoon or is still more abundant. On the all-India basis, **about 17 major cropping patterns** have been identified. In them the base crops is **kharif jowar**. Most of the alternative crops are also of the type which can be grown under medium rainfall.

In Maharashtra **cotton, pulses, groundnut** and **small millets** are sown as **alternative crops**. In the adjacent states of Madhya Pradesh, besides the above alternative crops, wheat and fodder are sown. In Rajasthan **wheat, cotton, bajra and maize** are grown in the kharif-jowar tract, whereas in Andhra Pradesh, groundnuts, cotton, oilseeds and pulses form the main alternative crops. Besides **cotton and groundnut, ragi** is sown in the **kharif-jowar tract of Karnataka**, whereas in Gujarat, bajra, cotton and groundnut are the major alternative crops.

The Bajra-Based Cropping Patterns

Bajra is more **drought-resistant crop** than several other cereal crops and is generally preferred in **low-rainfall areas** and on light soils. The area under the bajra crop in India is about 12 m ha and **Rajasthan** shares about the 2/3 total area. **Maharashtra, Gujarat** and **Uttar Pradesh** together constitute an additional 1/3 area under bajra, in India. Over 2/3rd of this crop is grown in areas receiving **10-20 cm per month of rainfall**, extending over 1 to 4 months of the south- westerly monsoon. On the all-India basis, about 20 major cropping patterns have been identified with bajra.

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However, it may be observed that **jowar and bajra** are grown mostly under identical environmental conditions and both have wide spectrum adaptability in respect of rainfall, temperature and rainfall. Considering the cropping patterns in different states, bajra is **grown along with pulses, groundnut, oilseeds and kharif jowar** in Rajasthan. **Gujarat** has a similar cropping pattern in its **bajra areas**, except that cotton and tobacco are also grown. In **Maharashtra** besides having some areas solely under **bajra, pulses, wheat, rabi jowar, groundnut and cotton** are substituted for it. In **Uttar Pradesh, maize, rice and wheat** form the main alternative crops to this crop.

The Groundnut Based Cropping Patterns

Groundnut is sown over an **area of about 7.2 m ha**, mostly in 5 major groundnut-producing states of **Gujarat** (25% area), Andhra Pradesh, Tamil Nadu, Maharashtra and Karnataka. The rainfall in the groundnut **area ranges from 20-30 cm per month** in one of the monsoon months and much less in the other months. In some cases the rainfall is even less than 10 cm per month during the growth of the crop. The **irrigated area** under groundnut is **very small and** that too, in a **few states** only, viz. **Punjab, Tamil Nadu and Andhra Pradesh**.

On the all-India level, **about 9 cropping patterns have been identified** with this crop. In **Gujarat** besides the sole crop of groundnut in some areas, **bajra is the major alternative crop**, whereas the **kharif jowar, cotton and pulses** are also grown in this tract. In **Andhra Pradesh and Tamil Nadu**, this crop receives irrigation in some areas and **rice forms an alternative crop**. Under rain fed conditions, **bajra, kharif jowar, small millets, cotton and pulses** are grown as alternative crops. In Maharashtra both the **kharif and rabi jowar and small millets** are important alternative crops. In **Karnataka** also, **jowar** is the major alternative crop, whereas cotton, tobacco, sugarcane and wheat are also grown in this tract.

The Cotton-Based Cropping Patterns

Cotton is grown over **7.6 m ha in India**. **Maharashtra** shares 36%, followed by **Gujarat, Karnataka and Madhya Pradesh**. Together, these 4 states account for about **80% of the area** under cotton. Other cotton-growing states with smaller areas are Punjab, Andhra Pradesh, Tamil Nadu, Haryana and Rajasthan. Most of the cotton areas in the country are under the **high to medium rainfall** zone. The cotton grown in Madhya Pradesh, Maharashtra, Karnataka, and Andhra Pradesh is **rain fed**, whereas in Gujarat and Tamil Nadu, it receives **partial irrigation** (16-20% of the area). The area under **cotton in Punjab, Haryana, Rajasthan and Uttar Pradesh** gets adequate irrigation.

These growing conditions, together with the species of cotton grown, determine the **duration of the crop** which may vary from about 5 to 9 months. On the all-India basis, about **16 broad cropping patterns** have been identified. In **Maharashtra, Madhya Pradesh, Andhra Pradesh and Karnataka**, the cropping patterns in the cotton-growing areas are mostly similar owing to identical rainfall. These patterns include **jowar (kharif and rabi), groundnut and small millets**. Pulses and wheat are also grown in a limited area. In some pockets, where irrigation is available,

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rice and sugarcane are also grown. In **Gujarat**, **rice, tobacco and maize** are grown, besides the rain fed crops, e.g. **jowar and bajra**.

THE RABI SEASON CROPPING PATTERNS

Among the Rabi crops, **wheat, together with barley and oats, jowar and gram, are the main base crops** in the Rabi cropping patterns. Generally, **wheat and gram** are concentrated in the subtropical region in **northern India**, whereas the Rabi **sorghum** is grown mostly in the **Deccan**.

Wheat-and-Gram-Based Cropping Patterns

These two crops are grown under **identical climate** and can often be substituted for each other. The core of the wheat region responsible for 70% of the area and 76% of production comprises **Punjab, Haryana, Delhi, Uttar Pradesh, and Madhya Pradesh**, flanked by **Rajasthan** and **Gujarat** in the western region and **Bihar** and **West Bengal** in the eastern region. This area has an extensive irrigation system. The rainfall during the **south-westerly monsoon** is also fairly high with over **20 cm to 30 cm** of rainfall in at least two out of the **4 months** of the rainy season. However, **winter showers** are scattered and form less than 2.5 cm in each month from November to February.

On the **all-India level**, about **19 cropping patterns** have been identified with wheat and **7 cropping patterns with gram**. In **Uttar Pradesh**, **maize, rice, jowar, small millets** and groundnut form the main crops preceding wheat and gram. Generally, **gram is grown on more moisture-** retentive soils, but with little irrigation or in areas with less of rainfall. In **Madhya Pradesh**, wheat is grown with stored moisture, with little **irrigation** and **rainfall** during the crop period. The crop suffers heavily for want of adequate moisture with the **resultant low yields** (57% of the all-India yield).

The **kharif jowar, groundnut, oilseeds, cotton, small millets** and **fodders** form the alternative crops to wheat and gram. In **Punjab**, 85% of the **wheat** area is under **irrigation** and, therefore, has **rice, maize, fodders, bajra and cotton** as the crops preceding wheat. The area under **gram in Punjab** is very meager. In **Rajasthan**, the **kharif jowar fodders** and bajra precede wheat, **whereas gram** and other **oil seeds** form **alternative crops** in winter. In **Bihar**, **rice, maize and pulses** are the main preceding crops, wheat, in the wheat-growing areas, whereas oilseeds and bajra are also grown as alternative crops.

In **Haryana**, **wheat and gram** are the main alternative crops in winter. **Rice, maize, bajra and jowar** form the main preceding crops. In Maharashtra, most of the wheat crop is grown on **residual moisture, bajra and other small millets** or short-duration pulses form the monsoon crop in the wheat areas. Generally, heavy black cotton soils of **Maharashtra and the adjacent Madhya Pradesh** are left fallow in the kharif season for operational difficulties and **wheat** is grown after the cessation of rains with stored moisture. In **Maharashtra**, the **rabi jowar** is a crop alternative to wheat.

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Rabi Jowar-Based Cropping Patterns

On the all-India level, about **13 cropping patterns** have been identified with the rabi jowar. **Maharashtra** has the **largest number of these cropping patterns**, wherein starting with the exclusive **rabi jowar, bajra, pulses, oilseeds and tobacco** are grown as alternative crops. In **Karnataka**, small millets, groundnut, bajra, pulses and oilseeds form alternative crops to the rabi jowar. **Cotton** and **tobacco** are also grown in some parts of the **rabi-jowar area of Karnataka**. In **Andhra Pradesh**, short duration pulses, **small millets**, paddy and oilseeds form the main alternative crops in the jowar area.

PLANTATION AND OTHER COMMERCIAL CROPS

Crops under this category include **sugarcane, tobacco, potato, jute, tea, coffee, coconut, rubber and other crops**, such as **spices and condiments**. Some of them are **seasonal**, some annual and some perennial. Generally, the areas occupied by them are very limited as compared with food and other crops. Nevertheless, they are important commercially. Most of them require **specific environmental conditions** and from the point of view of cropping patterns, they are concentrated in some particular regions. Besides, **certain horticultural crops**, such as **apple, mango and citrus**, are important.

In several **sugarcane-growing areas, mono-cropping** is practiced, and during the interval between the crops, **short duration seasonal** crops are grown. In U.P., Bihar, Punjab and Haryana, **wheat** and **maize** are the rotation crops. **Rice** is also grown in some areas. In the **southern states**, namely **Tamil Nadu, Karnataka** and **Andhra Pradesh**, ragi, rice and pulses are grown along with sugarcane. In **Maharashtra**, pulses, jowar and cotton are grown.

In the **potato-growing region**, maize, pulses, **wheat** are the **alternative** crops. In the **tobacco growing areas**, depending on the season and the type of tobacco, **jowar, oilseeds and maize** are grown in rotation. In the **jute-growing areas**, rice is the usual alternative crop. In the case of **plantation-crops, intercropping** with pulses and fodder crops is common. Spices and condiments are generally grown on fertile soils. **Chilies are rotated with jowar**, whereas **onion, coriander, turmeric and ginger** are grown as mixed crops with other seasonal crops.

MIXED CROPPING

Crops mixtures are widely grown, especially during the **kharif season**. **Pulses and some oilseeds** are grown with **maize, jowar** and **bajra**. Lowland rice is invariably grown unmixed, but in the case of **upland rice**, several mixtures are prevalent in eastern **Uttar Pradesh**, with **Chotanagpur** Division of **Bihar** and in the **Chhattisgarh** Division of **Madhya Pradesh**.

During the **Rabi season**, especially in the **unirrigated** area of the north, **wheat and barley** and **wheat and gram** or **wheat + barley + gram** are the mixtures of grain crops. **Brassica** and safflower are grown mixed with gram or even with wheat. Mixed cropping was considered by researchers a primitive practice, but now many researchers **regard mixed cropping** as the most efficient way of using land. Several

new mixtures have recently been suggested. They ensure an efficient utilization of **sunshine and land**. Breeders are developing plant types in pulses and oilseeds, with good compatibility with row crops.

CROP COMBINATIONS

The study of crop combinations constitutes an important aspect of agricultural geography. In fact, it provides a good basis for agricultural regionalization and helps in the formulation of **strategy for agricultural development**. Crops are generally grown in combinations and it is rarely that a particular crop occupies a position of total isolation. The distribution maps of and their concentration are interesting and help in knowing the density and concentration of individual crops, but it is even more important to view **the integrated assemblage of the various crops in a region**.

For example, the **demarcation of India into rice or wheat region** does not explain the agriculturally significant fact that very often the wheat/rice region also has mustard, gram, pulses, and maize. For a comprehensive and clear understanding of the agricultural mosaic of a region, **a systematic study of the crop combinations** has great planning significance. The methods applied for the demarcation of crop combination regions may be summed up under two categories:

1. The arbitrary choice method, and
2. The statistical method

In the **arbitrary method**, the **first two or the first three crops** in the area are included and the rest of the crops are excluded from the combination. This is an unscientific method as the crops are excluded from the combination without any consideration of their %age area and their monetary value. The second method is known as the **statistical method**. This method being based on statistical formula is **more scientific and reliable** for the objective grouping of crops. On the basis of some homogeneity and commonness, major crop regions in India may be divided as follows:

1. Rice Region
2. Wheat Region
3. Jowar –Bajra Region
4. Cotton Region
5. Millet and Maize Region
6. Fruit and Spice Region

The Rice Region

Rice is considered as the **first-ranking crop** in the vast region stretching from lower **Gangetic Plain to Brahmaputra** Valley in the east and the **circum-coastal** alluvial tracts of the peninsula region. Rice cultivation is done around Bay of Bengal, barring isolated pockets bordering the Arabian Sea. The **isohyets line 150 cm demarcates** the lower boundary of rice, except in some edges where rice grows even in 100 cm of annual rainfall. Though rice displays overall dominance, considering the secondary importance of other crops, this region may be **subdivided into following zones**:

1. **Rice-Jute-Tea**- This association of crops occurs in farthest east, near Assam Valley and northern West Bengal.

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2. **Rice-Pulses-Millet**s- This association occurs in the western section of the former zone, covering central Bihar, eastern Madhya Pradesh and eastern Uttar Pradesh.
3. **Rice-Millet**s- This zone comprises the entire Andhra Pradesh, south Orissa and some parts of Tamil Nadu.
4. **Rice-Coffee-Spices**- This zone is found in the southern extremity of Kerala and Tamil Nadu.

The Jowar-Bajra Region

This crop combination occurs relatively in **less rainfall region** of 50-100 cm in **red soil region**. As the region is drought-prone, Jowar-Bajra is more popular. Sub-regions in this zone are:

1. Jowar-Cotton in Maharashtra.
2. Jowar-Cotton –Oilseeds-Millet
s in Karnataka and Maharashtra.3. Jowar-Wheat in entire Rajasthan, Haryana and some parts of Uttar Pradesh.
4. Bajra-Jowar-Pulses in Rajasthan desert and semi-desert areas.

The Wheat Region

This region covers the **entire north-western India** including the states of Punjab, Haryana, Uttar Pradesh and Rajasthan. The major sub-regions are:

1. Wheat-Maize-Sugar Cane- This region comprises a great part of wheat region, covering West Uttar Pradesh, Himachal Pradesh and Jammu.
2. Wheat-Jowar-Bajra- in Indus Plain covering Punjab and Haryana.
3. Wheat-Jowar-Bajra- in Vindhyan scarp land and Malwa Bundelkhand plateau.

The Cotton Region

In the **black cotton soil** as regur region in the North West India, cotton cultivation predominates. The cotton cultivation covers the **Deccan trap region** and Gujarat Plain. The Narmada, Tapti, Purna, Sabarmati River valleys are basically heartlands of cotton cultivation. As a cash-crop, cotton cultivation is always associated with one foodgrain cultivation, preferably Jowar, Bajra or oil seeds. The different sub-regions are:

1. Cotton-Jowar-Bajra-Grows in close association with one another in the Maharashtra and Western Madhya Pradesh.
2. Cotton-Oilseeds-Combination developed in Gujarat.
3. Cotton-Pulses-Rice-Region developed in Narmada banks and eastern Gujarat.

The Millet-Maize Region

The cultivation of millet, maize and ragi are found in close association with other major cereals like bajra, wheat, rice etc. Maize cultivation dominates in Rajasthan, Gujarat, and Madhya Pradesh. In Himachal Pradesh, Maize-Barley-Wheat combination has developed, particularly in the foothills of the Himalayas. Some parts of the Aravalli have the peculiar crop combination of Maize-Cotton-Oilseeds-Millets-Wheat. Ragi cultivation predominates in South of Karnataka.

The Fruit & Spice Region

This is the **smallest region** among the different crop regions. **High-altitude hilly areas** come under the territory of this region. The „**Duns**“ and **valleys** in Himalayas, foothills of Nilgiri, Annamalai, Palni and Cardamom hills in Tamil Nadu and Kerala may be classified as fruit and spice region. Here, the dominant agricultural activity is fruit orchards and plantations.

DIVERSIFICATION OF CROPPING PATTERNS IN INDIA

The Cropping Patterns in India underwent **several changes with the advent of modern agricultural technology**, especially during the period of the Green Revolution in the late sixties and early seventies. There is a continuous surge for **diversified agriculture** in terms of crops, primarily on **economic considerations**. The crop pattern changes, however, are the outcome of the interactive effect of many factors which can be broadly categorized into the **following 5 groups**:

- a. **Resource related** factors covering irrigation, rainfall and soil fertility.
- b. **Technology related** factors covering not only seed, fertilizer, and water technologies but also those related to marketing, storage and processing.
- c. **Household related** factors covering food and fodder self-sufficiency requirement as well as investment capacity.
- d. **Price related** factors covering output and input prices as well as trade policies and other economic policies that affect these prices either directly or indirectly.
- e. **Institutional and infrastructure related** factors covering farm size and tenancy arrangements, research, extension and marketing systems and government regulatory policies.

These factors are **not watertight but inter-related**. For instance, the **adoption of crop technologies** is influenced not only by resource related factors but also by institutional and infrastructure factors. Similarly, **government policies - both supportive and regulatory in nature** - affect both the input and output prices. Likewise, special government programmes also affect area allocation and crop composition. More importantly, both the **economic liberalization policies** as well as the **globalization process** are also exerting strong pressures on the area allocation decision of farmers, essentially through their impact on the relative prices of inputs and outputs.

Although the factors that **influence the area allocation decision** of farmers are all important, they obviously differ in terms of the relative importance both across farm groups and resource regions. While factors such as **food and fodder self-sufficiency, farm size, and investment constraints** are important in influencing the area allocation pattern among smaller farms, larger farmers with an ability to **circumvent resources** constraints usually go more by **economic considerations** based on relative crop **prices** than by other **non-economic considerations**. Similarly, economic factors play a **relatively stronger** role in influencing the crop pattern in areas with a better irrigation and infrastructure potential. In such areas, **commercialization** and **market networks co-evolve** to make the farmers more dynamic and **highly responsive** to economic impulses.

CHANGES IN CROPPING PATTERNS

What is most notable is the change in the **relative importance of these factors** over time. From a much generalized perspective, Indian agriculture is increasingly getting **influenced more and more by economic factors**. This need not be surprising because **irrigation expansion, infrastructure development, penetration of rural markets**, development and spread of **short duration and drought resistant crop technologies** have all contributed to minimizing the role of non-economic factors in crop choice of even small farmers.

What is more, the **reform initiatives** undertaken in the context of the ongoing **agricultural liberalization and globalization** policies are also going to further strengthen the role of **price related economic incentives** in determining crop composition both at the micro and macro levels. Obviously, such a **changing economic environment** will also ensure that government price and trade policies will become still more powerful instruments for directing area **allocation decisions of farmers**, aligning thereby the **crop pattern changes** in line with the changing demand-supply conditions.

In a condition where **agricultural growth results** more from productivity improvement than from area expansion, the increasing role that **price related economic incentives play in crop** choice can also pave the way for the next stage of agricultural evolution where growth originates more and more from value-added production. The major change in cropping pattern that has been observed in India is a **substantial area shift from cereals to non-cereals**. Although cereals gained a marginal increase in area share in the first decade of the Green Revolution; their area and share has declined gradually thereafter.

Between 1966 and 1996, 3.35% of the gross cultivated area (GCA) – representing approximately about 5.7 million hectares (m/ha) - has **shifted from cereal crops to non-cereal crops**. Since the **area share of pulses** taken as a group also declined by 1.5% during the same period, the area share of food grains as a group declined by 5% during 1966-97. In area terms, the shift from **food grains to non-food grains** involves an approximate area of about 8 m ha. While **cereals and pulses** have lost area, the major gainers of this area **shift are the non-food grain crops** especially oilseeds. **Although the share of cereals as a group has declined**, the area share of rice has increased continuously over all the four periods.

Wheat, although having a declining area share until 1986/87, also gained in its share when the entire period is considered. Thus, the area loss of cereals can be attributed entirely to the **declining area share of coarse cereals, especially sorghum, pearl millet, barely and small millets**. It can be noted that even within coarse cereals, the area share of maize shows a **marginal improvement** over the years. Within oilseeds, the crops showing steady improvement in their area share are: rapeseed and mustard, soybean and sunflower.

Among these **3 oilseeds gaining in area share**, rapeseed and mustard are substantially grown as intercrops with wheat. On the other hand, the area shares of other oilseeds including groundnut (that has a dominant area share within oilseeds) but excluding **coconut, which** is more a **plantation crop than field crop, have either**

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fluctuated or declined. The area share of groundnut, though improved during the last period, has **declined as** compared to its share in the **pre-Green Revolution period.**

But, the **declining area share of crops** - especially those with only a marginal change in their area share - need not necessarily imply a **decline in the actual area** under these crops. Since the **Gross Cropped Area (GCA)** is constantly increasing over time, partly through an expansion of net sown areas as in the initial stages of the **Green Revolution** and partly through increasing **intensity of cropping** mainly by irrigation expansion, the declining area share **can coincide** with an increase in absolute increase in the area under crops. Although the **increase in the area share of other commercial crops is not as dramatic** as that of **oilseeds**, it is still notable because of its implications for the direction of Indian agriculture.

But, among these other **commercial crops that cover fibers, spices, fruits and vegetables, and other field crops** such as tobacco and sugar cane and plantation crops, **only spices, fruits and vegetables show a steady improvement** in their area shares, whereas others show mostly a **declining trend**. This is particularly true for fibers and other field crops that have over four fifths of the total area under the broad group of other commercial crops. However, **sugar cane, included in the category of other field crops, shows an increase in** its area share. This is also true for **cotton** included in the **fiber category**. While all **spice crops** show a gradual increase in their area share, **only 3 of the 6 crops** included in the fruits and vegetables category show a gain in their area share over the years. These crops are **banana, potato and onion.**