

**GS SCORE**

**ANALYST**

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July - I (1-15, 2017)

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## TOPICAL ANALYSIS **ERA OF Biological Annihilation**

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- ▶ Aerosols Shrinking India's Monsoon
- ▶ Illegalities in Beach Sand Mining
- ▶ Climate Change Impact on Sunderbans
- ▶ Ancient Bawadis and Water Management in Present Context

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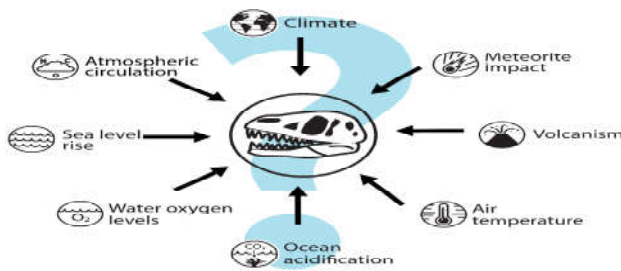
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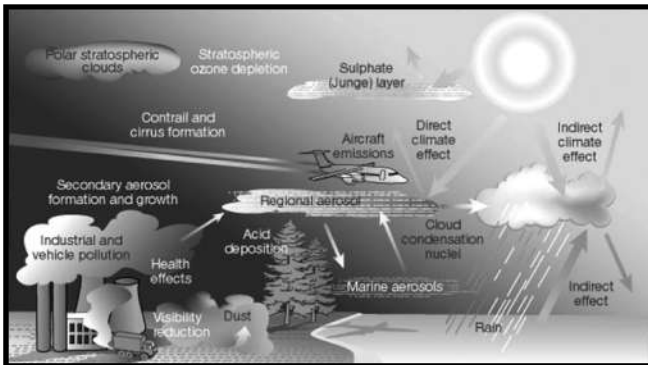
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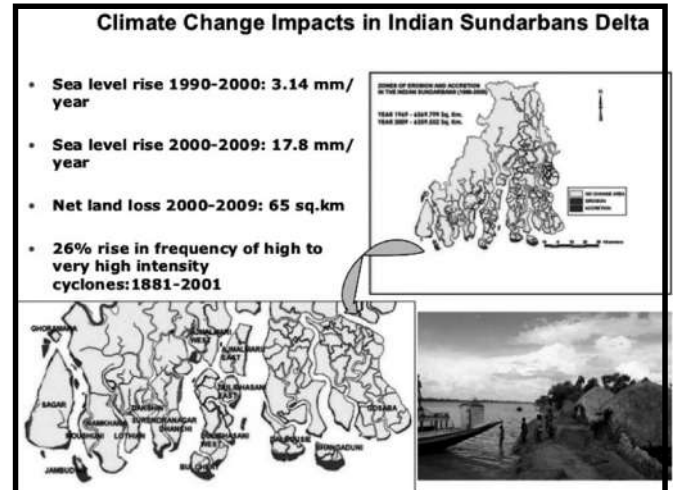
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## COVER STORY

# ERA of Biological Annihilation

Context

*Biodiversity boosts ecosystem productivity where each species, no matter how small, all have an important role to play. Every ecosystem on earth needs biodiversity and without it the whole web of life that includes us humans will collapse. This is biodiversity in action.*

*The loss of species in a certain habitat is known as biodiversity loss.*

*Biodiversity loss disrupts the functioning of ecosystems, making them more vulnerable to perturbations and less able to supply humans with needed services. Loss of Biological diversity in its extreme case causes **BIOLOGICAL ANNIHILATION**.*

*In the recent scientific study, it has been found that Biological annihilation of wildlife in recent decades has led us to sixth mass extinction in Earth's history and is more severe than ever.*

*The present article describes study findings related to biodiversity loss and species extinction rate in the present time. Further the causes for this mass extinction have been analyzed to understand the extent of human intervention in Earth's ecosystem.*

## Introduction

Biodiversity is the variability among living organisms from all sources, including terrestrial, marine, and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species, and of ecosystems.

Biodiversity forms the foundation of the vast array of ecosystem services that critically contribute to human well-being. It is an ever changing process. Species come and go continually – around 99.9 per cent of all those that have ever existed are now extinct. The cause is usually local. For example, a lake might dry up, an island might sink beneath the waves or an invasive species might compete another. This normal loss of species through time is known as the background rate of extinction. It is estimated to be around 1 extinction per million species per year, though it varies widely from group to group.

However now, increasing number of species is disappearing from the face of the earth due to the human activities. This man-made mass extinction represents a very severe depletion of biodiversity, particularly because it is occurring within a short period of time.

## What does the recent report says about biodiversity Loss?

Human beings are now waging war against life itself as they continue to destroy not just individual lives, local populations in vast numbers but also destroy the ecological systems that make life on Earth possible. By doing this we are now accelerating the loss of biodiversity.



In a recently published scientific study ‘Biological annihilation via the ongoing sixth mass extinction signaled by vertebrate population losses’, it has been concluded that Earth’s sixth mass extinction is more severe than perceived when looking exclusively at **species extinctions**. (*Biological Annihilation* is “extremely high degree of population decay” in a short span of time.)

That conclusion is based on analyses of the numbers and degrees of range contraction using a sample of 27,600 vertebrate species, and on a more detailed analysis documenting the population extinctions between 1900 and 2015 in 177 mammal species.’ The research also found that the rate of population loss in terrestrial vertebrates is ‘extremely high’ – even in ‘species of low concern’.

### ***Key Findings***

- ▶ Scientists analyzed both common and rare species on Earth and concluded that a biological annihilation of wildlife in recent decades means a sixth mass extinction in Earth’s history is under way and is more severe than previously feared.
- ▶ Report finds that billions of regional or local populations have been lost. From the common barn swallow to the exotic giraffe, thousands of animal species are in precipitous decline, a sign that an irreversible era of mass extinction is underway.
- ▶ Previous studies have shown species are becoming extinct at a significantly faster rate than for millions of years before.
- ▶ The new work takes a broader view, assessing many common species which are losing populations all over the world as their ranges shrink, but remain present elsewhere.
- ▶ The scientists found that a third of the thousands of species losing populations are not currently considered endangered and that up to 50% of all individual animals have been lost in recent decades.
- ▶ Detailed data is available for land mammals, and almost half of these have lost 80% of their range in the last century.
- ▶ The scientists found billions of populations of mammals, birds, reptiles and amphibians have been lost all over the planet, leading them to say a sixth mass extinction has already progressed further than was thought.
- ▶ Nearly half of the 177 mammal species surveyed lost more than 80% of their distribution between 1900 and 2015.

### ***Implications***

- ▶ The scientists conclude that the resulting biological annihilation will have serious ecological, economic and social consequences.
- ▶ Humanity will eventually pay a very high price for the decimation of the only assemblage of life that we know of in the universe.”
- ▶ They say, while action to halt the decline remains possible, the prospects do not look good: All signs point to ever more powerful assaults on biodiversity in the next two decades, painting a dismal picture of the future of life, including human life.
- ▶ The serious warning needs to be heeded because civilization depends utterly on the plants, animals, and microorganisms of Earth that supply it with essential ecosystem services ranging from crop pollination and protection to supplying food from the sea and maintaining a livable climate. Other ecosystem services include clean air and water.



**Study Report : Case of the Lions**

The researchers point to the “emblematic” case of the lion: “The lion was historically distributed over most of Africa, southern Europe, and the Middle East, all the way to northwestern India. Now the vast majority of lion populations are gone.” Today their habitat has been reduced to a few tiny pockets of the original area.

**Reasons for biological annihilation**

As we have got idea about the report and data associated with it, let's analyse the causes which are leading to biological annihilation.

The reasons are discussed as follows:

- ▶ **Habitat Degradation:** Habitat Loss is the greatest threat to the variety of life on this planet today. It is identified as a main threat to 85% of all species described in the IUCN's Red List (those species officially classified as “Threatened” and “Endangered”).

**Examples are:**

- Rainforests are the main habitats for animals and as lungs of the earth. However, constantly there are huge demands laid on forests. Tropical rainforests are cleared for wood / timber resources, development of petroleum resources, mineral resources, for cash-crop plantations and subsistence farming.
- The world's forests, swamps, plains, lakes, and other habitats continue to disappear as they are harvested for human consumption and cleared to make way for agriculture, housing, roads, pipelines and the other hallmarks of industrial development.
- Increase in population leads to increment in demand for food production. This is leading to cutting of forests to create fields; creating dams that change river flow for irrigation are all examples of habitat destruction.
- Mediterranean ecosystems and temperate forests have already lost 80% of their original cover. The rapidly growing human population is putting more and more pressure on existing habitats.
- Human impact on terrestrial and marine natural resources results in marine and coastal degradation. In 1994, it was estimated that 37% of the global population lived within 60 km of the coast. Poverty, consumption and land-use patterns contribute to the degradation of marine habitats and to the destruction of the species that rely on them to survive.

Habitat changes reduce **biotic integrity** (i.e., ecosystem health), deplete native species, and greatly simplify the system and its habitats (e.g., crop agriculture). The process of habitat destruction is **incremental**. Each piece of habitat may not seem important individually, but there are cumulative effects. The process is more insidious than direct overexploitation.

Other example of habitat destruction is related to Habitat fragmentation, where a habitat that was once continuous is split up into smaller pieces. This has big impacts on animals that can't move between patches of suitable habitat—all of a sudden, their home becomes an island in a sea of roads, construction sites and ranches. Fragmented habitat makes it harder to find food, and harder to find a mate because individuals and populations become isolated from each other. This leads to decreased survival and reproduction of the species in fragmented habitats. Populations existing in fragments become susceptible to **genetic disorders**, **demographic** problems, **environmental** variability, and **catastrophic events**.

- ▶ **Invasion of Alien Species:** Invasive species are the second largest threat to biodiversity after habitat loss. An invasive species is a species that is not native to a particular area, but arrives (usually with human help), establishes a population, and spreads on its own. Invasive species have much larger impacts on an ecosystem than other species. They have a disproportionate effect, which is what makes them so harmful.

Some places are especially vulnerable to invasive species. Islands usually have lots of endemic species and few large grazers or predators; this makes island species more at risk when non-native species are introduced.

#### *Examples of Invasive Alien Species*

- Native to the Amazon basin, water hyacinth (*Eichhornia crassipes*) has invaded tropical habitats worldwide spreading to more than 50 countries on five continents. Water hyacinth blocks waterways, decimates aquatic wildlife and the livelihoods of local people and creates ideal conditions for disease and its vectors
  - Native to the Indian sub-continent, the ship rat (*Rattus rattus*) have caused extinctions and catastrophic declines of native birds on islands and have spread throughout the world
  - Guam, an island in the Pacific Ocean, has lost most of its birds to an invasive species. The brown tree snake was introduced to the island and wiped out three-quarters of the native bird species and two of the eleven native lizard species. Brown tree snakes have been introduced to other Pacific islands and had similar impacts in those places by eating eggs, young and adult birds, and reptiles.
- ▶ **Pollution:** Pollution is one of the primary ways in which humans have caused drastic modifications of wildlife habitat. Burning of non-renewable resources, or resources which are not easily regenerated, such as fossil fuels (oil), and throwing massive amounts of garbage into landfills are ways in which humans alter the atmosphere and land. As a result, wildlife populations are confronted with a bewildering array of pollutants that we release into the environment either by intent or accident.

#### *Examples are:*

- Oil spills, such as the fouling of the coast of southern Alaska by the grounding of the Exxon Valdez, take an immediate toll on many species with the misfortune of living near such blunders.
- Toxic metals can kill adult members of wildlife populations and cause the production of deformed offspring.
- Ocean litter block sunlight and inhibit the growth of organisms, which photosynthesize, or get their energy from the sunlight, such as corals and algae. These animals and plants provide food for grazing fish, which in turn provide food for larger predators, such as barracuda and sharks.
- Use of pesticides and fertilizers on farms has increased by 26-fold over the past 50 years, fueling increases in crop production globally. But there have been serious environmental consequences. Indiscriminate pesticide and fertilizer application may pollute nearby land and water, and chemicals may wash into nearby streams, waterways and groundwater when it rains. Pesticides can kill non-target organisms, including beneficial insects, soil bacteria and fish. Fertilizers are not directly toxic, but their presence can alter the nutrient system in freshwater and marine areas.

- ❑ Light pollution poses a serious threat in particular to nocturnal wildlife, having negative impacts on plants and animal physiology. It can confuse the migratory patterns of animals, alter competitive interactions of animals, change predator-prey relations, and cause physiological harm.
  - ❑ Artificial lighting has been shown to disturb the reproductive cycles of some animals and the migration of birds that navigate using the stars, and to disorient night-flying insects.
  - ❑ Pollution from human activities has caused ozone to be destroyed (or “depleted”) in the stratosphere, leading to the “hole” in the ozone layer. These harmful rays cause sunburns and skin cancer in people, damage crops, and harm marine algae. The good news is that the main ozone-depleting chemicals are being phased out and are not allowed when an alternative chemical can be used instead.
- **Climate Change:** Climate change, also known as global warming, is causing huge changes to biodiversity, and it will continue to threaten species and their habitats for the foreseeable future.

The effects of increased CO<sub>2</sub> in the atmosphere and changing climatic conditions are expected to include:

- ❑ More frequent extreme high maximum temperatures and less frequent extreme low minimum temperatures, and warmer winter conditions
- ❑ Decreased snow cover: satellite observations suggest that the area of the planet covered by snow has already declined by 10 per cent since the 1960s
- ❑ Increased climate variability, with changes in both the frequency and severity of extreme weather events
- ❑ Altered distributions of certain infectious diseases
- ❑ Increased sea levels
- ❑ Increased ocean acidification

#### *Impact on terrestrial species*

Climate change is expected to have a significant influence on terrestrial biodiversity at all system levels – ecosystem, species and genetic diversity. The changing climate will stimulate species-level changes in range and abundance, life cycle and behaviour, and, over time, genetic evolutionary responses. These changes will in turn be linked with changes in natural disturbance patterns and changes in ecosystem structure and function.

#### *Impact on fisheries and aquaculture*

Climate change, more particularly harsher weather conditions, will have impact on the quality, productivity, output and viability of fish and aquaculture enterprises, thereby affecting fishing community. The small-scale fishers may be faced with greater uncertainty as availability, access, stability and use of aquatic food and supplies would diminish and work opportunities would dwindle. Aquaculture development opportunities will increase in particular in tropical and sub-tropical regions. The climate change in warmer regions offers new opportunities as production in warmer regions will increase because of better growth rates, a longer growing season and the availability of new fish farming areas where it was once too cold.

*Examples:*

- Melting ice reduces the ability of polar bears to find enough food as they prefer to use ice as a platform to hunt for prey. This may lead to extinction of polar bear.
- Warmer sea surface temperatures are blamed for an increase in a phenomenon called coral bleaching.
- CO<sub>2</sub> that has been emitted into the atmosphere has been absorbed by the oceans. This has resulted in a decrease in the ocean's pH, which in turn affects the rate at which many marine organisms build skeletons, meaning that reefs damaged by bleaching or other agents would recover more slowly.
- As climate change warms the oceans (even just an increase of about 0.2C per decade, on average), the warmer water (which is lighter) tends to stay on top of what is then a layer of colder water. This affects tiny drifting marine organisms known as phytoplankton.

The pace at which species disappear is picking up as temperatures rise, and things are looking especially troubling in the tropics. It is accelerating species loss on Earth, and by the end of this century, as many as one in six species could be at risk of extinction. But while these effects are being seen around the world, the threat is much higher in certain sensitive regions. The extinction risk does not just increase with temperature rise, but accelerates, curving upward as the Earth warms.

South America, Australia and New Zealand will experience the most extinction, probably because these regions have many species that are endemic and found nowhere else in the world, and they rely on habitats that are not found anywhere else.

- ▶ **Overexploitation:** Overexploitation means harvesting species from the wild at rates faster than natural populations can recover. Currently, about a third of the world's endangered vertebrates are threatened by overexploitation.

Overexploitation presents itself in many forms: exhausting a species as a supply of food or hunting a species for trophies, clothing, medicine or souvenir. In the aquatic biomes, overfishing is a worldwide manifestation of over-exploitation. In the case of terrestrial ecosystems, overgrazing and intensive cropping systems are the chief elements of over-exploitation. Hunting for trophy or medicinal extracts comprises a smaller biomass destruction, but is specifically targeted at some of the most threatened fauna of the planet. These practices are generally overtly mercenary, rather than being motivated by subsistence or hunger, as most of the farming exploitation. For example, tigers have been an integral part of traditional Chinese medicine for over 1000 years and as such, they have been hunted to the brink of extinction as a product of the lucrative trade in tiger body parts.

Sometimes organisms are harvested for purposes other than food. Many animals and plants are collected to be pets, souvenirs, or trophies in a collection of exotic species. Many of these collecting efforts are illegal and are also known as poaching, which is the illegal capture of protected organisms.

- ▶ **Unregulated or Illegal Killing, Hunting or Poaching:** Hunting and poaching rare plants and animals is a human cause of extinction that may represent a major, or dominant factor in the decline of certain species, particularly those that are endemic to a small geographic area, or have a small or slow-regenerating population overall.

Poachers collect rhinoceros horns, parrots, orchids, and many other living things illegally from tropical forests, and also collect fish or corals from marine

ecosystems. The problem is that collecting these animals is bad for their populations and habitats, especially when it is a species that forms a habitat, like coral reefs. Not to mention what it does to the organism itself—many animals die while they are being smuggled for the pet trade, and corals are killed off to make trinkets for souvenir shops.

Unfortunately, across the world, various socio-economic factors drive hunting and poaching of endangered plant and animal species, and where this occurs at unregulated, unsustainable levels, vulnerable species may be pushed towards extinction.

Sometimes killing of endangered plants and animals is due to ignorance or misconceived stereotypes, as is often the case of bats, snakes and arachnids that are commonly, but incorrectly perceived to be aggressive or necessarily dangerous.

**Example:**

- **Whales:** A record three year cruise in the 19th century killed fewer than one hundred whales. – In 1933 almost 30,000 whales were killed, yielding 2.5 million barrels of whale oil. – By 1967, 60,000 were killed, but they yielded only 1.5 million barrels of oil— because the larger species, e.g., Blues and Fins, had been hunted virtually to extinction. – Analyses of genetic diversity suggest pre-exploitation population sizes 6-20 times greater than current estimates

Although regulations and legislation exist at a national or international level (i.e. the Convention on International Trade in Endangered Species), often sufficient infrastructure, awareness or resources are in place for any effective impact but implementation is not upto the mark.

- **Elephant Poaching for tusks:** Despite a ban on the international trade in ivory, African elephants are still being poached in large numbers. Tens of thousands of elephants are being killed every year for their ivory tusks. On the one hand, we can say, we still have around 4,00,000 elephants in Africa, and that seems like a really big number, but then that's cut by more than half of what their populations were in the early part of last century. There were well over 1 million elephants (then).

## Biodiversity conservation

*The tools in the conservation include:*

- ▶ Effective management and restoration of habitats and ecosystems (including establishment of protected areas and protected area networks).
- ▶ Limiting the use of pesticides, herbicides and other chemical pollutants.
- ▶ Enforcement of key agreements such as the Convention on Biological Diversity, Convention on Migratory Species, Convention on International Trade in Endangered Species of Wild Fauna and Flora.
- ▶ Creating incentives and finance for conservation.
- ▶ Equitable sharing of costs and benefits of conservation.
- ▶ Assessment of biodiversity and the social and economic factors affecting it.
- ▶ Captive breeding and reintroduction, including seed banks.
- ▶ Conservation information management and communication.
- ▶ Training and technical capacity-building.

- ▶ Marine sites such as sanctuaries, fisheries management areas, state conservation areas, and wildlife refuges established to protect habitats, endangered species, and to restore the health of marine ecosystems in areas jeopardized by habitat and species loss.
- ▶ An integrated approach to land use and management based on scientific knowledge is needed to protect coastal areas.

## Conclusion

Today, animals are disappearing from the world at an alarming rate. That rate is continuing to grow. Large-bodied species, rare species, and habitat specialists are particularly prone to extinction as a result of rapid human modifications of the planet.

Extinctions can disrupt vital ecological processes such as pollination and seed dispersal, leading to cascading losses, ecosystem collapse, and a higher extinction rate overall.

Both the developed and the developing world needs to take initiative. However, it can seem unfair for developed nations to blame developing countries for habitat and biodiversity loss when developed countries have already destroyed so much of their own habitats and biodiversity in the process of development. It is true that citizens of developed countries take more than their fair share of resources and it is unsustainable for everyone on the planet to live like someone from a developed country. However, in addition to reducing consumption in developed countries, slowing habitat loss in developing countries is essential for conservation biology.



## ENVIRONMENTAL ISSUE

# Tribunal Order on Ganga and Implications



*In the recent order to save Ganga, the National Green Tribunal (NGT) banned the dumping of any kind of waste within 500 metres of the holy river Ganga's edge and called for Rs.50,000 fine on those who violate rules. NGT also instructed that 100 meters from the edge of the river should be declared a "no-development zone."*

*The present article describes the key achievements of Namami Gange Programme and analyses the shortcomings in programme implementation as listed by the National Green Tribunal in the last two years.*

## Introduction

- ▶ The Ganga is one of the world's filthiest rivers, with tons of raw sewage and industrial waste dumped into it daily. To clean up Ganga, government allocated Rs.20,000 crore for the five years commencing 2015-2020. Till now, the government has spent over Rs.7,000 crore in two years to cleanse the Ganga which still remains a serious environmental issue. There are considerable unutilized funds as of now, besides the huge funds that have been made available under the national project.
- ▶ National Green Tribunal (NGT) has given directives in the past to protect the river from pollution. After passing a slew of measures to rejuvenate the Ganga between Haridwar and Unnao, the NGT has now shifted focus to clean the next stretch of the river passing through Allahabad and Varanasi.
- ▶ NGT further issued a slew of directives including banning all construction activity within 100 metres of the river edge. Also, 100 meters from the edge of the river should be declared a "no-development zone". In a detailed judgment, the tribunal also prohibited dumping of waste within 500 metres from the river and also imposed a penalty of Rs.50,000 on people dumping waste in the stretch between Haridwar and Unnao of river Ganga.
- ▶ Besides NGT has convened a meeting of all stakeholders involved in cleaning of the river from Unnao in UP to the state's border with Bihar, to chalk out an action plan for cleaning the Ganga.
- ▶ The tribunal further said that the government in Uttar Pradesh should be "duty-bound" to shift leather tanneries from Jajmau to Unnao or any other place it considers appropriate within six weeks.
- ▶ The NGT also directed the governments in Uttar Pradesh and Uttarakhand to formulate guidelines for religious activities on the Ghats of Ganga or its tributaries.



- ▶ The NGT order is being seen as yet another move by the Green Tribunal to protect the Ganga river.
- ▶ Earlier this month, the Supreme Court suspended a March verdict that gave the Ganga and Yamuna the same legal rights as human beings by declaring them living entities.

### Namami Gange Programme

Namami Gange Programme is an Integrated Conservation Mission, approved as 'Flagship Programme' by the Union Government in June 2014 with budget outlay of Rs.20,000 Crore to accomplish the twin objectives of effective abatement of pollution, conservation and rejuvenation of river Ganga.

The key achievements under Namami Gange programme are:

- ▶ **Creating Sewerage Treatment Capacity:** 63 sewerage management projects under implementation in the States of Uttarakhand, Uttar Pradesh, Bihar, Jharkhand and West Bengal. 12 new sewerage management projects launched in these states. Work is under construction for creating Sewerage capacity of 1187.33 (MLD). Hybrid Annuity PPP Model based two projects has been initiated for Jagjeetpur, Haridwar and Ramanna, Varanasi.
- ▶ **Creating River-Front Development:** 28 River-Front Development projects and 33 Entry level Projects for construction, modernization and renovation of 182 Ghats and 118 crematoria has been initiated.
- ▶ **River Surface Cleaning:** River surface cleaning for collection of floating solid waste from the surface of the Ghats and River and its disposal are afoot and pushed into service at 11 locations.
- ▶ **Bio-Diversity Conservation:** Several Bio-Diversity conservation projects are namely: Biodiversity Conservation and Ganga Rejuvenation, Fish and Fishery Conservation in Ganga River, Ganges River Dolphin Conservation Education Programme, has been initiated. 5 Bio-Diversity center's at Dehradun, Narora, Allahabad, Varanasi and Barrackpore has been developed for restoration of identified priority species.
- ▶ **Afforestation:** Forestry interventions for Ganga through Wildlife Institute of India; Central Inland Fisheries Research Institute and Centre for Environment Education has been initiated. Forestry interventions for Ganga has been executed as per the Detailed Project Report prepared by Forest Research Institute, Dehradun for a period of 5 years (2016-2021) at project cost of Rs.2300 Crores. Work has been commenced in 7 districts of Uttarakahnd for medicinal plants.
- ▶ **Public Awareness:** A series of activities such as events, workshops, seminars and conferences and numerous IEC activities were organized to make a strong pitch for public outreach and community participation in the programme. Various awareness activities through rallies, campaigns, exhibitions, shram daan, cleanliness drives, competitions, plantation drives and development and distribution of resource materials were organized and for wider publicity the mass mediums such as TV/Radio, print media advertisements, featured articles and advertorials were published. Gange Theme song was released widely and played on digital media to enhance the visibility of the programme. NMCG ensured presence at Social Media platforms like Facebook, Twitter, You Tube etc.
- ▶ **Industrial Effluent Monitoring:** Real Time Effluent Monitoring Stations (EMS) has been installed in 572 out of 760 Grossly Polluting Industries (GPIs). Closure notice have been issued to 135 GPIs so far and others have been given deadlines for compliance to stipulated norms and for installations of online EMS.

- ▶ **Ganga Gram:** Ministry of Drinking Water and Sanitation (MoDWS) identified 1674 Gram Panchayats situated on the bank of River Ganga in 5 State (Uttarakhand, Uttar Pradesh, Bihar, Jharkhand and West Bengal). Rs.578 Crores has been released to Ministry of Drinking Water and Sanitation (MoDWS) for construction of toilets in 1674 Gram Panchayats of 5 Ganga Basin States. Out of the targeted 15,27,105 units, MoDWS has completed construction of 8,53,397 toilets. Consortium of 7 IITs has been engaged in the preparation of Ganga River Basin Plan and 65 villages has been adopted by 13 IITs to develop as model villages. UNDP has been engaged as the executing agency for rural sanitation programme and to develop Jharkhand as a model State at an estimated cost of Rs.127 Crore.

National Mission for Clean Ganga endeavors to deploy best available knowledge and resources across the world for Ganga rejuvenation. Clean Ganga has been a perennial attraction for many international countries that have expertise in river rejuvenation.

Countries such as Australia, United Kingdom, Germany, Finland, Israel etc. have shown interest in collaborating with India for Ganga rejuvenation. Memorandums of Understanding (MoUs) were signed with various Central Ministries viz.- Ministry of Human Resource Development, Ministry of Rural Development, Ministry of Railways, Ministry of Shipping, Ministry of Tourism, Ministry of Ayush, Ministry of Petroleum, Ministry of Youth Affairs and Sports, Ministry of Drinking Water & Sanitation and Ministry of Agriculture for synergizing the Government schemes.

### Reasons for failure in cleaning Ganga

- ▶ The quality of river is dependent on three basic factors:
  - How much clean water flows through different stretches of the river;
  - How much waste merges in it; and
  - How dirty that waste is?
- ▶ The tribunal was not mandated by the Supreme Court to look at how much water flows in the river basin at different points.
- ▶ The Supreme Court is yet to decide on how many dams should be built upstream in the Himalayas. The dams will impound and choke water and will consequently decide how much water flows through the plains. If the river water levels go down, quite logically, the density of pollutants go up in the river.
- ▶ The tribunal has recorded in its judgments that Supreme Court orders to clean up the river have been flouted with impunity for over 30 years.
- ▶ Also, the tribunal has failed to project the impact of future developments in the river basin. For example, what happens when the Centre connects millions of toilets to centralized sewage systems that bring the partly treated sewage into the river?

### NGT review of the Governments work

- ▶ In Feb 2017, NGT observed that “Not a single drop of river Ganga has been cleaned so far,” and rapped the government agencies for “only wasting public money” in the name of the cleaning project.
- ▶ The tribunal asked from the government agencies about how they were executing the ‘Namami Gange project’.

- ▶ NGT blamed the CPCB (Central Pollution Control Board) and other government agencies that are not doing their job properly.
- ▶ Centre has allotted over Rs 2,000 crore under the “Namami Gange” programme for the purpose of cleaning Ganga river and all the public money has been wasted.
- ▶ The tribunal also warned 14 industrial units operating in Bijnor and Amroha districts on the banks of Ganga and “polluting” the river to be ready to be shut down.

### Recent Judgment

- ▶ The judgment comes after 18 months of almost daily hearings by the National Green Tribunal. The tribunal ordered that until the government completes floodplain zoning for the Haridwar-Unnao stretch, 100 meters from the edge of the river on either side would be designated as no development zone.
- ▶ In a detailed judgment, the tribunal also prohibited dumping of waste within 500 metres from the river and also imposed a penalty of Rs 50,000 on people dumping waste in the stretch between Haridwar and Unnao of River Ganga.
- ▶ The tribunal promised that this judgment, if fully implemented would reduce the pollution load on the river by 27% over current levels.
- ▶ This judgment pertains to the stretch between Haridwar in Uttarakhand to Unnao in Uttar Pradesh – the first stretch of the river flowing out of the Himalayas.
- ▶ The earlier decision in January dealt with mountainous stretches of the river basin and had put restrictions on development in those areas.
- ▶ The floodplain zoning will eventually demarcate the final no development/ construction zone, regulatory zone and the activities that can (or cannot) be carried out in the regulatory zone of the floodplain.
- ▶ The green tribunal has lambasted the Centre and the states for failing to save the river. The tribunal said that the river quality has deteriorated over 30 years of government inaction, despite repeated interventions by the Supreme Court.

### Conclusion

The tribunal concluded that PM’s much-flaunted Namami Ganga mission has failed to achieve any success over the past three years. For all practical purposes, the National Green Tribunal is now going to drive it.

Given that the apex court had not been very successful earlier, it is difficult to imagine the judicial fiat this time getting the executive to revamp the entire political economy of the river basin in one of India’s most densely populated areas. It will take nothing less to secure a clean-up. The only hope lies in that the tribunal has kept the case alive to monitor implementation and has given timelines to complete some directives.

## ETHICAL ISSUE

# Abortion, Ethics and Supreme Court

Context

*Abortion is the ending of pregnancy by removing a foetus or embryo before it can survive outside the uterus. An abortion may be caused purposely and is then called an induced abortion.*

*Through the broad sweep of history, women have practiced various forms of birth control and abortion. These practices have generated intense moral, ethical, political and legal debates since abortion is not merely a medico-technical issue but, the fulcrum of a much broader ideological struggle in which the very meanings of the family, the state, motherhood and young women's sexuality are contested.*

*Abortion is one of the most controversial ethical issues because it concerns the taking of a human life.*

## Introduction

In many parts of India, daughters are not preferred and hence sex-selective abortion is commonly practiced, resulting in an unnatural male to female population sex ratio due to millions of developing girls selectively being targeted for termination before birth.

Gender hierarchies, cultural norms, values and image of women in society are very important factors in Indian culture and the topic of abortion is considered very personal.

In India, the matter of termination of pregnancy is often not based on the perceptions of the woman herself, rather religious, socio-economic and societal pressures play a significant role in influencing her decision.

Hence Abortion is one of the most controversial ethical issues because it concerns the taking of a human life. The abortion debate deals with the rights and wrongs of deliberately ending a pregnancy before normal child-birth, killing the fetus in the process.

## Indian abortion law

- ▶ According to the Medical Termination of Pregnancy Act, 1971 (MTP Act), a pregnant woman may undergo abortion under 20-week ceiling.
- ▶ However, if “the continuance of the pregnancy would involve a **risk to the life of the pregnant woman** or of grave injury physical or mental health or there is a substantial risk that if the child were born, it would suffer from such physical or mental abnormalities as to be seriously handicapped,” a woman may abort her foetus after 20 weeks.

- ▶ The MTP Act also overrides **IPC Section 312** which states that “Whoever voluntarily causes a woman with child to miscarry, shall, if such miscarriage be not caused in good faith for the purpose of saving the life of the woman, be punished with imprisonment of either description for a term which may extend to three years, or with fine, or with both; and, if the woman be quick with child, shall be punished with imprisonment of either description for a term which may extend to seven years, and shall also be liable to fine”.
- ▶ The Act allows a woman to get an abortion within the first 12 weeks of pregnancy, provided a registered medical practitioner diagnoses grave danger to the pregnant woman’s physical and mental health. If the foetus is between 12 and 20 weeks old, then the procedure requires permission from two medical practitioners.
- ▶ Repercussions of not following the Law: Those who perform abortions after 20 weeks are criminally liable along with the woman who undergoes the abortion. It is punishable with a maximum of 10 years.

The major problem is that while the Act provided for the qualification of a doctor or practitioner needed to have in order to carry out the procedure, lack of proper infrastructure, planning and awareness lead to large number of illegal abortions.

These qualified doctors are available only in urban areas and there is a dearth of such doctors in the rural areas.

The Act does not mention anything about a woman’s right to terminate a pregnancy beyond 20 weeks if there are foetal abnormalities.

Later it was amended in 2014. The Government of India released the draft of the Medical Termination of Pregnancy (Amendment) Bill to increase the gestation limit from 20 weeks to 24 weeks. The 2014 Amendment also gives the women complete autonomy on abortion in the first trimester and provide for only one practitioner’s approval instead of two in the second trimester. It also expands the base to midwives and non-physician practitioners.

Internationally, a woman can seek an abortion of abnormal foetus. However, each country has its own limit, which in most cases is more than 20 weeks. Switzerland, Great Britain and the Netherlands are the only countries to not have such a ceiling.

### Recent Supreme Court judgments

- ▶ The Supreme Court in July, 2017 has allowed a woman who is in her 26th week of pregnancy to undergo medical termination of pregnancy (MTP) after a medical board concluded that the foetus was suffering from severe cardiac ailments and could pose a risk to the mother’s life.
- ▶ The Supreme Court in January 2017 **allowed** a 22-year-old Mumbai woman to terminate a 24-week pregnancy:
  - Court allowed it after doctors said the foetus was malformed and also posed a risk to the mother’s life, an order that relaxes a 20-week legal ceiling on abortion.
  - The court had on January 11 asked Mumbai’s KEM Hospital to examine the petitioner whose advocate said the woman should be allowed to abort the foetus that was diagnosed with anencephaly.
  - Anencephaly is a congenital defect in which a baby is born without parts of the brain and skull.
- ▶ The Supreme Court in February 2017 **refused** to allow a woman to abort her 26-week foetus that would be born with Down Syndrome:

- ❑ The apex court said that aborting a 20-plus week foetus can be allowed only in cases where there is a danger to the life of the mother or the foetus.
- ❑ Medical reports said the woman's child may suffer from physical and mental problems and with low intelligence, but there was no physical risk to the mother in continuing the pregnancy.
- ❑ Down syndrome is a congenital disorder which causes intellectual impairment and physical abnormalities.
- ▶ In May 2017, the apex court **denied** a plea to abort another 26-week-old foetus, made by a 35-year-old HIV-positive woman who had been sexually assaulted:
  - ❑ The court cited a report prepared by a doctor at the All India Institute of Medical Sciences (AIIMS).
  - ❑ The report claimed that an abortion at such a stage could endanger the mother's life. The court noted that the cumbersome legal battle had resulted in delaying the relief that the 35-year-old woman had sought.

## Ethical issues

Abortion leads to legal, moral and ethical dilemmas. Multifarious issues crop up relating to genetics, medicine, sexuality, jurisprudence, reproductive rights, as well as the foetus's right to life. The battle is between **pro-life supporters** – who condemn abortions considering the death of an unborn child a social death – and **pro-choice supporters**, who believe that women should be in total control of her reproductive life and nobody, not even the state, has the right to tell her what to do.

- ▶ **Is the foetus a person with rights?**
  - ❑ Much debate about the legality of abortion involves debating the legal status of the fetus. If the fetus is a person, anti-choice activists argue, then abortion is murder and should be illegal.
  - ❑ Even if the fetus is a person, though, abortion may be justified as necessary to women's bodily autonomy — but that wouldn't mean that abortion is automatically ethical.
  - ❑ Perhaps the state can't force women to carry pregnancies to term, but it could argue that it is the most ethical choice.
- ▶ **Abortion and Feminism:**
  - ❑ Patriarchy is a term used to describe the inequality of women in the social, legal, political and economic sphere.
  - ❑ Feminism asserted women's right to control their bodies as a foundation of their basic sexual and economic equality with men.
  - ❑ In our society often it is the woman who takes on the main responsibility of parenting. This is one of the reasons that it is important that it is the pregnant woman who decides whether she is able and willing to have a child.
  - ❑ The pregnancy occurs in the woman's body, and it is the woman that needs to either give birth or sign the consent for the abortion.
- ▶ **Does the woman have ethical obligations to the foetus?**
  - ❑ Being pregnant means having a new life growing inside. Whether the fetus is a person or not, and whether the state takes a position on abortion or not, it's arguable that a woman has some sort of ethical obligation to the fetus.
  - ❑ Perhaps this obligation isn't strong enough to eliminate abortion as an option, but it may be enough to limit when abortion can be ethically chosen.



- ▶ **Is Abortion a Murder?**
  - ❑ Murder is a legal concept that describes the unlawful killing of a living person.
  - ❑ The laws regarding abortion do not refer to it as murder.
  - ❑ The pregnancy can either be viewed as part of the woman's body or a separate individual with rights.
  - ❑ People who oppose abortion under any circumstance often use the term 'murder' to describe abortion.
  - ❑ The use of this term is not legally or medically correct.
  - ❑ When people describe abortion as murder it often says more about how they feel about abortion than what it is.
- ▶ **Ethics of personal, bodily autonomy:**
  - ❑ It's arguable that a right to abortion is a right to control one's body and the death of the fetus is an unavoidable consequence of choosing not to continue a pregnancy.
  - ❑ That people have some ethical claim to personal, bodily autonomy must be regarded as fundamental to the conception of any ethical, democratic, and free society.
  - ❑ Given that autonomy exists as an ethical necessity, the question becomes how far that autonomy extends. Can the state really force a woman to carry a pregnancy to term?
- ▶ **Is it ethical to give birth to an unwanted child?**
  - ❑ While anti-choice activists like to hype supposed examples of women having abortions to keep their careers alive, it's far more common that women have abortions because they feel unable to properly care for the child.
  - ❑ Even if it were ethical to force women to carry pregnancies to term, it would not be ethical to force the birth of children who are unwanted and cannot be cared for.
  - ❑ Women who choose to abort when they cannot be good mothers are making the most ethical choice open to them.

## Conclusion

“There are social, financial and other aspects immediately attached to the pregnancy of the woman and if pregnancy is unwanted, it can have serious repercussions. It undoubtedly affects her mental health... it is mandatory on the registered medical practitioner while forming opinion of necessity of termination of pregnancy to take into account whether it is injurious to her physical or mental health.”

Thus the ethical debates should be based on situations also.



## ENVIRONMENTAL ISSUE

# Aerosols Shrinking India's Monsoon

Context

*In a recent research being conducted at Indian Institute of Tropical Meteorology, Pune, studying the monsoon impact of GHGs over the next century has come to this conclusion that aerosols may be weakening rainy season even more than GHGs. Earlier also in 2015, It was reported in the Journal Climate Dynamics that a mix of GHGs, aerosols and changes in forest and agricultural cover was affecting the strength of the monsoon for five decades. This result was based on mathematical modeling and computer simulation.*

## What are Aerosols?

Aerosols are minute particles suspended in the atmosphere. Aerosol is a colloid of fine solid particles or liquid droplets, in air or another gas.

The liquid or solid particles have diameter mostly smaller than 1  $\mu\text{m}$  or so; larger particles with a significant settling speed make the mixture a suspension, but the distinction is not clear-cut.

They are both human-made and natural sources. For example, aerosols can form naturally when pine trees release a chemical called alpha-pinene, an oil that condenses into particles that can be seen suspended as a haze. Other types of aerosol particles form during combustion or other industrial processes in factories and car engines, from burning biomass (such as trees and brush) to clear land for agriculture, and even in cooking fires.

## Impact of Aerosols on climate

Aerosols can affect the climate in two ways, through direct or indirect processes.

- ▶ **Radiation absorption:** A direct process is the immediate effect on radiation absorption. If the aerosol is light in color, it generally reflects solar radiation and causes cooling by reducing incoming energy. If the aerosol is dark it absorbs solar radiation and directly affects the climate through warming.

Different types of aerosols react differently when hit with sunlight. Sea salt particles reflect sunlight back out into space. Black carbon particles from burning of wood or fossil fuels absorb most of the sunlight that hits them.

- ▶ **Cloud formation:** Some aerosols can also encourage the growth of cloud and fog droplets if they have water-attracting properties. However, an abundance of aerosols can make cloud droplets smaller by spreading out the water vapor between many particles. This causes clouds to be more optically dense. They reflect more sunlight, last longer and don't produce as much precipitation. Increased reflectivity of solar radiation and longer lifespan leads to increased

cooling. The release of silver iodide particles into clouds (“cloud seeding”) can help clouds to form water droplets and lead to enhanced rainfall, but too many particles or the wrong type of cloud may actually reduce the chance of rain, and so cloud seeding can be a risky proposition.

- ▶ **Ozone depletion:** Aerosols also can act as sites for chemical reactions to take place (heterogeneous chemistry). The most significant of these reactions are those that lead to the destruction of stratospheric ozone. During winter in the polar regions, aerosols grow to form polar stratospheric clouds. The large surface areas of these cloud particles provide sites for chemical reactions to take place. These reactions lead to the formation of large amounts of reactive chlorine and ultimately, to the destruction of ozone in the stratosphere.

### Human-Made Aerosol

Large fraction of human-made aerosols come in the form of smoke from burning tropical forests, the major component comes in the form of sulfate aerosols created by the burning of coal and oil. The concentration of human-made sulfate aerosols in the atmosphere has grown rapidly since the start of the industrial revolution. At current production levels, human-made sulfate aerosols are thought to outweigh the naturally produced sulfate aerosols.

The concentration of aerosols is highest in the northern hemisphere where industrial activity is centered. The sulfate aerosols absorb no sunlight but they reflect it, thereby reducing the amount of sunlight reaching the Earth’s surface.

Sulfate aerosols are believed to survive in the atmosphere for about 3-5 days. The sulfate aerosols also enter clouds where they cause the number of cloud droplets to increase but make the droplet sizes smaller. The net effect is to make the clouds reflect more sunlight than they would without the presence of the sulfate aerosols.

Pollution from the stacks of ships at sea has been seen to modify the low-lying clouds above them. These changes in the cloud droplets, due to the sulfate aerosols from the ships, have been seen in pictures from weather satellites as a track through a layer of clouds. In addition to making the clouds more reflective, it is also believed that the additional aerosols cause polluted clouds to last longer and reflect more sunlight than non-polluted clouds.

### Impact of Aerosols on Monsoon

A study at the Indian Institute of Tropical Meteorology, Pune, led by climatologist R. Krishnan has stated that a combination of greenhouse gases, aerosols and changes in forest-and-agricultural cover was weakening the monsoon over the last 50-odd years.

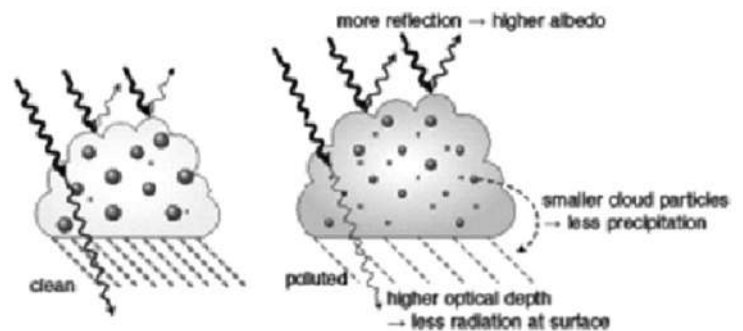
Aerosols from vehicular exhaust, half-burnt crop residue, dust and chemical effluents lead to weakening monsoon. Dust clouds shield the earth from the sun’s rays, depressing land and sea temperatures. The monsoon, which is produced by the difference in temperature between the two, is thus weakened.

### How aerosols weakens monsoon?

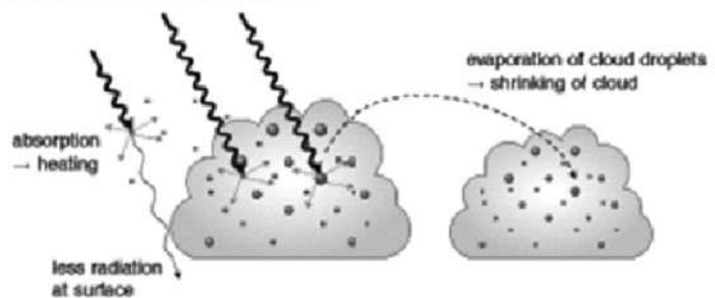
- ▶ A good monsoon is produced by the difference in temperature between land and sea, is thus weakened by aerosol accumulation. Dust clouds shield the earth from the sun’s rays, which reduces land and sea temperatures and thereby reducing the variation between the two.
- ▶ Aerosols are distributed around the planet differently than greenhouse gases, so the effects do not simply cancel each other. Parsing out how clouds—as well as feedback cycles involving clouds—affect regional climate systems remains a high priority for climatologists.

- ▶ Aerosols also have complex effects on clouds and precipitation. Broadly speaking, aerosols are thought to suppress precipitation because the particles decrease the size of water droplets in clouds. However, under some environmental conditions, aerosols can lead to taller clouds that are more likely to produce lightning and strong downpours. In a few places, meteorologists have even detected a cycle in which the frequency of thunderstorms is connected to mid-week peaks in aerosol emissions.
- ▶ Aerosol type plays an important role in determining how aerosols affect clouds. Whereas reflective aerosols tend to brighten clouds and make them last longer, the black carbon from soot can have the opposite effect. Studies of pollution over the Indian Ocean and biomass burning smoke in the Amazon have shown that the black carbon warms the surrounding atmosphere and can cause cloud droplets to evaporate. This process, called the “semi-direct effect,” turns clouds into a smoky haze that suppresses precipitation.
- ▶ Current estimates suggest the cooling driven by aerosol indirect effects is less than half as much as the warming caused by greenhouse gases when averaged over the globe. But these indirect effects are highly uncertain and vary considerably in space and time. Therefore, on smaller space and time scales, the climate effects of aerosols can be significant.

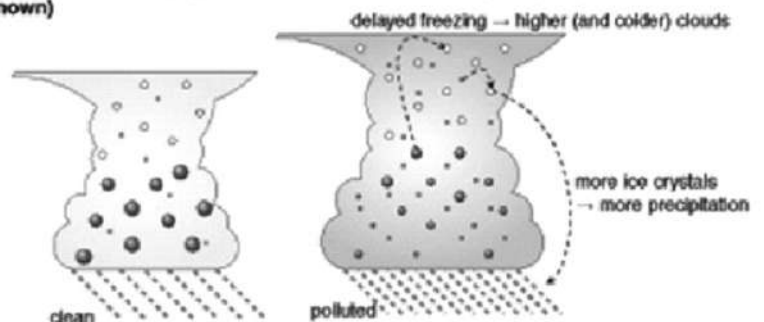
**Cloud albedo and lifetime effect (negative radiative effect for warm clouds at TOA; less precipitation and less solar radiation at the surface)**



**Semi-direct effect (positive radiative effect at TOA for soot inside clouds, negative for soot above clouds)**



**Glaciation effect (positive radiative effect at TOA and more precipitation), thermodynamic effect (sign of radiative effect and change in precipitation not yet known)**



- ▶ The details of aerosol indirect effects are only partially understood, as most instruments cannot measure aerosols within clouds. Climatologists consider the role of clouds to be the largest single uncertainty in climate prediction. Less than a third of the models participating in the Fourth Intergovernmental Panel on Climate Change (IPCC) included indirect aerosol effects, even in a very limited way, and those considered only sulfate aerosols.

Persistent aerosol emissions might lead to more instances of moderate rainfall but could mean anomalous weather and health hazards over large parts of north India. Thus steps need to be taken to reduce its formation.

## GOVERNANCE ISSUE

# India Falters On TB Treatment

**Context**

*A report from two global health agencies pointed out that India's TB control programme does not offer the WHO-recommended nine-month treatment regimen and patients in the country continue to receive the traditional routine that lasts between 18 and 24 months.*

*The report by The Stop TB Partnership and Medicins Sans Frontieres, which reviews gaps between current practices and the best available diagnostic and treatment options in 29 countries, has found that only 13 countries have adopted the shorter regimen.*

**What the report says?**

A WHO panel, after reviewing multiple clinical studies, had in May 2016 recommended the nine-month regimen which experts say offers better treatment outcomes, shorter duration of treatment and lower costs than the 18-24 month regimen.

The 18-24 month regimen on average costs about \$1,600 (Rs 1.04 lakh), while the nine-month regimen is expected to be 40 per cent cheaper. But public health experts point out that patients would need to be selected with care to be eligible for the nine-month regimen.

Patients who seek TB treatment from the government have limited access to a relatively new diagnostic tool called Xpert MTB/RIF - a quick molecular test for diagnosis that can also detect resistance to rifampicin, a primary first-line TB drug.

The report has pointed out that only 5 per cent of patients in the 29 countries who could have benefited from two new drugs - Bedaquiline and Delamanid - approved for treatment of MDR-TB had access to these drugs in 2016. India introduced Bedaquiline last year, offering it to select patients chosen on medical criteria, while it is yet to introduce Delamanid.

**Issues related to TB treatment****► Inadequate diagnostics**

India is still heavily dependent on smear microscopy, one of the oldest ways of diagnosing tuberculosis. This technique can detect tuberculosis in only 70% of cases, and is not a very sensitive test for pediatric tuberculosis, tuberculosis in HIV patients and extrapulmonary tuberculosis.

As per WHO guidelines, all patients suspected of having tuberculosis infections should be screened using the cartridge-based nucleic acid amplification test or CB-NAAT, which can pick tuberculosis bacteria even in small samples or when there are only smaller amounts of bacteria. The machine also picks out bacteria

that are resistant to the tuberculosis drug rifampicin. The results are ready in two hours time.

Last year, India acquired 628 CB-NAAT machines for use across the country. New tuberculosis testing guidelines state that the samples of children, HIV-positive people and patients with suspected extrapulmonary tuberculosis will be tested using these CB-NAAT machine. Many countries such as Indonesia, Brazil, Kenya and Zimbabwe, offer CB-NAAT testing as an initial test for all suspected tuberculosis cases.

► **Disruption in medicine supply**

Every year, some parts of India are affected by medicine shortages. State TB officers of Odisha, Jharkhand and Uttar Pradesh have confirmed stock outs of different TB drugs at different points of time.

The government programme is supposed to ensure that TB patients all over India get their daily regimen of drugs and is phasing out the intermittent regimen, which is consists of three doses every week. The intermittent regimen triples the drug resistance as opposed to the daily treatment. Currently India and China are the only countries among the 29 studied which follow intermittent dosing.

Moreover, two new drugs – Bedaquiline and Delamanid – that have been approved by the World Health Organisation for treatment especially of drug resistant tuberculosis, are not being used extensively in India. While access to Bedaquiline is limited to six centres including Delhi, Mumbai, Chennai, Ahmedabad, and Guwahati, Delamanid has not yet been registered as a drug in the country.

► **Lack of counselling**

Counselling is an important part of the WHO's tuberculosis control strategy and, on paper, India's tuberculosis programme provides for counsellors for MDR-TB patients at district level. However, many of these positions lie vacant.

While India's HIV control programme has Integrated Counselling and Testing Centres where counsellors explain the disease, how drugs should be taken and how the spread of the disease can be prevented, there is very little infrastructure for a similar service in the tuberculosis programme. The National Strategic Plan had aimed to appoint treatment counsellors at every health facility by 2017.

► **The 'missing' cases**

At 41%, India has a huge gap between the estimated and detected cases. The 'missing' cases (the gap between estimated and notified cases) is made up of two groups — one is the undiagnosed TB, and the other is the group that is managed in the private sector but not notified to the national TB control programme. According to WHO's 2016 Global TB report, between 2013 and 2015, India accounted for 34% increase in notifications, which is by the private sector.

TB drug sales in the private sector as well as patient pathways analyses clearly show that a large number of TB patients are being managed in the private sector. So, majority of the missing cases are in the private sector, and that is why private sector engagement is critical for India.

### TB in Children: Recent report

About 5,500 of over 76,000 children tested in nine Indian cities have been diagnosed with tuberculosis, 9% of them with multi-drug resistant TB (MDR-TB), highlighting the silent spread of the disease. Though the actual prevalence of MDR-TB among children in India is not known, the results from a limited number of children tested in this sample, under the Revised National TB Control Programme, is worrying.



According to a 2015 study, of over 600 children who had tested positive for TB in four cities, about 10% showed resistance to Rifampicin, a first-line drug. Since the incidence of TB among children is a reflection of the prevalence of the disease in the community at large, the high prevalence of both drug-sensitive TB and drug-resistant TB in children from these nine cities is a grim reminder of the failure of the health-care system to diagnose the disease early enough in adults and start treatment. Very often, children who test positive for TB have been in close contact with adults with the disease in the same household. With up to a couple of months' delay in diagnosing the disease being the norm, there is a continuing threat of TB spreading among household contacts and in the larger community.

### Measures already taken by government

- ▶ As per the 2015 National Strategic Plan review, the expansion of Xpert in India has been "slow". The Central TB Division plans to increase the number of Xpert machines to over 1,000 by 2019.
- ▶ Though India's TB control policy follows WHO's guidance for Bedaquiline drug for adults with MDR-TB, the drug is currently available only in five cities — Ahmedabad, Delhi, Chennai, Mumbai and Guwahati. Based on the limited use of the drug in these five cities, it has been decided to expand the availability in the rest of the country, as per Union Health Minister.
- ▶ Delamanid, which is another drug to treat MDR-TB, has been approved for use in India by the Drug Controller General of India. Four hundred courses have been ordered as per Director-General of the Indian Council of Medical Research (ICMR).
- ▶ India finally introduced fixed-dose combination (FDC) drugs for paediatric TB. It was introduced in six States and will be extended to the remaining States by the end of this year. The FDCs will go a long way in improving adherence to treatment and accurate dosing for children.
- ▶ Government officials estimate that about half of India's TB patients turn to the private sector where standards of care vary. The government wants the private sector to adhere to the best available standard treatment guidelines. Hence there is urgent need for private sector engagement for India.

### New initiatives for TB control

- ▶ **NIKSHAY- A web based solution for monitoring of TB patients:** To monitor Revised National Tuberculosis Programme (RNTCP) effectively, a web enabled and case based monitoring application called NIKSHAY has been developed by National Informatics Centre (NIC). This is used by health functionaries at various levels across the country in association with Central TB Division (CTD), Ministry of Health & Family Welfare. NIKSHAY covers various aspects of controlling TB using technological innovations. Apart from web based technology, SMS services have been used effectively for communication with patients and monitoring the programme on day to day basis.
- ▶ **National Health Policy, 2017:** The policy acknowledges HIV and TB co-infection and increased incidence of drug resistant tuberculosis as key challenges in control of Tuberculosis. The policy calls for more active case detection, with a greater involvement of private sector supplemented by preventive and promotive action in the workplace and in living conditions. Access to free drugs would need to be complemented by affirmative action to ensure that the treatment is carried out, dropouts reduced and transmission of resistant strains are contained.

If the country is to be rid of TB, we cannot restrict ourselves to vaccines and drugs only. Until each patient is followed through, India's TB control efforts will continue to flounder.



## INTERNATIONAL ISSUE

# India-Bhutan: Special Relationship


**Context**

*The way India responded to incursion by Chinese troops in Doka La (Doklam) is a rare insight into India's very special relationship with Bhutan, which includes military responsibilities towards it. The bilateral relations between the Himalayan Kingdom of Bhutan and the Republic of India have been traditionally close and both countries share a 'special relationship'. India remains influential over Bhutan's foreign policy, defence and commerce.*

*In this context, we shall look at basis for such a special relationship, evolution of friendship treaty between two countries, India's role in Bhutan's economic development and some examples of special relations.*

## What makes India-Bhutan ties special, unique, time-tested and exemplary?

There is an organic relationship that is grounded in idealism as well as realism. Idealism, as it's about fraternal relations – the genuine desire of an elder brother to let the younger brother grow and allow him space to grow. Realism, as the relations are woven in a web of win-win opportunities as the two countries nourishes and reinforces each other's vital national interests. Above all, the India-Bhutan relations are bound by alchemy of trust. When the two neighbours trust each other, the possibilities are boundless and the sky is the limit.

## Friendship Treaty between the two Nations

For much of its history, Bhutan has preserved its isolation from the outside world, staying out of international organisations and maintaining few bilateral relations. Bhutan became a protectorate of British India after signing a treaty in 1910 allowing the British to “guide” its foreign affairs and defence. Bhutan was one of the first to recognise India's independence in 1947 and both nations fostered close relations.

On August 8, 1949 Bhutan and India signed the Treaty of Friendship, calling for peace between the two nations and non-interference in each other's internal affairs. However, Bhutan agreed to let India “guide” its foreign policy and both nations would consult each other closely on foreign and defence affairs. The occupation of Tibet by Communist China brought both nations even closer. In 1958, Indian Parliament declared that any aggression against Bhutan would be seen as aggression against India.

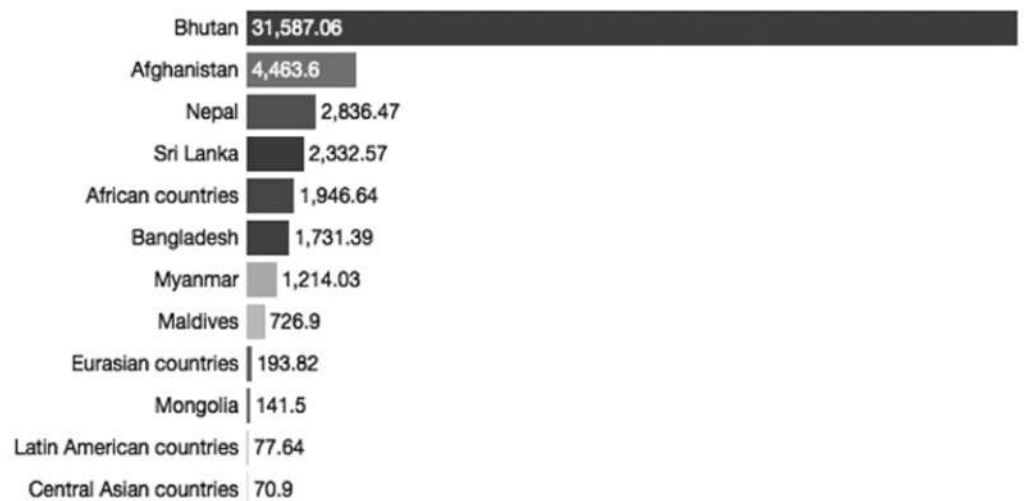
India re-negotiated the 1949 treaty with Bhutan and signed a new treaty of friendship in 2007. The new treaty replaced the provision requiring Bhutan to take India's guidance on foreign policy with broader sovereignty. Under the 2007 India-Bhutan

Friendship Treaty, the two sides have agreed to cooperate closely with each other on issues relating to their national interests. Neither Government shall allow the use of its territory for activities harmful to the national security and interest of the each other. It is on the basis of this treaty, India has sent it's troops to Doklam to protect Bhutan's territorial sovereignty.

**Financial Assistance to Bhutan**

Bhutan is the largest beneficiary of India's foreign aid. Government of India's Assistance Package for Bhutan's 11th Five Year Plan (2013 to 2018) assistance of Rs.4500 Crores is significant part of total outlay of the plan which is of Rs.6600 crores. Additionally, GOI agreed to provide Rs.500 Crore as Economic Stimulus Package, to boost the Bhutanese economy and help Bhutan overcome the problems arising out of the acute INR shortage. From period between 2000-2017, Bhutan has received significantly higher Aid from India as compared to all other aid recipient countries put together.

India's Foreign Aid, 2000-01 To 2016-17



Figures in Rs crore  
Source: 'Notes on Demands for Grants' for Ministry for External Affairs in Union Budgets 2001-02 to 2017-18

**Some Other Aspects of Mutual Assistance**

When Himalayan kingdom decided to embrace democracy, India was quick to share its expertise and experience in bolstering democratic practices and institution-building in that country. Officials of the Bhutanese Parliament have been attending training programmes conducted by the Bureau of Parliamentary Studies and Training (BPST) in the Indian Parliament.

India has funded nearly all of Bhutan's landmark projects, including the airport at Paro, the Bhutan Broadcasting Station, the Bhutan-India microwave link, 1 million-tonne Dungsum Cement Plant, Bhutan Institute of Medical Sciences, and all exploration, survey and mapping of mineral resources.

In 2003, the then King Jigme Singye Wangchuk personally led the offensive by the Royal Bhutan Army to cleanse ULFA training camps from the Bhutanese soil.

However, it's a relationship based on reciprocity. If India has been generous with funds and developmental assistance, Bhutan has consistently backed India's claim for a permanent seat in the UN Security Council. Bhutan has also backed New Delhi's position on a nuclear-weapon-free zone in South Asia, the Comprehensive Test Ban Treaty and the 1998 nuclear tests at Pokhran.

## Problem areas

- ▶ Up until the 1990s, Bhutan has enjoyed more or less protected status in its trade relations with India. With economic liberalization on the rise in India, however, Bhutan is facing a gradual loss of this status, and unless Bhutanese industries are able to remain competitive they could lose their market share in the increasingly open market in India. Bhutan has already felt the impact of the reform in India's subsidy policies that has resulted in a gradual phasing out of subsidies and a decrease in its budget for assistance to Bhutan. Bhutan will also have to face the effects that would be brought on by India gradually moving toward privatizing its power, petroleum and other traditional public sectors.
- ▶ The issue of increasing the price of electricity generated from Bhutan's Chukha hydropower project may become another bone of contention between India and its Himalayan neighbour. India withdrew all subsidy on cooking gas and kerosene that it had been providing to Bhutan.
- ▶ Over the last decade or so, the illicit establishment of camps by the United Liberation Front of Assam (ULFA), National Democratic Front of Bodos (NDFB) and the Kamtapuri Liberation Organization (KLO) militant outfits in the dense jungles of south-east Bhutan has been a matter of great concern and security threat for Bhutan. In addition to hampering businesses and the implementation of development activities in many parts of the country, the presence of these militants is a potential cause of affecting the friendly relations enjoyed by Bhutan and India.

## Conclusion

It is beyond doubt that India and Bhutan have a special relationship which has withstood test of time. The biggest testimony of this relationship in current context is that, China has made inroads into countries like Nepal, Sri Lanka and Bangladesh by offering to build ports, roads and using its economic clout to make other investments. However, it has been unsuccessful in case of Bhutan.

The current stand-off at Doklam Pleatue is a test for India-Bhutan Bond. There are concerns in Bhutan about India's ability to protect Bhutan against China, but India's posture in current stand-off have pacified such concerns. Testimony of India's relation with Bhutan should also be seen by other neighbouring countries as nature of India's approach towards its neighbours.

It is expected that this bilateral relationship would flourish greatly and would set the path of peace and tranquility in the region.

## INTERNATIONAL ISSUE

# Chumbhi Valley and Doklam Plateau

Context

*China claims Doklam plateau, an 89 sq km pasture that falls close to Chumbi valley at the corner of India-Bhutan-China tri-junction and is not very far from the Sikkim sector.*

*China started constructing a road in the disputed territory of Doklam plateau and Chumbhi valley, to which India and the Royal Bhutanese Army has raised an objection. India intervened in the crisis and asked China to halt its construction work.*

*Chinese troops asked India to remove two bunkers that were set up in 2012 at Lalten in Doklam plateau. The two bunkers were reportedly positioned by the Indian Army as a backup option. Later, the two bunkers were destroyed by the Chinese bulldozers on the night of June 6 after China stated that neither India nor Bhutan had any claim over the region.*

*Soon, there was a standoff between troops of both countries with PLA and Indian Army sending immediate reinforcements to the region. At a flag meeting later, China asked Indian troops to withdraw from the Doklam region. In the aftermath of the standoff, China refused to allow the entry of Kailash Mansarovar pilgrims into its territory through the Nathu La Pass on the Sikkim border.*

*The current article analyses the significance of border territories, the history of Chinese cartographic aggression and the current status of standoff between India Bhutan and China over the Doklam Plateau and Chumbi Valley.*

## Introduction

The Doklam plateau has become the unlikely scene of the latest India-China imbroglio. The region falls within Bhutanese territory, but this is now questioned by China.

Recently, China started constructing a road in the disputed territory of Doklam plateau and Chumbhi valley, to which India and the Royal Bhutanese Army has raised an objection. India intervened in the crisis and asked China to halt its construction work. The incident stems from differences between Bhutan and India on the one hand and China on the other as to the exact location of the tri-junction between the three countries.

China's current claims over the Doklam plateau should be seen as yet another instance of cartographic aggression, which China often engages in. It is, however, China's action of building an all-weather road on Bhutan's territory, one capable of sustaining

heavy vehicles, that has prompted Bhutan and India to coordinate their actions in their joint national interests, under the terms of the 2007 Friendship Treaty.

### Indo-Bhutan-China Borders

The complex tri-junction frontier between India-Bhutan-China can be understood by analyzing the significance of Sikkim, Nathu-La pass and Chumbi valley.

#### Sikkim: Strategic Importance

- ▶ Sikkim's 204km (approx) border with China's Tibetan Autonomous Region (TAR) remains heavily disputed and unsettled.
- ▶ The strategic importance of Sikkim was realized in 1960s during the 1962 Indo-China war and subsequent clashes at Nathu La and Cho La in 1967. Sikkim is a strategic territory for both India and China. Sikkim borders countries such as Nepal and Bhutan, in which India and China are competing to have influence.
- ▶ Sikkim also lies very close to the Siliguri corridor (also called as the Chicken neck corridor), which if cut in the case of war or otherwise would cut the connection between mainland of India and the North-eastern states.
- ▶ For the Chinese side, close religious contact between Sikkim's Buddhists and their Tibetan counterparts is a matter of concern. Sikkim's Rumtek monastery acts as the seat of Karmapa (one of the most important leaders in Tibetan Buddhism), whose position is presently disputed by both nations. Close proximity of Tibetan Autonomous Region (TAR) to Sikkim and the presence of people of Tibetan descent in Sikkim is also a matter of concern for China.
- ▶ As a part of cultural diplomacy and people-to-people contact, India has announced e-visa facility for Chinese tourists. The two sides in 2015 also signed an agreement that provides an additional route for the annual Mansarovar Yatra through Nathu La Pass in Sikkim, in addition to the existing Lipulekh Pass in Uttarakhand.
- ▶ Ironically, the route through Nathu La pass is viewed as around about and circuitous alternative route for pilgrims, given the fact that Kailash-Mansarovar is located close to the Uttarakhand-Nepal-Tibet tri-junction. The new route entails a long and arduous detour for the pilgrimages.

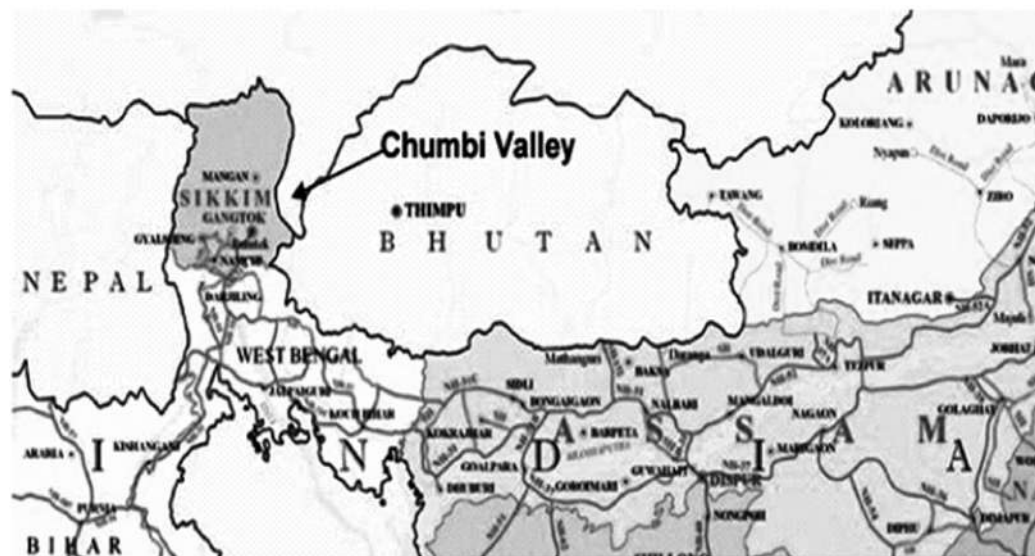
#### Nathu La Pass

- ▶ After the 1962 border war with China, Nathu La and Jelep La, the two main passes, which connect Sikkim with Tibet, were closed for trade.
- ▶ Lhasa, which is the capital of Tibet is barely 425 km from Nathu La. In June 2006, the Nathu La Pass, a century-old trading post, which is 4,545 meters above sea level was reopened after being closed for 40 years.
- ▶ In 2003, both countries agreed to resume trade through Nathu La pass and signed the declaration of principles for relations and comprehensive cooperation including the memorandum on expanding border trade that provided for the formal reopening of Nathu La as a border trade pass between Indian and China.
- ▶ In 2003, China invested about 200 billion RMB (USD24.3 billion) in infrastructure projects in the western region. China has further unveiled its plans to extend the Chinese National Rail Network to the border with India. Nathu La will help China in connecting to Kolkata, the closet warm water port to Lhasa.
- ▶ It is envisaged that a fully equipped route across Nathu La has the prospect to change the trade in this sector of Asia as the distance from Kolkata to Lhasa through this route is less than 1200 km.



- ▶ Trade through Nathu La is in the interest of people from both sides of the border and would bring economic prosperity. However, the flip side of the problem is small traders may face competition from the Chinese market competition and the market in the region would be flooded with cheap Chinese goods and would make the indigenous market less competitive.
- ▶ The benefit of opening Nathu La is not only for economic prosperity. The strategic and political dimensions must also be considered.

### Chumbhi Valley and Doklam Plateau



Location of Chumbi Valley

- ▶ Chumbi Valley is located at the tri-junction of India-China-Bhutan. The region is close to India's Siliguri Corridor (Chicken Neck). The Siliguri Corridor connects the rest of India with the North-east, and Nepal with Bhutan.
- ▶ Chumbi Valley is also of equal strategic significance to China because of the valley's shared border with Tibet and Sikkim. Any development in the Chumbi Valley that alters the status quo in Beijing's favour will have serious implications for India. It is to be noted that China wants to widen the Chumbi valley by claiming areas in the west and north of Bhutan. History of Bhutan-China border dispute starts from 1950 and bilateral talks to resolve the issue started from 1984. In the event of a war, China could seek to cut off the Siliguri corridor.
- ▶ In the event of war, India's Brigade-sized military presence inside Bhutan, stationed at Ha, allows it to attack the Chumbhi valley from two sides, potentially cutting off Chinese troops stationed facing Sikkim.
- ▶ But China's recent assertions in the area are portentous for Bhutan which has never faced territorial issues with the China in the past. China, citing the 1890 China-Britain treaty, calls Doklam its own while Bhutan has disputed the fact saying the convention applies to the India-Bhutan border, not Bhutan and China.
- ▶ China has long eyed this area. It has been keen to establish its physical presence in a region that it claims belongs to China according to the 1890 Convention. With China's Belt and Road Initiative (BRI) gaining momentum, and completion of infrastructure programmes such as the Lhasa-Shigatse Railway, China appears to have turned its attention to the Doklam plateau, eyeing an opportunity to establish a strong presence close to the Indian border.

**How is the dispute/ standoff affecting India-Bhutan-China ties?**

- ▶ China's current claims over the Doklam plateau should be seen as yet another instance of cartographic aggression, which China often engages in. It is, however, China's action of building an all-weather road on Bhutan's territory, one capable of sustaining heavy vehicles, that has prompted Bhutan and India to coordinate their actions in their joint national interests, under the terms of the 2007 Friendship Treaty.
- ▶ Ever since the standoff came to light, there has been a series of arguments, counter-arguments and statements from both sides enough for the foreign ministries to interfere as well.
- ▶ Indian said that the road construction efforts by the Chinese PLA are aimed at getting closer to Doka La, the last Indian military post on its border with Bhutan and China.
- ▶ The construction 'would represent a significant change of status quo with serious security implications for India. India underlined that the two governments had agreed in 2012 that the tri-junction boundary points between India, China and third countries will be finalised in consultation with the countries concerned. Any attempt, therefore, to unilaterally determine tri-junction points is in violation of this understanding.
- ▶ As of now, there is no push and shove at the border although tensions are high. Both countries have said that they would use official diplomatic channels to find a solution to the dispute.
- ▶ China may have temporarily halted its road construction programme, but it appears determined to hold on to its position. India is equally clear that it cannot afford to back down, as of now, having gone to Bhutan's assistance at a time of need. With both sides intent on a show of strength, the potential it has to provoke an incident with unintended consequences is quite high.
- ▶ China and India see the Doklam stand-off very differently. For China, the issue is one of territorial 'sovereignty'. For India, the issue is one of national security. Both appear irreconcilable. China is generally not known to make concessions when it comes to aspects of territorial 'sovereignty'. The entire saga of the Sino-Indian border dispute hinges on this, with China unwilling to make territorial concessions regarding areas over which it once claimed suzerainty.
- ▶ India, for its part cannot be seen to be compromising on its national security. This would be the case if Chinese claims to the Doklam plateau are accepted and the tri-junction is accepted to be further south at Mt. Gipmochi. It would bring China within striking distance of India's vulnerable 'Chicken Neck', the Siliguri Corridor, the life-line to India's North-east. This has always been seen as India's 'Achilles heel', and ensuring its security has figured prominently in India's calculation from the beginning. The possibilities and consequences are both immense and serious.
- ▶ Diplomacy should ordinarily have been the way out, but relations between India and China are far from cordial at present. Even at the highest levels, there are few signs of a thaw. No bilateral meeting took place between Prime Minister Narendra Modi and Chinese President Xi Jinping at the G20 summit in Hamburg earlier this month. There were no consequential meetings subsequently, including during the BRICS conclave.



## Conclusion

India has to revise its frontier policy and should devise policies, which will be pragmatic and proactive. Bureaucratic and procedural hurdles have to be curtailed in order to improve our strategic assets in the Indo-China-Bhutan tri-junction.

India must read proper meanings into China's unwillingness to hold talks at the highest level. China is categorically laying down difficult pre-conditions for talks, though India is open to the idea of discussions without pre-conditions. These are well reflected in the differences seen between the high voltage Chinese reaction and the measured response of the Indian side.

## INTERNAL SECURITY

# Mountain Strike Corps: An Offensive Capability Against Dragon



*Recently Army has kicked off the process to raise the second division of the new mountain strike corps for the "northern borders" with China. The Army had formally begun to raise the first division of 17 Mountain Strike Corps in January 2014 to acquire "quick-reaction ground offensive capabilities" for the first time against China.*

*In this context, we shall try to understand meaning of Mountain Strike Corps and explore reasons for gearing up military capabilities against China. We would also look at some pre-requisites to make Mountain strike corps more effective.*

## Anatomy of Army Field Formations

The army operates 7 operational commands. Each command is headed by General Officer Commanding-in-Chief with the rank of Lieutenant General. A command generally consists of two or more corps. Each command is directly affiliated to the Army HQ in New Delhi.

**Corps:** A corps is an army field formation responsible for a zone within a command theatre. There are three types of corps in the Indian Army: Strike, Holding and Mixed. A corps has Army divisions under its command.

**Division:** Each Division is headed by General Officer Commanding (GOC) in the rank of Major General. It usually consists of 15,000 combat troops and 8,000 support elements. Currently, the Indian Army has 37 Divisions. Each division composes of several Brigades.

**Brigade:** A Brigade generally consists of around 3,000 combat troops with supporting elements. Below Brigade is Battalion which has around 900 troops.

### What is a strike corps?

The dedicated strike formations are tasked to create options for going deep inside the enemy territory and destroy, degrade or disrupt enemy follow on forces, occupy enemy territory, in general, win the war by separating and demolishing enemy's capability. Indian army's existing three strike corps, all deployed and to be used against Pakistan, i.e. there is no operational strike corps to counter China.

The new 17 Mountain Strike Corps will have a strength of around 90,000 soldiers and it will take almost three years to become fully operational. It will consist of two new high-altitude infantry divisions and it will be spread from Arunachal Pradesh to Ladakh along the border with China. So far we only have a defensive mechanism against the China, however with the Strike Corps coming and being raised, we will

also have an offensive mechanism. Along with the Agni series of nuclear-capable ballistic missiles, and backed by the deployment of additional fighter jets, tanks, conventional BrahMos supersonic missiles and the like in the north-east, the 17 Corps is part of the overall plan to achieve “credible deterrence” against the People’s Liberation Army (PLA).

<p><b>INDIA'S STEPS TO COUNTER THREAT FROM CHINA</b></p> <ul style="list-style-type: none"> <li>■ Developing long-range ballistic missile Agni-V</li> <li>■ Raising a new strike corps for China border</li> <li>■ Deployment of BrahMos supersonic cruise missiles</li> <li>■ Proposed air mobile artillery guns for new mountain strike corps</li> <li>■ Sukhoi squadron inducted in Northeast</li> <li>■ A network of advanced landing grounds being made operational in places from Ladakh to Arunachal Pradesh</li> <li>■ Development of military infrastructure</li> </ul>	 <p>A Sukhoi-30 fighter</p>  <p>Agni-V</p>	<p><b>14 STRATEGIC RAILWAY LINES</b></p> <p><b>EASTERN</b> Murkongseid-Pasighat-Rupal, Misamari-Tawang, North Lakimpur-Along-Silapathar</p> <p><b>WESTERN</b> Patti-Ferozpur</p> <p><b>SOUTHERN</b> Jodhpur-Shergarh-Phalsund, Jodhpur-Jaisalmer</p> <p><b>CENTRAL</b> Rishikesh-Karanprayag-Chamoli, Dehradun-Uttarkashi, Tanakpur-Jauljibi, Tanakpur-Bageshwar</p> <p><b>NORTHERN</b> Jammu-Akhnoor-Poonch, Pathankot-Leh, Srinagar-Kargil-Leh</p> <p><b>SOUTH-WESTERN</b> Anupgarh-Chhattisgarh-Motigarh-BKN.</p>
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**Why we need to strengthen our military capabilities against China?**

China’s obsessive territorial greed, deceit and ambition of becoming Regional Super Power indicate towards its hostile attitude. Modernisation of Chinese armed forces is ominous not only along the Tibet border but also in the Indian Ocean Region (IOR). It has shown scant regard to neighbours by unilaterally extending her maritime boundaries, claiming the entire East China Sea and parts of South China Sea and claims entire Arunachal Pradesh as “South Tibet”. It has an ambition of integrating South Tibet into it’s territory.

Indian Army suffers from a serious operational debility. This debility arises from an absence of counter-offensive capability across the watershed of the Indo-Tibet Border or the Line of Actual Control (LAC). China having already firmed up her possession of the Aksai Chin and Shaksgam Valley, she is engaged in preparing grounds for her next phase of expansionism through outlandish claims over the Arunachal Pradesh and many other bits. India’s disputed frontier with China is located all along the difficult mountainous terrain in the Himalayas. The new corps will therefore equip and train itself to meet any eventuality in the high altitude areas.

India currently has three strike corps (1, 2 and 21 based at Mathura, Ambala and Bhopal respectively), all equipped and tasked with offensive capability against Pakistan, but none against China.

Further China has settled her borders with all her neighbours excluding India and Bhutan. China’s claims to 90,000 sq.km. of Arunachal Pradesh are not mere deflection of the Tibet issue. It indicates her resolve to reach the warm waters of the Indian Ocean through as many land routes as possible. Actions which manifest such desire include road and railway through the Karakoram to Pakistan (CPEC), transportation corridors through Myanmar and repeated intrusions in Bhutan; claiming Doklam Plateau (last high ground overlooking the Siliguri Corridor).

Moreover, China is safeguarding Azhar Masood of JeM from being labelled as global terrorist in UN, objecting to the ADB loan to Arunachal, flooding fake currency into India, supplying arms to insurgent groups in India and permitting insurgent camps in Chinese territory. China has also been known to be training Naga, Mizo and other North-East insurgents.

## Benefits

- ▶ The move is a major boost to the Army's war-fighting capabilities along the Line of Actual Control that has witnessed several instances of incursion by Chinese troops.
- ▶ The new mountain corps will require light artillery which can be easily transported, even airlifted in the highest mountains.
- ▶ The Mountain Strike Corps will have additional integral air assets (attack and transport helicopters, UAVs), an armoured regiment, perhaps a T-90 tank regiment, an artillery regiment with light howitzers easily transportable in the mountains and a component of Special Forces.
- ▶ China's strength is the huge logistic network that they have built up in Tibet. By creating a one axis strike corps, we have played into their strengths.

## Steps for effective implementation

However the issues faced are the dichotomy between Environmental conservation and National security. In the recent past, objections from the Environment Ministry have impeded upon the construction of crucial roads in Arunachal Pradesh, Sikkim, Himachal Pradesh, Ladakh and Uttarakhand.

Further establishing permanent infrastructure for troops, including hubs that supply ammunition, and deciding strategically-placed artillery gun positions is a long term and complicated process. Finding the right contractors with the right skills and willingness to work on isolated, remote areas is another big challenge.

The state governments will need to back the plan by facilitating the speedy allotment of land in remote areas.

Aspects which India should work on to make Mountain Strike Core more effective are as follow:

- ▶ The BRO had been tasked in 2006 to construct 73 strategic roads that were to be completed by 2012 but only 30 of 73 projects have been implemented so far. We need to speed up construction of remaining Roads.
- ▶ Next is the requirement of surveillance. This cannot be restricted to border surveillance but must go in depth right up to the objectives of the Mountain Strike Corps. India needs to strengthen its satellite-based surveillance, UAVs and stealth drones capabilities.
- ▶ The formation must have adequate potent firepower and punch. The artillery requirements need to be built up early. It is important to procure M-777 ultra-light Howitzers from the US at the earliest, in addition we need to speed up indigenisation of the Bofors gun.
- ▶ Synergy between the Indian Army and the IAF would be of vital importance in Strike Corps operations.

## Conclusion

China's past history is laced with aggression and blatant disregard to world opinion. The PLA is well ahead of the Indian Army and this ever-widening gap, if not checked and bridged, will catapult Chinese adventurism. We should expect no respite from increasing Chinese pressure. India needs to be prepared for a Chinese thrust into Arunachal Pradesh. We should have the capacity to thwart that by employing not just the Mountain Strike Corps but all elements of national power.

## GOVERNANCE ISSUE

# Assam Floods

Context

*Every year Assam experiences a huge amount of losses due to devastating flood caused by the river Brahmaputra. Floods have affected 9 districts in Assam leaving over one Lakh people homeless.*

*People have lost their homes, as well as their agricultural produce, personal valuables and livestock, all of which they depended on for their livelihood.*

*The flood and erosion problem of Assam is singularly different from other states so far as extent and duration of flooding and magnitude of erosion is concerned and is probably the most acute and unique in the country.*

*Both short term and long term measures have sometimes failed to mitigate the losses caused by flood.*

*Thus, hereby analyzing the issues related to flood management in Assam and reasons for its failure.*

## Introduction

The problem caused by water may broadly be categorized into two major groups' viz. shortage of water and surplus of water. Shortage of water causes drought and surplus water causes flood. The water is the vital ingredients for the survival of human being but sometimes it may cause woe to the human life not due to insufficient water but due to abundant water which in turn causes the natural disaster called as flood.

Assam with its vast network of rivers is prone to natural disasters like flood and erosion which has a negative impact on overall development of the state. The Brahmaputra and Barak river with more than 50 tributaries feeding them, causes the flood devastation in the monsoon period every year.

The losses are more in few places like (Majuli, the biggest river Island), Dhemaji, North Lakhimpur, Dhakuakhana and few places of Barak valley in Assam.

## Reasons

- ▶ **Geographical location of the state:**
  - Assam is situated at the eastern-most part of India. Geographically it is at the foothills of the Himalaya.
  - The physiology of the region is still young and the lesser Himalaya regions are still in the process of forming. The soft rocks, in the absence of green top cover, easily gives way to gushing waters.
- ▶ **Brahmaputra river:**
  - The Brahmaputra Valley is said to be one of the most hazard-prone regions of the country — according to the National Flood Commission of India

(Rashtriya Barh Ayog), about 32 lakh hectares or over 40 per cent of the state's land is flood-prone.

- According to the state's water resources department, the vast network of rivers—the Brahmaputra and Barak rivers have more than 50 tributaries—primarily causes floods during monsoons.
- The flood problem of the state is further aggravated due to flash floods by the rivers flowing down from neighbouring states like Arunachal Pradesh and Meghalaya.

► **River bank erosion problem:**

- Another major problem being faced by the state of Assam is bank erosion by the river Brahmaputra, Barak and its tributaries. Damages caused due to erosion runs into several hundred crores every year.
- Bank erosion by the rivers has been a serious issue since last six decades as more than 4.27 Lakh Hectares of land has been already eroded away by the river Brahmaputra and its tributaries since 1950, which is 7.40 % of area of the state.

► **Embankments:**

- Most embankments across the state are also used as roads by villagers who ply motorbikes, bullock-carts, tractors, cars and trucks on them. Hundreds of families in Majuli and other flood-hit areas have made these embankments their homes by building bamboo houses on them.
- Breaches of embankment due to bank erosion by the rivers have become a common phenomenon. New areas are being affected by erosion every year.
- The riverine fertile agricultural lands of the state are reducing due to erosion, which has a very negative impact on the rural economy of the state.

► **Deforestation:**

- According to the Brahmaputra Board, deforestation in Assam and its neighbouring states have accelerated the process of land erosion.
- According to the Forest Survey of India Report 2015, Arunachal Pradesh's forest cover has reduced by 162 sq km between 2011 and 2015; Assam has lost 48 sq km of forest cover in the same period, Meghalaya 71 sq km, and Nagaland 78 sq km.

► **Weather pattern:**

- The prevailing weather patterns have a strong bearing on the occurrence and intensity of floods in Assam. Monsoon rains from June to Septembers feed the Brahmaputra and the Barak along with their tributaries with excessive water.
- The Cyclonic Depressions in the Bay of Bengal too are responsible for devastating floods like the October 1986 which created havoc in the Nagoan district.

► **Human activities:**

- Besides the natural calamities, harmful human activities like deforestation, accelerated rate of land use, filling up low lying areas for the construction of buildings and reckless urban developments are also responsible for floods in Assam.



- ❑ High rate of population growth in the form of high birth rate and immigration from border countries has led to unscientific encroachment.
- ❑ Human settlements along the river and its various tributaries, thereby restricting the flow to follow its natural spread in times of flood.
- ❑ The building of embankments along the Brahmaputra and its tributaries has only added to flood waters breaking the embankments.
- ❑ Drainage congestion due to building of railway bridges, roads and culverts have restricted the natural flow of waters, forcing it to back flow and break embankments in vulnerable areas.
- ❑ Lack of countryside drainage through construction of sluices at critical points has also added to drainage congestion.

### Area affected by the floods

- ▶ The flood prone area of the state as assessed by the Rastriya Barh Ayog (RBA) is 31.05 lakh hectares against the total area of state 78.523 lakh hectares, i.e. about 39.58% of the total land area of Assam. This is about 9.40% of total flood prone area of the country.
- ▶ Records show that average annual area affected by flood is 9.31 lakh hectares. The flood prone area of the country as a whole stands at about 10.2% of the total area of the country, but flood prone area of Assam is 39.58% of the area of the state.
- ▶ It signifies that the flood prone area of Assam is four times the national average of the flood prone area of the country.

### Impacts

- ▶ Each year, river Brahmaputra that flows through Assam like a lifeline has also wreaked havoc in the state; the past few years have seen a rapid destruction of infrastructure and biodiversity areas in Assam due to floods.
- ▶ According to a report by the Assam State Disaster Management Authority (ASDMA), 1,01,809 people are reeling under the floods in the two districts, where 140 villages are under water. The calamity has damaged crops in 385.67 hectares of land.
- ▶ Karimganj – the worst affected – has over 97,000 people hit by the flood, while more than 4,500 people were hit in Lakhimpur, the report said. Out of the total number of affected, only about 113 people are taking shelter in relief camps.
- ▶ The construction of the embankment from Dijnur to Tekeliphutia on the right bank of river Brahmaputra was aimed at protection of the riverside villagers from annual devastating flood and subsequent intensive river bank erosion, sixty years back. During the process more than ten thousand families were displaced from their paternal land and till today many of these displaced families are living on the embankment without having any compensation from the authority.
- ▶ The flood due to river Brahmaputra as a result of these complications becomes more devastating and erratic in nature. The recurring flood, erosion, sand deposition, displacement, these entire make several thousands of families marginalized and bulldozed the development efforts.
- ▶ The erosion and realignment in construction of the embankment extinguished and eliminated about 18 villages from this area under Matmora and Kherkota GPs (Goan Pnachayats).



## Governments' failure to handle the floods

- ▶ Successive governments have failed to come up with a solution to the state's recurring floods.
- ▶ The lack of research in the area of flood control contributes to worsening the perennial aftermath of floods. RTIs filed by The Quint reveal that the Environment Ministry has spent less than half a percent of its already dipping annual budget on research. From 2012-2013 to 2016-2017, the average percent of the budget spent on research is 0.24 percent.
- ▶ The failure of preventive measures, the slow response of government authorities, and the absence of effective plans to mitigate floods demonstrate an urgent need to reevaluate strategies concerning the same.
- ▶ There is a growing need of pro-active efforts on part of the government to enhance the quality of response to environmental concerns affecting millions across the country. Between 2012-2013 and 2016-2017, the government budget for environment has been slashed by 19 percent. This clearly shows the nature of government reaction to the issue of environment and sustainability.
- ▶ Programmes such as FLEWS (Flood Early Warning System), which sought to provide early warnings about floods in magnitude, region and probable time, seem to have been ineffective in securing the response to floods.
- ▶ Even the infrastructural damage to embankments, dykes, roads, bridges, schools, etc. lead to a loss of several hundred crores to the state. Still no effective measures are taken by the government.
- ▶ Lack of information at the grassroots level and the attitude of policymakers, and to some extent people too, towards dealing with floods. Population explosion brings in the compulsion to risk lives for a few weeks during floods by living right at the river bank.
- ▶ While many states in the country have been crying for water, Assam has been suffering from lack of expertise to control this huge resource.
- ▶ Despite setting up various flood management committees and bodies such as Central Water Commission (CWC) set up in 1945, Brahmaputra Board set up in 1980, Ganga Flood Control Mission formed in 1972 and the National Disaster State Management Authority constituted in 2005, their role in effective flood control remains unclear and efficient management of floods still remains a distant reality.
- ▶ Such regular flooding should mean that the Assam government would have the means to deal with a current crisis. But Assam government claims that it doesn't have enough resources to deal with the four waves of flooding that have swept the state this year.
- ▶ The Centre is not releasing the fund saying that the State can spend from the existing fund ostensibly released earlier, while the State wants a separate funding for disaster relief. The State is claiming that it cannot use the money earmarked for other projects. This tussle between the State and the Centre is badly affecting fund flow increasing plight of the people.

## Solutions

- ▶ There has been excess emphasis for investing in structural solutions like building of embankments and little focus on natural flood control mechanisms based on local topography.

- ▶ While people living along the rivers have traditionally developed their own means of surviving the raging waters, those living around the safer areas next to embankments have often been caught by surprise.
- ▶ It is time for the government and related agencies to review the existing policy of building embankments without considering natural outlets for excess water to flow. This will work best when local people are made stakeholders in finding localized solutions based on local topography.
- ▶ During floods, lack of clean drinking water is the biggest problem. Today, thanks to innovative science, there are several low-cost water filtration and purification technologies available, which people can deploy in times of floods. The government must spend more in creating awareness and making the same available at subsidized cost to people.
- ▶ The construction of Matmora dyke with the use of modern and recent technology of Geo-Tube may help in preventing the erosion and failure of the dyke. All the people living in the flood affected area of Dhakuakhana and its adjoining area are eagerly waiting for its completion. Timely completion of dyke will bring joy and prosperity to the region. The cultivator of the Dhakuakhana will once again see their green paddy field and their life will be more comfortable in terms of health, wealth and education.
- ▶ Constructing reservoirs to hold the water during the monsoons is one way of reducing floods. Besides, countries such as the Netherlands have adopted practices such as 'room for the river', a concept of rejuvenating wetlands that will then work as a flood cushion.

Despite investments by successive central or state governments, it is time to review the long term cost-benefit analysis of measures undertaken and see whether the solutions attempted so far have addressed the problem at its root. Let's hope the government gives the problem the requisite attention and investment to ensure that from now onwards Assam will be better prepared to meet the monsoon.

## SOCIAL ISSUE

# Legalizing Same Sex Marriage


**Context**

*Same-sex marriage, also known as gay marriage, is marriage between people of the same sex. Recently Germany and Malta has allowed same sex marriage. India currently stands with a host of countries such as Nigeria, Ghana, Iran, Saudi Arabia, Mauritania, Afghanistan, Qatar and Pakistan which criminalises homosexuality.*

*In this context we would look at historical and legal aspects related to gay marriage in India.*

## History

Homosexuality has an ancient history in India. Ancient texts like Rig-Veda, sculptures and vestiges depict sexual acts between women as revelations of a feminine world where sexuality was based on pleasure and fertility. The description of homosexual acts in the Kamasutra, the Harems of young boys kept by Muslim Nawabs and Hindu Aristocrats, male homosexuality in the Medieval Muslim history, evidences of sodomy in the Tantric rituals are some historical evidences of same-sex relationships. However, these experiences started losing their significance with the advent of British Colonialism. Section 377 of IPC which was codified in 1860 reflects such western beliefs.

The Western view, since the time of Colonial expansion, has been strongly influenced by reproductive assumption about sexuality. The Indian psyche accepted the Western 'moral and psychological' idea of sexuality being 'pathological' rather than the natural expression of desire, which once used to be part of Indian culture.

## Issues faced by people

Across the globe, there remain many instances where an individuals' sexual orientation or gender identity can lead them to face execution, imprisonment, torture, violence or discrimination. The range of abuse is limitless and it contravenes the fundamental tenets of international human rights law.

Human rights abuses based on sexual orientation or gender can include violation of the rights of the child; the infliction of torture and cruel, inhuman and degrading treatment (Article 5); arbitrary detention on grounds of identity or beliefs (Article 9); the restriction of freedom of association (Article 20) and the denial of the basic rights of due process.

### Examples include:

- ▶ Execution by the state
- ▶ Denial of employment, housing or health services

- ▶ Loss of custody of children
- ▶ Denial of asylum
- ▶ Rape and otherwise torture in detention
- ▶ Threats for campaigning for LGBT human rights
- ▶ Regular subjection to verbal abuse

The exclusion and discrimination have major impacts on the lives of lesbian, gay and transgender persons. This has resulted in the following:

- ▶ Dropping out of school earlier
- ▶ Leaving Home and Family
- ▶ Unable to find regular jobs, have less options than others
- ▶ Being ignored in the community and isolated
- ▶ Unable to access various services and unaware of what they are entitled to
- ▶ Mobility to other areas, (such as the city and urban areas)
- ▶ Lack of family and social support
- ▶ Migrate to other countries for seeking safer livelihood and acceptance
- ▶ Rejected from Religion (Esp. Muslim and some Christian Fundamentalist sects)
- ▶ Attempt suicide
- ▶ Decide to follow their parents to marry opposite sex and then divorce

### **Legal aspects related to gay Marriage**

There is no explicit mention of homosexuality in any of the statute books of India. A person cannot be prosecuted for being a homosexual. But the sexual act of sodomy is a criminal offence.

The major provisions of criminalisation of same-sex acts is found in the Section 377 of the Indian Penal Code (IPC) of 1860. This made it an offence for a person to voluntarily have “carnal intercourse against the order of nature.” In 2009, the Delhi High Court decision in *Naz Foundation v. Govt. of NCT of Delhi* found Section 377 and other legal prohibitions against private, adult, consensual, and non-commercial same-sex conduct to be in direct violation of fundamental rights provided by the Indian Constitution. Thus effectively legalizing same sex marriage and paving the way for future legalization of gay marriages.

On 11 December 2013, the Supreme Court set aside the 2009 Delhi High Court order decriminalising consensual homosexual activity. In explaining the ruling the bench said: “While reading down Section 377, the High Court overlooked that a minuscule fraction of the country’s population constitutes lesbians, gays, bisexuals or transgender people, and in the more than 150 years past, less than 200 persons have been prosecuted for committing offence under Section 377, and this cannot be made a sound basis for declaring that Section ultra vires Articles 14, 15 and 21. The Supreme Court, however, noted that parliament should debate and decide on the matter. This ruling criminalizes same sex intercourse and consequently shuts door for same sex marriage reform in future.

There has been no effort by central government to introduce a bill in parliament in this regard, though SC has in its ruling indicated that it is the prerogative of Legislature to decide this matter. On December 18, 2015, Shashi Tharoor, a member of the Indian National Congress party, introduced a private member bill for the decriminalisation of Section 377, but the bill was rejected by the house by a vote of 71-24.

Any reform which society may want related to legalization of Gay marriages should withstands with legal provisions, but as of today section 377 of IPC does not allow for any such reform.

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### Countries That Allow Gay Marriage

Argentina (2010)	England / Wales (2013)	Ireland (2015)	Portugal (2010)	United States (2015)
Belgium (2003)	Finland (2015)	Luxembourg (2014)	Scotland (2014)	Uruguay (2013)
Brazil (2013)	France (2013)	The Netherlands (2000)	South Africa (2006)	
Canada (2005)	Greenland (2015)	New Zealand (2013)	Spain (2005)	
Denmark (2012)	Iceland (2010)	Norway (2009)	Sweden (2009)	

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### Countries Where Gay Marriage is Legal in Some Jurisdictions

Mexico (2009)

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### Legal position around the world

The first law providing for marriage of people of the same sex in modern times was enacted in 2001 in the Netherlands. Since then, a growing number of governments around the world are considering whether to grant legal recognition to same-sex marriages. So far, two dozen countries have enacted national laws allowing gays and lesbians to marry, mostly in Europe and the Americas. In Mexico, some jurisdictions allow same-sex couples to wed, while others do not.

### Conclusion

Homosexuality is not new nor is it against the Indian culture, it has always existed and with much lesser prosecution, that under Section-377 of the IPC, which is based on British Offences against the Persons Act. Homosexuality is not an offence; it is just a way of pursuit of happiness, a way to achieve sexual happiness or desire.

There is a need to generate awareness related to the real aspects of homo sexuality. The society should come out strongly against such injustice. Law enforcement agencies, the media, the law makers and the judiciary also needs to be sensitized towards welfare of this minority.

## SOCIAL ISSUE

# Domestic Workers: Issues and Laws



*After Independence, the Government passed around 39 central Labour Legislations. Nevertheless, these legislations have benefited only the workers of the organized sector, when in actual fact 93 per cent of labour fall into the unorganized sector. Specifically in this sector domestic workers are most vulnerable and there is need for separate legislation for this sub-sector.*

*In this context, we shall look at reasons to regulate this sector, present legislations which govern this sector and lacunas in these legislations. We would also look at efforts made in the direction of passing legislation for domestic workers.*

## Why “Domestic Work” sector need regulation?

Domestic work refers to housework such as sweeping, cleaning utensils, washing clothes, cooking, caring of children and such other work which is carried out for an employer for remuneration. Domestic work provides an important livelihood source for illiterate women or those with very little education.

Domestic workers come from vulnerable communities and backward areas. The majority are poor, illiterate, unskilled and do not understand the urban labour market. Their work is undervalued, underpaid and poorly regulated. Lack of decent wages, work conditions and defined work time, violence, abuse, sexual harassment at workplace, victimization at the hands of traffickers/placement agencies, forced migration, lack of welfare measures and lack of skill development avenues resulting in stagnation are major issues that they face.

Domestic workers are often exploited at the hands of the so called placement agencies that lure workers from the rural areas to the cities, promising them lucrative salary, lifestyle and benefits. A significant number of these women migrate from states like Jharkhand, Bihar, Bengal and Orissa. Most come from vulnerable communities, lower caste or ethnic minority communities.

Placement agencies also take commissions from employers promising to place skilled workers. Most agencies do not share the information regarding the negotiated wages with the workers. Some adjust a considerable proportion of domestic workers’ salary of the initial months as brokerage expenses, transportation cost etc.

Official statistics place the numbers employed in India as 4.75 million, (of which 3 million are women) but this is considered as severe underestimation and the true number to be more between 20 million to 80 million workers.



## Current Legislation which govern Domestic Work

Some steps have been taken by the Government of India in recent years to provide legal protection and social security to domestic workers. As mentioned above, they have been included in the Unorganized Workers' Social Security Act (2008) and the Sexual Harassment of Women at Workplace (Prevention, Prohibition and Redressal) Act (2013). While the former is a social welfare scheme, the latter aims to protect working women in general. Neither of these recognises domestic helps as rights-bearing workers. There have been other measures as well, like extension of the Rashtriya Swasthya Bima Yojana (RSBY) to cover domestic workers and the notification of Minimum Wages by a few State governments.

Sl. No.	States/Union Territories	Minimum Wage (in Rs.)			
		Per hour	Per day	Per month	Effective date
1	Andhra Pradesh	12.50	100.00	2600.00	10.12.2007
2	Bihar	11.92	95.30	2478.00	01.10.2009
3	Karnataka	9.13 (for 45 minutes)	97.44	2533.00	01.04.2009
4	Rajasthan	10.15	81.00	2106.00	24.05.2008
5	Dadra & Nagar Haveli	-	117.80	-	25.09.2007

Source: Press Information Bureau (PIB)

## Lacuna in Existing Labour Legislation to meet needs of this Sector

An analysis of labour legislations in India shows that domestic workers are not included in the scope of several labour laws because of constraints in the definitions of the “workman”, “employer” or “establishment”. The nature of their work, the specificity of the employee-employer relationship and the workplace being the private household instead of a public place or private establishment, excludes their coverage from the existing laws. Even the placement agencies escape from the ambit of labour laws, because of such definitional issues. To include domestic workers under these laws, definitions will have to be amended. Laws that need such amendments include The Minimum Wages Act, 1948; The Maternity Benefit Act, 1961; Workman's Compensation Act, 1923; Inter-State Migrant Workers Act, 1979; Payment of Wages Act, 1936; Equal Remuneration Act, 1976; Employee's State Insurance Act, 1948; Employees Provident Fund Act, 1952; and the Payment of Gratuity Act, 1972. Only an integrated law can regulate the placement agencies and the conditions of domestic work and provide social security to them.

## Efforts in the direction of Comprehensive legislation

There have been many attempts to legislate for this sector, but without success. The most recent was The Domestic Workers (Conditions of Service) Bill, a Private Member's Bill introduced in 2009. There are other Bills, such as the one developed by the National Commission for Women in 2008, and one by the Domestic Workers Rights Campaign in 2010. However, these efforts were not successful. This is a grave lacuna, especially in light of the ILO Convention 189 (The convention calls for Decent Work for Domestic Workers), and Articles 41 and 43 A of the Constitution of India.

It is under these circumstances that a National Platform for Domestic Workers, developed by a coalition of trade unions to demand comprehensive legislation which should contain the following non-negotiable conditions:



- ▶ The Law should regulate employment, conditions of work and provide social protection simultaneously: This includes fixation of wages and other conditions of work, resolution of disputes and protection of employment besides provision of social security, childcare facilities, housing, training and skill formation.
- ▶ An autonomous Board should be set up in order to function effectively like the ESI or Provident Funds. The Board should undertake Registration of workers and their social security contributions , Regulation of conditions of work, Registration of employers and collection of their contribution for social security, Monitoring of Payment of minimum wages, and set up a help line and also a complaints committee to handle the sexual harassment complaints of domestic workers.
- ▶ There should be a smart card for the workers that is recognized all over and provide portability of social security if the worker or employer has worked in another state.

### Conclusion

The current law do not consider the home seriously as a workplace worth regulation or monitoring. So long as there's a mindset that the home is a private space even when it's a workplace, and domestic work is just house work and not 'proper' work, the plight of domestic workers will continue. And so long as their labour rights remain ill-defined and unprotected, their human rights will continue to be violated.

## ENVIRONMENTAL ISSUE

# Illegalities in Beach Sand Mining

## Context

*With the strangulation of rare earth supplies by China, India's beach sand-mining industry has received a fillip to develop and expand. This has led to rise of illegal mining of beach sand and the minerals mixed with it.*

*Beach mining, mainly near major coastal cities, has created lunar-like landscapes on the coast, destroyed the littoral marine ecosystem, is endangering adjacent wetlands, and has significantly increased the vulnerability of coastal infrastructure to storms and rising sea level.*

*Thus hereby analyzing the issue of beach sand mining and lacunas in governance.*

## Introduction

Monazite is a heavy mineral found naturally mixed in the sands of the beaches of the southern coastline of India, especially in Tamil Nadu. It is an atomic mineral – meaning that it can be processed to yield thorium, which can be further enriched to uranium for use as nuclear fuel.

### A Guide to Beach Sand Mining

Beach sand mining is similar to the mining of river sand, except that this sand is mined from the coasts of Kerala, Tamil Nadu, Andhra Pradesh and Odisha because the sands here have beach sand minerals – also called rare earth minerals or placer minerals.

Sands along the southern Indian coasts are rich in naturally occurring minerals such as garnet, ilmenite, rutile, leucosene, sillimanite, zircon and monazite. Most of these minerals are in great demand globally for use as abrasives and in high performance alloys.

Zircon is used extensively in the ceramics and glass industry as well as to line metallurgical furnaces.

Monazite is an atomic mineral that yields the nuclear fuel thorium, along with lanthanum and cerium. India has 12 million tonnes of monazite, mostly on its southern shores.

Thorium, can be used to generate nuclear power or in nuclear weapons (if used to breed uranium-233). India is now progressing towards a thorium based nuclear program.

As per existing laws, no private player can mine or process monazite. Private players can mine and separate other minerals found in the beach sand mixed along with monazite – such as garnet, ilmenite, rutile, leuzoxene, zircon and sillimanite. These minerals are used extensively as abrasives, and in paint and pigments.

In the recent move of field inspection by the Tirunelveli district administration, the authorities found that illegal mining of sand was taking place over a vast eight hectares in two villages. The deputy director of mines in the district submitted a report stating that 13,70,409.28 metric tonnes (MT) of raw sand and semi-processed sand had been illegally stored in the ‘triggered’ area.

Apart from this, a large mineral separation plant belonging to the Industrial Mineral Company was also found to be in operation. The plant separates beach sand – by removing waste and keeping only the mixture of minerals that needs to be extracted separately.

### Impact of Sand Mining

- ▶ Sand dunes are part of the beach system and provide reservoirs of sand that feed the beach during tropical storms and hurricanes. If they destroyed, coastal lands are vulnerable to flooding.
- ▶ Sand dunes play an important role as barriers against like heavy storms, erosion through waves or floods.
- ▶ Destruction of picturesque beaches causes tourism to dissipate.
- ▶ They serve as habitat for many small animals and plants that are part of the marine and coastal food web and whose loss implies a threat to other species as well.
- ▶ Beach erosion takes place because of sand mining and effect homes and livelihoods.
- ▶ As sand mining destabilises soil structure, river banks and often leaves isolated islands of trees, subsequent flow will erode the banks and islands.
- ▶ Mined areas that show decreased depth of surface flow could result in migration blockages for fish during low flows. When water does not cover much of the streambed, the amount of viable substrate for aquatic organisms is limited. In high-gradient streams, riffles and cobble substrate are exposed; in low gradient streams, the decrease in water level exposes logs and snags, thereby reducing the areas of good habitat.
- ▶ The most likely effects of suspended sediments on fish include: reduction in light penetration and of photosynthesis in micro and macrophytes, resulting in reduced food availability and plant biomass; reduced visibility of pelagic food; reduced availability of benthic food due to smothering; clogging of gillrakers and gill filaments.
- ▶ People live in the coastal areas are under the constant threat and fury of nature wherever the sand mining is carried out. Coastal erosion causes damage to the properties leading to social discontent. Extraction of beach sand exposes coastal areas to the ravages of erosion.

### Solutions:

- ▶ A high-level probe needs to be instituted to examine how such approvals were given and to fix accountability for the same.
- ▶ Considering the high value of the minerals, the probe should also explore possibilities of different types of influences leading to the granting of approvals of mining plans on the part of officials of Indian Bureau of Mines and AMD.

- ▶ The highest levels of officials in the decision making chain should be personally held liable for decisions found to be of doubtful or questionable nature.
- ▶ It is important that a probe be conducted into the role of different officials in permitting such brazen illegalities to take place, accountability fixed and criminal prosecution initiated, if required, against all levels of officials who permitted these illegalities to take place.
- ▶ The patrolling of officials of the Revenue and Police departments should be intensified.
- ▶ A thorough and detailed probe is required by competent investigative agencies like the CBI, to probe into national and international dimensions of illegal transportation and export of atomic minerals over the last two decades.

#### **Some examples of steps taken by Kerala government to control illegal sand mining**

- ▶ A round-the-clock complaint cell has been set up at the Collectorate Control Room for the public to register complaints regarding illegal sand-mining in the district. The cell will function for registering complaints. Appropriate directions will be given by the Additional District Magistrate (ADM) to revenue squads formed to check the illegal practice.
- ▶ Tahsildars have been asked to conduct raids, seize vehicles that engage in the illegal activity and bring them to the notice of District Collector.
- ▶ The Circle Inspector/Sub Inspector have been asked to take necessary steps to control the illegal activity by conducting raids as per the information received from the control cell.
- ▶ It has been asked to take the custody of the sand seized and sell it as per government rates. The Deputy Commissioner of Police (Law and Order) Thiruvananthapuram City and the Superintendent of Police (Rural) have been requested to provide armed police protection for providing protection to revenue squads.

#### **Conclusion**

Mapping of these resources at the district level, identification of appropriate sites for extraction, appraisal of the extraction process, putting in place the required environmental safeguards, and rigorous monitoring of the volume of extracted material is required to ensure sustainability of the entire process.

Promotion of manufactured sand, artificial sand and alternative technologies in construction materials and electronics are also required for reducing the dependence and demand on naturally occurring sand and other beach minerals.

## ENVIRONMENTAL ISSUE

# Climate Change Impact on Sunderbans

Context

*The Sundarbans mangrove forest provides ecosystem services having great importance for local livelihoods, national economy and global environment. Nevertheless, the Sundarbans is threatened by various natural and anthropogenic pressures including climate change.*

*'Mangrove Forest Cover Changes in Indian Sundarban (1986-2012) Using Remote Sensing and GIS', a publication by the School of Oceanographic Studies, Jadavpur University, recently reveals that from 1986 to 2012, 124.418 sq. km. mangrove forest cover has been lost.*

*Hereby, analyzing the significance of Sunderbans and impact of climate change on it.*

## Introduction

Sundarbans is the world's largest contiguous mangrove forest and is a designated world heritage site. Shared by India and Bangladesh, it is home to several flora and fauna species and approximately 4.5 million people. It gets its name from Sundari mangrove tree.

Also, the Sundarbans serves as coastal defense and reduces winds and storm surges, coastal flooding and coastal erosion.

Currently, Sundarbans is threatened by both anthropogenic and natural factors. The natural threats includes climate change induced sea level rise. It has been anticipated that the most biodiverse areas in the Sundarbans will be reduced from 60% to 30% in the year 2100 with 88 cm sea level rise compare to the status in 2001, which would ultimately reduce the production of the forest products and dependent livelihoods.

## Significance of Sunderbans

- ▶ The Sundarbans account for 85 per cent of all mangrove habitats found in India; including 63 of the 69 mangrove plant species found in the country.
- ▶ The local population relies heavily on the mangroves as it provides fodder, fuel wood, tanbarks, fish, honey and medicines.
- ▶ The Sundarbans also provides several significant environmental services such as nutritional inputs to coastal water, generation of nutrients by mangrove roots and biomass deposition.
- ▶ The mangrove swamps and backwaters form a natural barrier to cyclones, tropical storms and tidal surges, providing protection to the inhabited areas and to the coastal fringes and form a protective margin which stabilizes the shoreline.

- ▶ They are also the most carbon rich forests in the tropics with high carbon sequestration potential, meaning their degradation and loss substantially reduce our ability to mitigate, and adapt to, predicted changes in climatic conditions. Their degradation also releases large amounts of 'blue carbon' stored in sediments to the atmosphere, a process that has been underestimated up until recently.
- ▶ It is world largest mangrove delta forest also designated as UNESCO world heritage site; it is also a Ramasar Wetland site and a biosphere reserve.
- ▶ The forests have the endangered royal Bengal tiger and many other threatened flora and fauna.
- ▶ The mangrove forests of the Sunderbans provides an important defence in limiting climate change impacts, providing protection to coastal areas from tsunamis and cyclones.

### Threats faced by Sunderbans mangrove due to climate change

- ▶ **Increasing temperatures:** The temperature of water in Sunderbans increased at the rate of 0.5 degrees C. They have affected both the fauna and the mangroves growth.
- ▶ **Rising sea-levels:** The biggest concern connecting sea-level rise to mangrove ecosystems is the rate of change in elevation of mangrove sediment compared to the rate of sea level rise: "Mangrove systems do not keep pace with changing sea-level when the rate of change in elevation of the mangrove sediment surface is exceeded by the rate of change in relative sea-level". Submergence of mangroves leads to lesser photosynthesis resulting in lower absorption of carbon di-oxide. It also threatens complete submergence of certain islands.
- ▶ **Cyclones:** Frequency of cyclones has increased which leads to frequent crop failure and massive loss of lives and property.
- ▶ **Rise in Salinity:** This is due to lower fresh water outflow, it has led to failure of agriculture and reduction in number of mangroves.
- ▶ **Change in agricultural patterns:** The conventional varieties of rice have depleted in number and due to ever rising demand for food grain Malta and Hamilton rice variety are being grown because they are salt tolerant.
- ▶ **Deforestation:** 5% forests were reduce in last two decades and the land deforested is also submerged in sea thus not rendering it fit for agriculture.
- ▶ **Pollution:** Due to less freshwater, less oxygen is added and this results in untreated wastes. Additionally the Haldia port complex releases many chemicals creating an unsuitable environment for the Sunderbans.
- ▶ **Higher water events:** "Increased levels and frequency of extreme high water events may affect the position and health of mangroves in some of the same ways that storms have been observed to effect mangroves, including through altered sediment elevation and sulfide soil toxicity, however, the state of knowledge of ecosystem effects from changes in extreme waters is poor."
- ▶ **Reduction in fresh water flow:** When freshwater inflow is missing, there is a change in mangrove succession, and freshwater loving species of mangroves are replaced by salt-water loving ones.



### Anthropogenic factors for Sunderbans degradation

India has passed several policies and laws at the Central and State levels in respect of protection of the Sunderbans and measures have been taken to tackle the effects of climate change. However, despite the high level of protection and legal sanction granted to the mangrove forests on paper, there has been large scale encroachment of people into the Sunderban islands and diversion of forest land for agricultural purposes. This has put a tremendous biotic pressure on the Sunderbans.

- ▶ **Encroachment & Poverty:** In the last decade the population density has increased from 929 persons/sq km to 1082 persons per sq/km with extremely poor lifestyle and over 50 percent of them poor.
- ▶ **Over-exploitation of forest produce:** The NTFP and fishes are also important source of food and income for the inhabitant. The climate change has already dwindled the population of fishes. The prawn culture has also replaced the traditional pisciculture this change may not be sustainable.
- ▶ **Lack of effective disaster management program:** Despite frequent cyclones and siltation there is no appropriate strategy for disaster management.
- ▶ **Spread of diseases:** As a result of long standing water the disease are spread very quickly.
- ▶ **Increase in man-animal conflict:** Due to overpopulation of Sunderbans and reducing biomass man-animal conflicts have risen and many a times there have been encounters with the tiger.

### Indian Laws and Regulations

- ▶ The Constitution of India mandates to protect environment under DPSP, additionally National Green Tribunal is setup to take up cases relating to environmental issues.
- ▶ India is also a signatory to Ramsar convention of wetland, UNFCCC Kyoto protocol and CBD.
- ▶ Further National Environment Policy and National Forest Policy have been released with the principal objectives of protecting and conserving critical ecological systems and resources and to ensure equitable access to environmental resources and quality for all sections of society, to ensure judicious use of environmental resources to meet the needs and aspirations of the present and future generations and to integrate environmental concerns into policies, plans, programmes, and projects for economic and social development.
- ▶ NAPCC was also formed to deal with problems of climate change
- ▶ Sunderban Affairs Department & Sunderban Development Board: The functions entrusted to the Sunderban Development Board are primarily
  - Formulation of integrated programme for effective utilization of the resources placed at its disposal;
  - Co-ordination and supervision of execution of plans for the development of the region; and
  - Review and evaluation of the progress of implementation and revision of policies and measures in light of such findings.

### Criticism of Protection Strategies

- ▶ Multiple bodies having overlapping jurisdiction.
- ▶ With increasing sea ingress and rising salinity, there is an urgent need to improve water management and release increased fresh water into the Sunderbans. There has been a lack of initiative in terms of release and management of the freshwater into the Sunderbans.

## Mitigation Strategies

- ▶ **Mitigation Strategies that may be implemented immediately**
  - Zoning Sundarbans according to vulnerability: This would help particularly the vulnerable population living on the islands prone to submergence. Also, this would help prevent the man animal conflict by proper patrolling of the area.
  - Regional planning and rehabilitation & relocation: The planning of resettlement in nearby safe areas and by providing them with jobs like forest guard and promoting tourism in the delta, the expertise of these people can be utilized.
  - Creating opportunities that don't depend on nature: The opportunities of resettlement and rehabilitation should not put additional pressure on the environment and should rather be furthering protection.
  - Developing efficient disaster management systems and disaster resistant homes.
  - Protection & distribution of saline resistant food grains and seeds. Due to extinction of traditional varieties these varieties must be protected and distributed.
  
- ▶ **Long Term Mitigation Strategies**
  - Bolstering existing livelihood patterns: Extensive research to develop saline water tolerant species and sustainable jobs and livelihood options for the people.
  - Awareness and information: The information regarding climate change should be given to people and two way knowledge sharing on the traditional practices to counter the same.
  - Tourism versus Eco-tourism: However tourism increase exponentially but the tourists were not practicing eco-tourism. So the special efforts should be taken to educate tourist about same and penalize any aberrations.
  - Release of additional fresh water: This is an extremely important exercise that needs to be done and it has not been focused properly.
  - Afforestation programs: For the degraded mangroves, but it should be accompanied with conservational practices and proper nourishment should follow.
  - Appropriate fundraising mechanism should be initiated.

## ECONOMIC ISSUE

# Optimising Thermal Power in India

Context

*Energy is an essential input for economic development and improving the quality of life.*

*The distribution of power generation through different sources, however, is uneven. The thermal power contribution to this is around 63%, followed by hydropower contributing around 25%. The share of nuclear power is the smallest with 3%, and the power generation through renewable sources contributes the remaining 9%.*

*The power generation is mainly dominated by coal-based thermal power plants.*

*Optimizing thermal power supply and demand at the regional level is must to reduce the annual operating costs of thermal power plants by 2.8% or Rs.6,300 crore.*

*Hereby, discussing the steps needed for improving thermal power production.*

## Lacunas in thermal power plants in India

- ▶ **Poor efficiency:** India is third-largest producer of coal globally, and yet, is also the fourth-largest importer of coal. India's need for importing such huge volumes of coal (it imports an estimated 30 percent of its coal needs, which helps meet at least 15 percent of power plant needs) arises, at least in part, from the fact that much of the coal produced in the country is of a relatively inferior grade. Only a small part of India's coal reserves is of the anthracite variety, with the rest being of the bituminous, lignite or peat genres. Even within bituminous, the higher-carbon grades preferred by the power plants, are less commonly produced.

That poses a dilemma for the coal-fired thermal plants to either use sub-quality coal that leads to lower energy generation or import a sizable tonnage of coal at higher prices to mix and improve the overall output.

Center for Science and Environment (CSE) has rated this efficiency level as among the lowest among the major coal-based thermal power generating countries, while also noting that the average CO<sub>2</sub> emission of these plants was 1.08 kg per kWh, which was 14 percent higher than China's. The CSC study also noted that efficiencies of some of the coal-based power plants were found to be as low as 16 percent.

Low plant efficiency not only leads to burning of more coal in the plants but also adds to the volume of CO<sub>2</sub> produced.

- ▶ **Transmission and distribution Loss:** T&D losses at around 20%, others peg this as high as 27%. Either figure is too high, particularly when the Centre has ambitious power production targets and plans to ensure power for all by 2019. Most losses are either due to inadequate infrastructure and technical inefficiency that triggers higher losses or result from theft. The latter occurs when power is pilfered directly from power lines or by bribing officials during meter readings, while others tamper meters to minimize billing.
- ▶ **High Cost of maintenance:** The running cost for a thermal power station is comparatively high due to fuel, maintenance etc.
- ▶ **Depletion of natural resources:** Thermal power plants are also known to be the largest consumers of water among all the industries in India.
- ▶ **Other issues:**
  - The plant load factor (PLF) or per unit output of thermal power stations continues to be near all-time lows of under 60%.
  - Private investors planning long-term investments in coal mining or thermal power generation are likely to be put off by the combination of demand, offtake, regulatory and environmental risks.
  - Private power generation companies are reeling under cost-overrun pressure and this, coupled with low electricity prices are hurting their profitability.
  - Much electricity is being sold at higher long-term rates under Power Purchase Agreements (PPAs), in some of these cases even these rates remain below costs and the share of electricity purchased under PPAs is falling, as state electricity boards increasingly rely on the cheap and abundant power available in the spot market.

### Steps needed

- ▶ Greater coordination between states could help reduce the number of coal plants at part load, which would provide greater flexibility to lower the output when renewable energy generation is high. National coordination provides even further cost savings [3.5% savings].
- ▶ Scheduling and dispatch that is optimized at the regional, rather than state level, can support more efficient operations of thermal plants and reduce annual operating costs by 2.8%, or Rs. 6,300 crore.
- ▶ There are several areas on which to focus, for e.g., reducing flue gas heat losses, improving the air pre-heater seal, optimization of turbine steam parameters and operation, using boiler feedwater pump turbine and flexible heat regenerative technology together with maintaining high efficiency.
- ▶ Moreover, appropriate IT organizational structure should be developed along with management information services (MIS). There is also an urgent need for the development of IT modules to cater to various functional requirements such as computerized maintenance management system (CMMS), materials and stores management system (MSMS), operation plant performance management system (OPPMS), business planning module, finance and accounting (F&A) and human resource development modules etc.
- ▶ Develop a new tariff structure that moves away from focusing on energy delivery. Agreements can specify various performance criteria, such as ramping, specified start-up or shut-down times, minimum generation levels, along with notification times and performance objectives that achieve flexibility goals.

## INTERNATIONAL ISSUE

# India and Israel Relations

Context

*PM Modi's visit to Israel in July is historic because he becomes the first Indian premier to visit the country since its creation in 1948. For decades, even as the relationship strengthened, there was a hesitation in New Delhi to publicly acknowledge its significance.*

*With this visit, both the nations have signed the agreements in the field of water, agriculture and technological innovations. This will lead to the development of commercial relations in new sectors and deeper levels of collaboration, broadening and deepening the strong basis of friendship between the two nations in the future.*

## Introduction

India and Israel were born (in 1947 and 1948) through long and violent partition processes, from the ruins of the British empire. Both were caught up in inextricable armed conflicts. However, any meaningful progress in their establishment had been prevented between 1948 and 1992 owing to domestic, regional and international developments related to the Arab-Israel conflict. However, in January 1992, in a surprise diplomatic move, full-fledged diplomatic relations were established between the Republic of India and the State of Israel.

2017 marks 25 years of diplomatic relationship between the two countries. The recent visit is taking place after a long period of anticipation, which symbolizes the outstanding relations between the two democracies, initiated 25 years ago. These relations were developed and evolved through the past two-and-a-half decades and reached their peak in the past two years. Trade grew from \$200 million to about \$4.5 billion in 2016. Taking into account the characteristics of Indian economy, said amount is still very far from the potential.

However, the evolution of Indo-Israeli relations goes far beyond mere figures of trade. India is the largest democracy in the world and anticipated to be the youngest and strongest economy within the next two decades. These characteristics, as well as India's relations with other countries throughout Asia and our region, and shared values with Israel, position India as a strategic partner and even ally.

The relationship between the two countries is considered strategic by both and as such has been supported by the recent government decision to invest more to enhance it even further and to increase the trade by 25% in the same period. At some stages the relationship has gone faster, sometimes not so fast, but it's been a steady upward trend.

## Diaspora Connection with Israel

Most of the Diaspora immigrated to Israel in the 1950s and the 1960s, and the large number of them don't have too many ties back home in India. Most Jewish Indians, about 80,000, have all moved to Israel, and there are just about 4,000-5,000 left in India. So the familial link is not that strong. Also, the community in Israel is not that well-off compared to those in the U.S. and the U.K. People moved there on the basis of their religion, not for economic reasons.

## India Israel Cooperation

During the Cold War, India didn't have open relations with Israel, leaning heavily in favor of the Palestinians.

In recent years, however Israel has strengthened its security ties with India, and has made the Indian subcontinent one of its major export destinations, primarily in military procurement. Israel is the fourth largest weapons supplier to India. Diplomatic visits between the countries have gradually increased since relations were established.

### Why there is change in foreign policy?

Foreign policy, rarely designed to serve a single purpose, and is a tool to pursue security, aid, trade, status, and prestige. Change in Indian foreign policy lies in the transition from a political-diplomatic discourse based on idealism to a discourse based on realpolitik. The realpolitik school holds that a country continually strives toward power, expressed mainly in terms of military capabilities.

Events such as the Arab Spring, the civil war in Syria, and Chinese militarization of the Indian Ocean have caused a reassessment of alliances. The current Indian government regards the Middle East as part of its extended neighborhood, and as critical to India's national interests. Thus India's perception of Israel as a military power and exporter of advanced technologies has led to change in outlook.

## S&T Cooperation

- ▶ India and Israel together have implemented a large number of cutting edge research projects in applied areas covering Agricultural and Medical Biotechnology; Human Genomics; Advanced Materials & Nanotechnology; Imaging Sensor & Robotics; Solar Energy; Communication & Information Technology; and Lasers & Electro-optics. This has led to new knowledge creation through high impact publications in peer reviewed international journals.
- ▶ As a follow-up to the India-Israel Joint S&T Committee meeting which was held in Jerusalem earlier in 2016, the two countries agreed to step up the collaboration in the next two years by providing U.S. dollar 1 million from each side to support new R&D projects in the cutting edge areas of 'Big Data Analytics in Health Care' and 'Security in Cyber Space'.
- ▶ The joint projects will be awarded to the partnering academic and R&D laboratories from the two countries during the next year. As a part of these projects, student exchanges will be encouraged in order to connect the next generation and sustain the pipeline of future collaboration.
- ▶ This collaborative program is particularly significant in context of 'Make in India' and other national missions of the Indian government. The international industrial R&D cooperation of Department of Science & Technology (DST) with MATIMOP, the Israeli Industry Center for R&D, is administered through the Global Innovation and Technology Alliance (GITA) - platform of Confederation of Indian Industry (CII).

## Defence Deals

- ▶ In the months leading up to Indian PM's recent historic visit to Israel, India signed two arms deals, spending \$2.6 billion on Israeli missile defense systems.

### What are the agreements and treaties signed in the recent visit?

The governments have spent time discussing companies that sell medical devices, hi-tech and water systems, and the military ties which is the secretive bedrock of India-Israel relations for decades, have taken a back seat.



Rather than making the visit all about the value of deals signed, Israel's PM Benjamin Netanyahu and Modi appeared intent on playing up shared culture and values, in the hope that this will give commercial ties deeper roots.

Both the leaders are of the view that the future of the relationship lies in development, which includes agriculture, water, innovation, science and technology. This is where we can impact the largest number of lives of people back in India. Therefore Agreements signed during the current visit were only on non-security issues like water and agriculture.

### Key sectors

- ▶ A Memorandum of Understanding (MoU) was signed for setting up of USD 40 million worth India-Israel Industrial Research and Development (R&D) and Technical Innovation Fund.
- ▶ Both the nations are of one view that together our scientists and researchers would develop, build and implement mutually beneficial solutions. Our decision to establish a bilateral Technology Innovation Fund worth USD 40 million for research in industrial development will help us in achieving this goal.
- ▶ Two-way trade and investment flows are the bedrock of a strong partnership. Both the nations agreed on the need to do more in this direction and businesses on both sides should take primary lead in such efforts.
- ▶ **In the water sector**, two agreements were signed to increase cooperation on water conservation and state water utility reform in India. Israel is among the leading nations in the field of innovation, water and agricultural technology and these are also among India's priority. Agreement on efficiency of water and resource use; water conservation and its purification; productivity increases in agriculture are key areas in deepening bilateral cooperation.
- ▶ **In the agriculture sector**, the two countries have agreed for India-Israel Development Cooperation – a three-year work programme in agriculture from 2018 to 2020.
- ▶ **In the Space Sector**, both agreed for cooperation in atomic clocks. Besides, separate MoUs were signed on cooperation in GEO-LEO optical link and cooperation in Electric Propulsion for small satellites.
- ▶ Both the nations also agreed to do much more together to combat terrorism to protect their strategic interests.

### Future Prospects

- ▶ Connectivity between the two countries is still poor, there are no flights from Delhi, and the only direct flight from Mumbai by El Al (Israel Airlines) runs just three times a week.
- ▶ India needs to learn the industry Government cooperation from the Israelis. They have the seamless cooperation between industry, academia and government. We have to learn from their universities, how they have technology transfer companies based right on their campuses, who help convert theory into useful products in a very short period of time.
- ▶ We have a developed system, but the areas where they have start-ups far exceed what we have. We also need to have Israeli companies look more at the Indian market.
- ▶ So far, Israeli start-ups have looked at American investors and buyers, but Indian firms could do the same with larger markets and cheaper production lines.

## POLITICAL ISSUE

# Lacunae in Parliamentary Functioning in India


**Context**

*Parliamentary functioning in India is deteriorating, indiscipline and disruptions in Parliament are much talked about issues. Not only are disruptions a waste of Parliament's valuable time, these significantly taint the image of this esteemed institution.*

*Hereby, discussing the steps needed to make Parliament more representative.*

## Introduction

Parliamentary democracy is a participatory system in which the people, the legislative bodies and the Government have their respective roles to play.

It is a forum that utilizes dialogue and discussion to find workable solutions for problems within communities that satisfy, to a greater or lesser extent, all parties.

In parliamentary form of government, MPs are required to keep the government in check and oversee its functioning. One of the ways in which they do so is by asking ministers questions about the work done by their ministries.

### Parliament functioning are:

- ▶ **Law making functions:** Parliament passes the bills to be notified as acts.
- ▶ **Providing the cabinet:** It is the Parliament which provides the cabinet. No person can continue to be a minister for more than six months unless he is member of either House of the Parliament.
- ▶ **Control over the Cabinet:** It is one of the more important functions and duties of the Lok Sabha to ensure that the ministry remains in power only as long as it has the support of the majority in that house [Art.75(3)].
- ▶ **Daily answerability:** In the Parliamentary system of Government the ministers have to answer questions, reply to calling attention motions, move legislation and justify Government's actions in both Houses of Parliament.
- ▶ **Financial control:** An important function of Parliament is to exercise financial control over the government. The government cannot spend a single penny without authorization by Parliament. Besides, Parliament also monitors spending of government money through its own committee called Parliamentary Accounts Committee (PAC).
- ▶ **A platform for discussion on national issues:** Parliament provides the single largest platform for discussion of all important national and public issues and thereby it creates public opinion on these issues.

## Issues in Parliamentary functioning

- ▶ **Low productivity:** Between the 1950s and the 1960s, the Lok Sabha used to meet for an average of 120 days in a year. In comparison, in the last decade, it has met for an average of 70 days a year. Its productivity in the 2016 winter session was 14%, while that of the Rajya Sabha was 20%. In comparison, the British House of Commons has met for an average of 150 days a year over the last 15 years, while the U.S. House of Representatives has met for 140 days in the same period. Most Parliaments are in session throughout the year.

While our Parliament lacks the power to convene itself, it should have a minimum mandated number of days to meet — with the National Commission to review the working of the Constitution recommending 120 and 100 days for the Lok Sabha and Rajya Sabha, respectively. Odisha has already shown the way, mandating a minimum of 60 days for the State Assembly to sit. Without Parliament meeting often, it will be derelict in its duty to hold the executive to account.

- ▶ **Frequent disruptions:** Winter Session 2016 was Lok Sabha's least productive session in the 16th Lok Sabha. Lok Sabha worked for 15% of the scheduled time and Rajya Sabha for 18%. So far in the 16th Lok Sabha, the average productivity of Lok Sabha is 92% and that of Rajya Sabha is 71%. Both Houses of Parliament saw repeated disruptions on the issue of demonetisation. While Lok Sabha lost 107 hours of scheduled time to disruptions, Rajya Sabha lost 101 hours.

### Side-effects of disruptions are:

- ❑ It prevents action on important legislation.
- ❑ It forces the adoption of critical legislation without debate.
- ❑ It has empowered parliamentarians who lack appropriate skills.
- ❑ It undermines the credibility of party leaders.
- ❑ It undermines respect for the MPs and MLAs.

Thus to improve the situation any motion or discussion has to be taken up if a certain number of MPs gives a written notice. The no-confidence motion requires just 50 MPs (slightly less than 10% of the strength of the House) to be admitted. The threshold can be increased, and suitable thresholds fixed for discussions without a vote and voting motions. For example, there could be a new rule for discussion if a certain percentage of the strength of the House (say 20%) asks for it, and a voting motion if a certain percentage of MPs (say 30%) gives a written notice. A fixed number of parliamentary sittings per year should be declared in calendar.

- ▶ **Poor women representation:** The Lok Sabha and the Rajya Sabha have not seen women MPs cross the 12% mark. In 2012, India ranked 20th from the bottom in terms of representation of women in Parliament. While the 73rd and 74th constitutional amendments enabled the reservation of 33% of seats in local government, political representation by women candidates continues to be subdued, with no significant rise in the number of women MLAs in recent Assembly elections; women constitute less than 10% of the Assemblies in Tamil Nadu, West Bengal, Assam, Kerala and Puducherry. This needs to be changed dramatically, beginning with the passage of the Women's Reservation Bill (108th amendment) reserving 33% of all seats in Parliament and State legislatures for women.

- ▶ **Passing Bills:** To improve the bill procedure, Public participation and feedback in the pre-legislative process is needed. It would strengthen a draft Bill by ensuring that differences in viewpoints are addressed before its introduction. This would make it easier for Parliamentarians to resolve conflicting objectives while considering it in Parliament. In its 2002 Report, the National Commission to Review the Working of the Constitution also recommended that, “all major social and economic legislation should be circulated for public discussion to professional bodies, business organisations, trade unions, academics and other interested persons.”
- ▶ **On debates and research:** MPs have limited or no research staff, leaving them bereft of expert in-house advice — budgetary expenses allocated for their secretarial staff and constituency expenditure leave little for conducting primary research.

Parliament’s Library and Reference, Research, Documentation and Information Service (LARRDIS) currently has a sanctioned strength of 231 staffers but employs 176, about 8% of the total strength of the Lok Sabha secretariat. In comparison, the Congressional Research Service, a part of the Library of the U.S. Congress, employs 600 people, of whom 400 are policy analysts, attorneys and sectoral experts, while the Congressional Budget Office has an additional 200 people. Other parliaments offer funds to hire research teams for MPs. Investing in Parliament’s intellectual capital is necessary and additional budgetary support should be provided to LARRDIS while assisting MPs in employing research staff.

- ▶ **Strengthening the committee system:** Parliamentary standing committees were established to strengthen the expertise of Parliament when examining legislative, financial and policy matters of the government. The effectiveness of these committees is constrained by various factors. The technical support available to parliamentary committees are very limited and only include a secretariat that enables scheduling of meetings, note-taking etc. The reports of standing committees are not deliberated in Parliament and their recommendations are not binding on the government. Further, government ministers are not required to state reasons for rejecting recommendations made by the standing committee. As per current practice, ministers do not depose before a parliamentary committee even if an issue under examination falls under his purview. Most of the inquiries that committees conduct are directed towards officials in the ministry, even if the minister is responsible for making the relevant policy decision. This practice differs from countries such as the UK, where ministers are required to depose before parliamentary committees.

The Chairman of the Rajya Sabha had suggested, “the committee system can be strengthened by having a higher attendance requirement and by the induction of experts in an advisory capacity. The present practice of exempting ministers from appearance before the committees should be reviewed. As in other parliamentary democracies, the examination of witnesses (but not the finalisation of reports) should be open to the public. This would make the public better aware of this important aspect of the work of legislatures.”

## Conclusion

Parliament should be a space for policy and not for politics. Proper steps should be implemented to make it a symbol of democracy.

## GOVERNANCE ISSUE

# Policing A Free Society



*It is much easier to enforce laws in a society where the citizens have, what some would call a healthy, fearful respect, for men with badges on their chests. But as the trend of free society increasing, it raises many questions. Does the job of being a community police officer require attributes that differ from what we have traditionally associated with being a police officer? Do we need a new breed of police officers to handle the challenges of the job in the twenty-first century? Can such a dramatic change in the very culture of policing be achieved?*

*Hereby, discussing these questions.*

## Introduction

The police, by the very nature of their function, are an anomaly in a free society. They are invested with a great deal of authority under a system of government in which authority is reluctantly granted and, when granted, sharply curtailed. The specific form of their authority to arrest, to search, to detain, and to use force is awesome in the degree to which it can be disruptive of freedom, invasive of privacy, and sudden and direct in its impact upon the individual. And this authority, of necessity, is delegated to individuals at the lowest level of the bureaucracy to be exercised, in most instances, without prior review or control.

Yet a democracy is heavily dependent upon its police, despite their anomalous position, to maintain the degree of order that makes a free society possible. It looks to its police to prevent people from preying on one another; to provide a sense of security; to facilitate movement; to resolve conflict, and to protect the very processes and rights—such as free elections, freedom of speech, and freedom of assembly on which continuation of a free society depends. The strength of a democracy and the quality of life enjoyed by its citizens are determined in large measure by the ability of the police to discharge their duties. Thus the quality of policing has a very direct effect on the quality of life in a democracy.

## Main characteristic with the different era of policing

### (Political era):

- ▶ Heavily influenced by politics.
- ▶ Police were more generalists, did lots of different things.
- ▶ Decentralized, not a long chain of command, so not a lot of accountability.
- ▶ Had an intimate relationship with the community.
- ▶ No cars, were on foot patrol.
- ▶ There was citizen and political satisfaction.

**(Reform Era):** Very concerned with crime control, less concerned with public opinion.

- ▶ Intended to be more professional.
- ▶ More centralized, gave more accountability, has a longer chain of command.
- ▶ Distanced more from public.
- ▶ Had cars, no foot patrol, so public only saw them when arresting, assisting or on break.
- ▶ Lost public support.
- ▶ Arguable that police had small impact on the crime rates.
- ▶ 60s/70s: lots of protests/riots, people standing up for their rights, police were enforcement oriented and didn't know how to handle these situations.

**(Community Era):** This era is the good things from the first two eras combined.

- ▶ Back to a wide provision of services, including victim services.
- ▶ Try to breakdown barrier between community/police.
- ▶ Smart policing.
- ▶ Introduced bike patrols, but limitations involved but do interact more with public.
- ▶ This era works to rebuild intimate relationship with the public.
- ▶ More citizen satisfaction.

### Policing a free society

A free society is a society where people shall have the right to exercise unlimited freedom in their own lives, freedom to live in whatever manner they choose, freedom to pursue their own goals, so long as they do not forcibly interfere with the equal rights of others to do the same. Government's only role is to secure each individual's rights.

In those societies police officers are looked upon as overseers making sure no one steps outside of the boxes their government masters have drawn for them.

The police are generally perceived to be tardy, inefficient, high-handed and often unresponsive or insensitive.

Police-public relations remain in a very unsatisfactory state and police partiality, corruption, brutality and failure to register offences were the most important factors contributing to this situation. People also felt that police often harass even those who try to help them; and while by and large people did not think that police are inefficient, they want a change in the style of their functioning. Policemen, in general, did not believe that they are at fault and blamed the system for deficiencies and deviations.

There is a wide discrepancy between what the people expect the police to do and what the police are permitted to do under the law.

Good citizens stopped by the police for traffic violations often blame the police rather than themselves.

Thus policing in these scenario becomes difficult as there are not fearful respect, for men with badges on their chests, the policing has to be done with people participation. This has led to the concept of community policing.

### Community Policing

- ▶ The idea of community policing is a radical departure from traditional notions of policing. Community policing is a paradigm shift that challenges long-standing



conceptualizations of the police and fundamental assumptions about doing police work. As a philosophy, community policing is grounded in a defined set of values that serve as its ethical and moral foundation, values that sought to change both the nature of the tasks police perform and the number of people responsible for determining the desired means and ends associated with policing.

- ▶ The assumptions upon which community policing rest represent a dramatic departure from the past that threatens the values and beliefs embraced by traditional culture of policing.
- ▶ Community policing focuses on crime and social disorder through the delivery of police services that includes aspects of traditional law enforcement, as well as prevention, problem-solving, community engagement, and partnerships.
- ▶ Community policing requires police and citizens to join together as partners. Department-wide adoption of community policing is evidenced by the integration of the philosophy into mission, vision and core values, policies and procedures, performance evaluations and hiring and promotional practices, training programs and other systems and activities that define organizational culture.
- ▶ Community policing is about understanding the mental and moral aspects of human behavior in conflict, and crisis. It is also about recognizing patterns of behavior and conditions that lead to crime and quality of life conditions.
- ▶ Community policing is about developing and using people, their ideas and technology, in that order. Community policing understands that technology should reinforce behavior, not drive it. Community policing mindset understands machines don't fight crime, people do, and they use their minds to remedy problems.
- ▶ Community policing requires going beyond a reactive strategy. It means not waiting to be called, but instead identifying and targeting problems and implementing solutions. Police use conventional and unconventional problem solving and crime fighting methods; foot patrols, bike patrols, surveys and alternatives to random patrol to target community problems.
- ▶ Community policing requires adapting and tailoring services to community needs. We must ensure we have an intensified police presence through larger number of positive community contacts.
- ▶ In community policing, police authority stems not only from the law but also from its legitimacy in the eyes of the community. Legitimacy secures the cooperation of community members in identifying the most pressing issues of law and order within neighborhoods, including those related to violent radicalization.

### Way forward

The police represent a governmental body whose ultimate mission is to protect civil liberties of citizens. This responsibility is paradoxical in the sense that police also represent one of the greatest threats to these liberties. This is especially true when police abuse the authority of their office.

Thus a balance is needed by following principles such as:

- ▶ It should be clearly understood that community policing is a philosophy and not just a set of a few initiatives.
- ▶ The success of community policing lies in citizens developing a feeling that they have a say in the policing of their locality and also making the community the first line of defence. Community policing should not become a mere 'public

relations' exercise but should provide an effective forum for police-citizen interaction.

- ▶ Interaction with people should be organised through 'community liaison groups' or citizen's committees at different levels. It should be ensured that these groups are truly representative. The idea of community policing would be a success if it is people driven rather than police driven.
- ▶ Convergence with activities of other government departments and organisations should be attempted.

## GOVERNANCE ISSUE

# One Nation, One School Board



*There's a platter of choices with various boards like SSC, ICSE, CBSE and IB boards, which create disparities in the education system, and among students. As if this was not enough, the huge gap between private schools and government aided ones only makes a further distinction between the class and the mass.*

*This raises the question - whether we should do away the existing differences of various school boards?*

## Introduction

The quality of education -100 years ago was extremely high, it has degenerated over the years, boiling down the current education pattern to minimal application of fundamentals. India has been home to masterminds like CV Raman, Aryabhata, Ramanujam, Dr. Homi Bhabha and others, who were a reservoir of knowledge.

Given the current state of education, we definitely need to discuss and deliberate on what the format really means and how useful it is. What is important for students — climbing the ladder of success with social and economical knowledge, learning a new topic, exploring something new or converting our imagination into reality?

The current system is limited to knowledge that we derive from books, where little or no emphasis is given to conceptual understanding of subjects. This practice fails in tapping the core potential/intellect of every child. It also suppresses the essence of creative and intuitive minds, limiting the format to mere reading and rote learning.

Further there is wide difference in education pattern region-wise due to presence of different boards.

## Issues

At present there are more than 50 recognised educational boards in India of various types- all India boards like CBSE and ICSE, state level boards, international boards like IB and IGCSE and open schooling boards like NIOS. Each has its own schedules, pedagogy and curriculum. This leads to generation of different issues:

- ▶ Educational boards have different schedules thus students migrating from one part of the country to another often face problems.
- ▶ Policies followed with regards to the number of languages taught and the way they are taught differ drastically. For instance, CBSE follows the 3 language norm upto VIIIth standard and then on its 2 languages, while state boards usually follow the three language formula throughout, the 3 languages usually being English, Hindi and the state language. Students of CBSE schools seldom get to learn the language of the state. Moreover while boards like ICSE provide exposure to classics like the works of William Shakespeare, boards like the CBSE focus more on the communicative aspects of the language.

- ▶ Marking schemes of boards vary considerably - while some are lenient with many students scoring in the higher 90s, in some it is an achievement to cross the 90 figure itself. This creates a playing field which is not at all levelled when it comes to seeking admissions into colleges for courses which are not based on entrance exams.
- ▶ There is disparity in curriculum also. State Boards focuses more on the State History and Culture and misses the Pan India approach.

#### State policies related to education

- ▶ In Tamil Nadu, the State government decreed that as much as 85% of engineering and medical college seats in the State will be reserved for students who had completed the qualifying exam — the XII standard or equivalent certificate — under the State's own board of secondary education. The move followed a dismal showing by State-board students in the National Eligibility-cum-Entrance Test for admission to engineering/medical degree programmes.
- ▶ Simultaneously, in Delhi — where Delhi University college seats, particularly the top-rated ones, are arguably the world's most difficult to get into, with cut-offs in some colleges approaching a ridiculous 100% — the Aam Aadmi Party government passed a resolution in the State Assembly demanding that Delhi University reserve 80% of its seats for students from Delhi.

Example: In few competitive exams weightage is given to the school level examination. The proposal has been a controversial one because when it gives 40% weight to the school board, the question arises as to what is the basis of rationalization in a country where so many boards exist.

In a step towards simplifying and standardizing admissions to engineering schools, various education boards across the country have agreed to standardize examinations at the school-leaving level. The standardization of exams will mean that all boards will conduct examinations of similar duration that have the same number and similar type of questions. It will also change the perception that a certain board is better than another, or that its exams are easier to score in. A standardized question pattern will stop the migration of students from one learning environment to another environment perceived to be better.

Thus, to increase employability of graduates, there is need to adopt the uniformity in school level education. This means, for instance, going for a nationwide CBSE system, instead of State boards of varying quality.

A common entrance will help the state board improve standards and will bring an end to capitation fees. The move is expected to have an impact on coaching schools. This move allows students even from backward areas to compete at the national level and the move will reduce the money spent on appearing for multiple entrance exams.

This will remove regional imbalance and the urban bias in the selection procedure for IITs and other prestigious Institutions.

The government should also support and underline that entrance can be conducted in a specific regional language as well in addition to English and Hindi.

This will help to reduce the influence of coaching institutes; schools need to provide better education.

Hence some of the advantages that outline the **'One Nation One School Board'** are:

- ▶ Higher Standard of learning
- ▶ The elimination of social promotion
- ▶ Reduce high bureaucracy interference
- ▶ Nationwide coverage of an unique model of education

### **Challenges in implementation**

The very format of a single board would mean that the text books and the quality of teaching become crucial and with that will require massive preparations in the nature of a curriculum framework and also teachers' training.

Even under a single board a lot of decentralization would be needed as there are a lot of concerns to be taken care of. Then, there will be schools having primarily first generation learners, schools in tribal areas and schools with no teacher. In such a situation, a uniform system is not possible. Simply introducing uniform text books and syllabus does not ensure uniformity. The challenge is to ensure uniformity in infrastructure and quality of teachers.

### **Way forward**

Apart from replacing the present assessment procedure of giving marks to awarding grades, the government should also explore the possibility of setting up an independent accreditation body for schools to ensure quality.

Government should ensure uniformity in the quality of education, at least at the school level to start with.

## POLITICAL ISSUE

# Balance between Fundamental Rights and Parliamentary Privileges

## Context

*Invoking breach of privilege, the Karnataka Assembly has announced jail sentences for the editors of two Bengaluru tabloids.*

*This raises the questions that the 'sovereign people of India' have a restricted right to free speech but 'their servants or representatives' have an absolute freedom of speech in the Houses. They enjoy parliamentary privileges which violates fundamental rights of individuals sometime.*

*Therefore the balance between fundamental rights and parliamentary privilege need to be re-examined.*

## Introduction

The distinctive mark of a privilege is its ancillary character. The privileges of Parliament are rights, which are “absolutely necessary for the due execution of its powers”. They are enjoyed by individual Members because the House cannot perform its functions without unimpeded use of the services of its Members; and by each House for the protection of its Members and the vindication of its own authority and dignity.

Certain rights and immunities such as freedom from arrest or freedom of speech belong primarily to individual Members of each House and exist because the House cannot perform its functions without unimpeded use of the services of its Members.

Other such rights and immunities such as the power to punish for contempt and the power to regulate its own constitution belong primarily to each House as a collective body, for the protection of its Members and the vindication of its own authority and dignity. Fundamentally, however, it is only as a means to the effective discharge of the collective functions of the House that the individual privileges are enjoyed by Members.

In comparison to that the ‘**sovereign people of India**’ have a restricted right to free speech but ‘their servants or representatives’ have an absolute freedom of speech in the Houses. Even if one may reluctantly concede such a privilege to them in the interest of the smooth conduct of the House, why should there be the power to send people to jail for the breach of privileges?

## Article 105 and Article 194

- ▶ Article 105 of the Constitution relating to the “Powers, privileges and immunities of Parliament and its members” and Article 194 relating to the State Legislatures and their members contain certain



enumerated privileges and powers while leaving room for a large number of uncodified and unenumerated privileges to continue.

- ▶ Article 105 and 194 pertains to the privileges enjoyed by the MPs with regard to freedom of speech in the house. The MP enjoys immunity from any legal action with regard to his conduct in the house.
- ▶ Articles 105 and 194 clearly lay down that the –‘power, privileges and immunities of the legislature shall be as may from time to time be defined by the legislature, and until so defined, shall be those of the House of Commons’. The expression ‘until so defined’ does not mean an absolute power to not define privileges at all. Legislators have been arguing that codification of privileges will harm the sovereignty of Parliament.
- ▶ An MP can be expelled by the speaker for acting in a manner derogatory to the dignity of the house Under Articles 122 and 212. The Courts cannot enquire into the proceedings of the house.

The case of the Karnataka Assembly imposing fines and imprisonment on two journalists for writing something against the Speaker when he was a legislator and against another legislator has once again revived the debate about the need for codifying privileges and giving primacy to a citizen’s right to free speech over legislative privileges.

**Criticism of Karnataka legislative assembly action**

The action is objectionable on various counts:

- ▶ First, it marks an unfortunate departure from the doctrine of separation of powers and functions, on which the entire structure of Indian democracy stands. The Speaker is complainant, advocate and judge, and has even fixed the quantum of punishment — a year behind bars and Rs 10,000 in fines.
- ▶ Second, there is very little clarity about the law of privilege, and whether it is proper for legislatures to award punishments remains debatable.
- ▶ Third, Perhaps the Speaker of Karnataka assembly misunderstands the purpose of the law of privilege, which is to protect the independence of the House. Privilege is to be invoked only if an intervention prevents members of the House from discharging their duties. Typically, this amounts to preventing legislators from speaking their mind. No such thing happened in this case. The legislators who felt impugned by the tabloids could have taken recourse to the laws of defamation and libel, without dragging the issue into the House.
- ▶ Fourth, The misuse of privilege appears especially disturbing at this juncture, when the press is perceived to be under attack. Last winter, the closure of Kashmir Reader for almost three months, on the charge that its coverage of street protests following the killing of Burhan Wani of the Hizbul Mujahedeen could incite “acts of violence and disturbance of public tranquillity”, was entirely avoidable.
- ▶ Fifth, this decision reflects the kind of legislative overreach that sets dangerous precedents in infringing constitutional guarantees of freedom of speech.

In our parliamentary democracy, where Parliament enjoys almost supreme powers, legislators face no threat from government. In fact privileges have become a tool in the hands of the ruling party.

**Relation between Privileges and Fundamental Rights**

<p><b>Parliamentary privileges:</b></p> <p>Parliamentary privilege is the sum of the peculiar rights enjoyed by each House collectively and by Members of each House</p>	<p><b>Fundamental Rights:</b></p> <p>The Fundamental Rights are defined as basic human freedoms that every Indian citizen has the right to enjoy for a proper and harmonious development of</p>
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<p>individually, without which they could not discharge their functions, and which exceed those possessed by other bodies or individuals. Thus privilege, though part of the law of the land, is to a certain extent an exemption from the general law.</p>	<p>personality. These rights universally apply to all citizens, irrespective of race, place of birth, religion, caste or gender.</p>
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### Supreme Court Judgments

- ▶ **Gunupati Keshavram Reddi v/s Nafisul Hasan:** Once Home Ministry was arrested at his Bombay residence under a warrant issued by the Speaker of U.P. Legislative Assembly for contempt of the House and was flown to Lucknow and kept in a hotel in Speaker's custody. On his applying for a writ of habeas corpus on the ground that his detention was in violation of Article 22(2), the Supreme Court quashed the detention and ordered his release as he had not been produced before a Magistrate within 24 hours of his arrest as provided in Article 22 (2). This decision therefore indicated that Article 194 (or Article 105) was subject to the fundamental right guaranteed under Article 22(2) in Part III of the Constitution.
- ▶ **M.S.M. Sharma V/S S.K. Sinha:** The Supreme Court's decision in M.S.M. Sharma (1958), giving primacy to the privileges over free speech, was made in the first decade of the Republic during which the court had a lot of respect for legislators — most of them were freedom fighters. However, by 1967, the Supreme Court was convinced that Parliament should not have absolute powers.

The Supreme Court explained the proposition laid down in M.S.M. Sharma case and said: **'We do not think it would be right to read the majority decision as laying down a general proposition that whenever there is a conflict between the provisions of the latter part of Article 194(3) and any of the provisions of the fundamental rights guaranteed by Part III'**, the latter must always yield to the former. The majority decision, therefore, be taken to have settled only that Article 19(1)(a) would not apply and Article 21 would.

- ▶ **In Refusal under Article 143:** The rules of each House provide for a committee of privileges. The matter of breach of privilege or contempt is referred to the committee of privileges. The committee has power to summon members or strangers before it. Refusal to appear or to answer or to knowingly give false answer is itself a contempt. The committee's recommendations are reported to the House which discusses them and gives its own decision.

The court in order to solve the undefined power of privilege has once introduced the amendment in Art. 105(3) of the constitution in which helps to channelize the privileges claim by parliament and helps the court to determine whether the particular privilege exist or not, and to prevent the house from making various wage privileges.

### Conclusion

There should be codification of privileges to bring clarity on the exact boundaries that may not be crossed, and on which penal action may be taken. On the other hand, a law could lead to intervention by courts. This issue has been examined several times by Parliament. The codification of privileges is basically resisted because it would make the privileges subject to fundamental rights and hence to judicial scrutiny and evolution of new privileges would not be possible.

The National Commission to Review the Working of the Constitution (NCRWC) has also recommended in the report submitted on March 31, 2002 that "The privileges of legislatures should be defined and delimited for the free and independent functioning

of Parliament and State Legislatures.” It may thus be stated that the codification of privileges would strengthen the rule of law.

Hence there is an urgent regarding need to have a fresh look at the legislative privileges and Supreme Court’s interpretation to legislative privileges with respect to modern notion of human rights. Thus, in order to determine the privileges, the house cannot blindly adopt the same that exist in Britain but has to decide and scrutinize whether it suits the Indian Democracy and does not offend the Republic characteristic of the nation.

The judiciary should immediately clarify the applicability of privilege, and ensure that legislatures can no longer play plaintiff, advocate and judge, all rolled into one.

Elected representatives, whether in the states or at the Centre, should realise that criticism, however unfair, is part of the game for participants in an open democracy in which there are checks and balances in reasonably robust libel laws.

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**GOVERNANCE ISSUE**


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# SC New Rule on Liquor Ban



*Taking cognizance of the road accidents and deaths because of drunken driving Supreme Court on 31st March refused to alter its 2016 order in which it ordered the ban on liquor sales along both national and state highways.*

*However, recently the Supreme Court has allowed that roads within cities can be denotified as national highways, opening a window for numerous liquor shops that were set to lose their license after a blanket ban on alcohol shops within 500 metres of all highways.*

## Introduction

- ▶ Supreme Court, last year has banned sale of liquor within 500 meters of state and national highways across the nation from April 2017. The court has ordered a ban on all liquor shops along the national as well as the state highways and made it clear that licenses of existing shops has not to be renewed.
- ▶ Supreme Court directed that liquor vends within 500 meters of national and state highways had been shut down from April 1. It had exempted the hill state of Sikkim, Meghalaya and Himachal Pradesh and areas having a population of up to 20,000.
- ▶ This was modified in March this year where it was held that the ban would be within 220m of the highway in towns with population below 20,000.
- ▶ It also laid down that there would be no liquor sale in hotels and restaurants, or liquor outlets, within 500m of state and national highways.
- ▶ For example, major five star hotels in Delhi would be banned from serving liquor to guests as these hotels were on both sides of national highways criss-crossing the capital. The Apex court further added it never meant to ban the sale of liquor on road passing through cities.

The step has been taken as a safety measure to reduce accidents due to drunk driving at high speeds outside the city in one of the most crash-prone countries in the world.

**However, the order will have multiple adverse consequences for sure.**

- ▶ For one thing, over one million jobs will be lost across the hospitality sector.
- ▶ Because of the decline in the liquor sector, the real estate prices at what used to be prime locations, will be affected. Food and snack sales close to highways will also, in all probability, be affected. Going by prior experience with similar bans, a parallel economy will soon develop.
- ▶ There will be a large increase in corruption and rent-seeking across the law enforcement machinery.

- ▶ The direct impact of all those negatives will show up to some extent in the balance sheet of listed companies.
- ▶ The indirect effect of so many job losses is likely to show up in GDP growth rates and macro-statistics at some stage. The social dimensions of that employment loss could play out over a long period. The laid off workforce will consume less; some will default on extant personal loans; a few could take to crime.
- ▶ There is also rampant corruption in states with prohibition and widespread attempts to get around the laws. This shows up in border districts of Uttar Pradesh-Bihar and Maharashtra-Gujarat for instance. The UP border districts and the Maharashtra border districts see very high liquor sales with much of the alcohol illegally transported across the border at a high premium. A similar model could arise with liquor sales being very high in vend just beyond the 500 meter mark.
- ▶ Some state administrations have reportedly re-designated state highways as district roads to avoid shutdowns.
- ▶ The impact on retail outlets will be temporary, as companies move away from highways over time. Retail consumer demand would shift to shops that are located away from the highways.

### Actions taken by States

Several states have been working to mitigate the impact of the ban by declassifying highways, while some outlets are moving to new locations.

Many states have passed denotification orders, apparently to circumvent an earlier court order that banned liquor sale within 500 meters of all highways.

ArriveSAFE, a Chandigarh-based non-governmental organisation (NGO) working on road safety, had moved the top court after the Punjab and Haryana High Court on March 16 refused to quash the UT notification. It was contended that by de-notifying state highways and renaming them major district roads, the Chandigarh administration had made a mockery of the SC judgment.

According to the NGO, if the administration is allowed to denotify highways, liquor vends would be found in residential areas that will disrupt public peace and result in traffic chaos, including road accidents.

Supreme Court has preferred not to see such denotification as an affront to its December judgment and has instead linked the categorisation of highways to traffic speed. It's easy to understand why governments and civic bodies are resorting to ingenious ways to circumvent the highway liquor ban because huge investments that went into setting up hotels, bars and restaurants and procuring licenses have been affected, lakh of jobs lost, and state governments suddenly left without a valuable source of revenue. The tourism sector has been hit hard.

This is not the first instance of state exploring measures to reduce the impact of the apex court's ban on sale of liquor along highways. This month, the Punjab government amended the state's Excise Act, exempting restaurants, hotels and clubs from the purview of the ruling. In April, Rajasthan denotified certain sections of state highways passing through towns.

### Conclusion

There are better ways of addressing accidents caused by drunken driving: first by rigorous patrolling of highways which requires greater allocation by states, followed by faster prosecution of cases by the judiciary and then by strict punishments. Recent amendments to the Motor Vehicles Act increasing penalties for drunken driving help achieve the latter. But the blanket ban along highways that SC envisaged, while well-intentioned, penalises an array of stakeholders not at all engaged in drunken driving.

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**GEOGRAPHICAL ISSUE**


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# Spatial Planning for City Development



*According to Census 2011, Cities accommodate nearly 31% of India's current population and contribute 63% of GDP. Urban areas are expected to house 40% of India's population and contribute 75% of India's GDP by 2030. This requires comprehensive development of physical, institutional, social and economic infrastructure. All are important in improving the quality of life and attracting people and investment.*

*Cities are truly the engines of growth today that needs a holistic approach. To meet the overarching aspirations of growing urban population and sustain a virtuous cycle of growth and development, development of Smart Cities has become crucial.*

*However, the Smart Cities Mission calls for appropriate local spatial development plans.*

*Hereby, critically analyzing the Smart City Mission and significance of local spatial planning for city development.*

## Introduction

The Smart Cities Mission is an innovative and new flagship initiative by the Government of India to drive economic growth and improve the quality of life of people by enabling local development and harnessing technology as a means to create smart outcomes for citizens.

The Mission will cover 100 cities and its duration will be five years from 2015 to 2020. The Mission is implemented by the Ministry of Urban Development (MoUD). SCM will be operated as a Centrally Sponsored Scheme (CSS) where in the central Government proposes to provide financial support up to Rs. 100 crore per city per year. An equal amount, on a matching basis, will have to be contributed by the State/ULB.

The objective of the Smart Cities Mission is to drive economic growth and improve the quality of life of people by enabling local area development and harnessing technology, especially technology that leads to smart outcomes.

## The Brighter Side

The SCM has set the motion for the process of urban transformation to enable better living and drive economic growth. Stressing on the need for people centric urban planning and development, it envisions sustainable and inclusive development.



The idea is to look at compact areas, create a replicable model which will act like a light house to other aspiring cities. The Smart Cities Mission is meant to set examples that can be replicated both within and outside the Smart City, catalyzing the creation of similar Smart Cities in various regions and parts of the country.

Area-based development will transform existing areas (retrofit and redevelop), including slums, into better planned ones, thereby improving livability of the whole City. New areas (Greenfield) will be developed around cities in order to accommodate the expanding population in urban areas.

Application of Smart Solutions will enable cities to use technology, information and data to improve infrastructure and services. Comprehensive development in this way will improve quality of life, create employment and enhance incomes for all, especially the poor and the disadvantaged, leading to inclusive Cities.

The smart city aspirants have been selected through a process of competition called 'City Challenge Competition' in an objective manner as hailed by NITI Aayog. It entails effective citizen participation ending the 'top down' approach and leading to 'people centric' urban development.

This mission is a 'behavioral change' initiative requiring all stakeholders including elected and executive leadership, citizens to change their attitudes and approaches towards urban planning and execution. The growing spirit of competition among cities and towns to do better than others through city challenge competition paves the way for moving away from archaic ways of urban governance. The cities are now vying for credit ratings for mobilization of resources through municipal bonds, reflecting on their keenness to think and act differently.

Smart Cities holds strong complementarity with the AMRUT scheme in achieving urban transformation. While AMRUT follows a project-based approach, the Smart Cities Mission follows an area-based strategy. Recent reports suggest that out of the 97 smart cities declared, 89 have initiated this process of which 70 have completed it and 26 of them have already been given credit rating. Eight cities such as Ahmedabad, Bhopal, Indore, Jaipur, Kakinada, Pune, Rajkot and Visakhapatnam have already appointed Transactional Advisors for issuing municipal bonds. Total of 44 cities including 25 AMRUT cities have so far got credit ratings.

## The Flipside

Cities in India are governed by multiple organisations and authorities which have their own jurisdictions; thus Indian cities are characterised by multiple boundaries. The governing authorities in a city include urban local bodies (ULB) with the primary functions of service delivery, planning for socio-economic development and regulation of development. This results in their subdivision into different wards. Large cities also have development authorities, urban development authorities or improvement trusts responsible for planning and development that divide cities into various planning zones. Line departments, that is sector-specific organisations, deal with the provision of services in their respective sectors — the water supply agency has its own supply zones. Sewage disposal is also done based on various zones. The organisations responsible for safety and security delineate another set of zones. The different spatial entities of the city formed by non-coterminous boundaries deter effective planning and good governance.

This calls for local spatial planning. Spatial planning includes regional planning, transportation and environment as well as promoting economic growth of a region via models and techniques. This term is mostly used in context of Regional Planning.

For example: Conventional city planning talks about where a metro rail project should come up, a spatial plan "will also say what growth impetus the metro project will

provide for the city and how the metro plan will be linked to land use and boost the economic activity of the city”.

It will be a blueprint for the city in terms of social infrastructure too. Planning for healthcare and schools, among other things, will be a part of it and once a project is sanctioned, it will become embedded in it. It will be easy to bring about any development project.

### **Case study of Singapore**

Singapore, with its planning boundaries and smart urban development, is a good example. The urban planning boundaries of Singapore were first delineated by the Urban Redevelopment Authority (URA) in the 1991 Concept Plan. It comprised 55 planning areas organised into five planning regions, namely, the central, west, north, north-east and east regions.

The 2014 master plan retains the five planning regions and 55 areas which are further divided into smaller subzones. The fact to be noted is that since the implementation of these boundaries, other departments have also adopted them for their administrative purposes.

The Statistics Department of Singapore published the 2000 census based on these planning area boundaries — earlier, electoral boundaries were used.

Subsequently, further studies were based on these boundaries as seen in the 2010 census and 2015 household survey.

Similarly, the Singapore Police Force constituted the jurisdiction of its neighbourhood police centres based on these planning regions, which replaced the then existing seven land divisions.

As for the administrative and electoral divisions, in 2001, the earlier nine districts were replaced with five districts corresponding to the urban planning regions of the URA.

Each district was then further divided into town councils and electoral constituencies, which continues as of now, evident from the divisions of the 2015 election.

The unified boundaries of the various forces in planning and coordinated efforts have contributed to the planned and smart urban development of Singapore.

The above example clearly states the importance of coordination among different urban departments for better implementation of funds, functions and functionaries.

### **Conclusion**

In India, the Smart Cities Mission, an initiative meant to drive economic growth and improve the quality of life of people, calls for appropriate local spatial development plans. The existing maze of boundaries needs to be revamped for more coherent and integrated planning and governance.

### **Way Forward**

An important first step would be to build safeguards to protect the democratic nature of governance structures. A robust governance structure, which allows for sharing of power and financial resources between urban local bodies and the private sector stakeholders, would go a long way towards reducing fears.

The VCF policy framework (a principle that states that people benefiting from public investments in infrastructure should pay for it like land value tax, fee for changing land use, betterment levy, development charges, transfer of development rights, and land pooling systems) was introduced by the Ministry of Urban Development recently.

Besides this, tapping of municipal bonds can meet the financial shortages. Cues can be taken from successful models like Pune Municipal Body (Municipal bonds), Karnataka (for its methods to fund its mass transit projects) and the Mumbai Metropolitan Region Development Authority (betterment levy) to finance infrastructure projects.

Best international practices and principles of the recently concluded UN URBAN AGENDA of the Habitat conference can be incorporated to meet SDG goals.

Similarly, at the planning stage itself, cities must seek convergence in the SCM with AMRUT, Swachh Bharat Mission (SBM), National Heritage City Development and Augmentation Yojana (HRIDAY), Digital India, Skill development, Housing for All, PMAY-Urban for better integration, coordination and inclusiveness.

Institutional and legal mechanisms for any repercussions with regard to social justice, equity and cyber safety also must be stitched on to the mission strategy for it to be truly smart.

“Cities in the past were built on riverbanks. They are now built along highways. But in the future, they will be built based on the availability of optical fiber networks and next-generation infrastructure.” The management of urbanization should be viewed as an opportunity that the SCM should utilize in transforming urban India. Implementation and stakeholders coordination holds the key to the success of the mission.

## ENVIRONMENTAL ISSUE

# Ancient Bawadis and Water Management in Present Context



*Water resource management is the activity of planning, developing, distributing and managing the optimum use of water resources. Water resource management planning has to regard all the competing demands for water and seeks to allocate water on an equitable basis to satisfy all uses and demands.*

*Much effort in water resource management is directed at optimizing the use of water and in minimizing the environmental impact of water use on the natural environment.*

*Modern India can learn a lot from the traditional Water Conservation Systems, as recently, around historic bawadis (open wells) in Vijayapura are being revived so as to restore their legacy.*

## Introduction

Water is an essential resource for all life on the planet. Of the water resources on Earth only three percent of it is fresh and two-thirds of the freshwater is locked up in ice caps and glaciers. Of the remaining one percent, a fifth is in remote, inaccessible areas and much seasonal rainfall in monsoonal deluges and floods cannot easily be used.

Water conservation is a key element of any strategy that aims to alleviate the water scarcity crisis in India. With rainfall patterns changing almost every year, the Indian government has started looking at means to revive the traditional systems of water harvesting in the country. Given that these methods are simple and eco-friendly for the most part, they are not just highly effective for the people who rely on them but they are also good for the environment.

## Ancient water management techniques

Archaeological evidence shows that the practice of water conservation is deep rooted in the science of ancient India. Excavations show that the cities of the Indus Valley Civilisation had excellent systems of water harvesting and drainage. The settlement of Dholavira, laid out on a slope between two storm water channels, is a great example of water engineering. Chanakya's *Arthashastra* mentions irrigation using water harvesting systems. Sringaverapura, near Allahabad, had a sophisticated water harvesting system that used the natural slope of the land to store the floodwaters of the river Ganga. Chola King Karikala built the Grand Anicut or Kallanai across the

river Cauvery to divert water for irrigation (it is still functional) while King Bhoja of Bhopal built the largest artificial lake in India.

Since ages, people across different regions of India, have experienced either excess or scarce water due to varied rainfall and land topography. Yet, they have managed to irrigate their agricultural fields using localized water harvesting methods. Their traditional ways, though less popular, are still in use and efficient.

**Various water harvesting methods that can be used today are:**

- ▶ **Taanka:** It is a traditional rainwater harvesting Technique. A Taanka is a cylindrical paved underground pit into which rainwater rooftops, courtyards or artificially catchments flow. Once completely filled, the water stored in a taanka can last throughout the dry season and is sufficient for a family of 5-6 members.



- An important element of water security in arid regions, taankas can save families from the everyday drudgery of fetching water from distant sources.
  - This can be used in the state of Rajasthan.
  - It can also be used to collect water when there is a situation of flood. So will help in mitigating flood impact.

- ▶ **Johads:** It is one of the oldest systems used to conserve and recharge ground water, are small earthen check dams that capture and store rainwater. Constructed in an area with naturally high elevation on three sides, a storage pit is made by excavating the area, and excavated soil is used to create a wall on the fourth side. Sometimes, several johads are interconnected through deep channels, with a single outlet opening into a river or stream nearby. This prevents structural damage to the water pits.



- This can be used to recharge groundwater.

- ▶ **Kund:** A kund is a saucer-shaped catchment area that gently slope towards the central circular underground well. Traditionally, these well-pits were covered in disinfectant lime and ash, though many modern kunds have been constructed simply with cement. Raja Sur Singh is said to have built the earliest known kunds in the village of Vadi Ka Melan in the year 1607 AD.



- The water can be used for drinking purposes.

- ▶ **Baoli:** Built by the nobility for civic, strategic or philanthropic reasons, baolis were secular structures from which everyone could draw water. These beautiful stepwells typically have beautiful arches, carved motifs and sometimes, rooms on their sides.





- ▣ Stepwells having drainage systems that channeled water into the fields can be used exclusively for agriculture.

- ▶ **Bandhara Phad:** It is a community-managed irrigation system, probably came into existence a few centuries ago. The system starts with a *bhandhara* (check dam) built across a river, from which *kalvas* (canals) branch out to carry water into the fields in the phad (agricultural block). *Sandams* (escapes outlets) ensure that the excess water is removed from the canals by *charis* (distributaries) and *sarangs* (field channels).



- ▣ This technique can be used for the irrigation purpose.

- ▶ **Kuhls:** These are surface water channels found in the mountainous regions of Himachal Pradesh. The channels carry glacial waters from rivers and streams into the fields. An important cultural tradition, the kuhls were built either through public donations or by rulers.



- ▣ These can be used for irrigation purposes in downhill areas.

- ▣ It will help in mitigating flood situation also.

- ▶ **Bamboo Drip irrigation System:** It is an ingenious System of efficient water management that has been practised for over two centuries in north-east India. The tribal farmers of the region have developed a system for irrigation in which water from perennial springs is diverted to the terrace fields using varying sizes and shapes of bamboo pipes. Best suited for crops requiring less water, the system ensures that small drops of water are delivered directly to the roots of the plants. This ancient system is used by the farmers of Khasi and Jaintia hills to drip-irrigate their black pepper cultivation.



- ▣ This method can be used in other parts of the country in the agriculture field.

- ▶ **Ramtek model:** This has been named after the water harvesting structures in the town of Ramtek in Maharashtra. An intricate network of groundwater and surface water bodies, this system was constructed and maintained mostly by the malguzars (landowners) of the region. In this system, tanks connected by underground and surface canals form a chain that extends from the foothills to the plains. Once tanks located in the hills are filled to capacity, the water flows down to fill successive tanks, generally ending in a small waterhole.



- ▣ This system conserves about 60 to 70 % of the total runoff in the region and can solve the water scarcity problem.



- ▶ **Eri (Tank System):** Eris can either be a system eri, which is fed by channels that divert river water, or a non-system eri, that is fed solely by rain. The tanks are interconnected in order to enable access to the farthest village and to balance the water level in case of excess supply.
  - Eris act as flood-control systems, prevent soil erosion and wastage of runoff during periods of heavy rainfall, and also recharge the groundwater.
  - The eri system enables the complete use of river water for irrigation.



### Conclusion

These ecologically safe traditional systems are viable and cost-effective alternatives to rejuvenate India's depleted water resources. The government should try to revive the knowledge contained in the traditional water harvesting systems and devise methods to ensure sustainable usage of water by decentralizing water management. These techniques are very simple to use and requires community participation.

# Prelims News



*Hereby, compiling the important short notes of July (1 to 15), 2017.*

## Indian Culture

### GOMIRA MASK

#### Context:

- ▶ In 2013 Memorandum of Understanding was signed between the West Bengal government and UNESCO to promote culture-based livelihoods, which is now reviving the art of colourful mask making.

#### About Gomira

- ▶ The festivals of Gajon, Gombhira, Gomira and Neel pujo, all celebrated at the end of the Bengali month of Choitro (March-April) are region-specific names, with local differences, of the same festival held at the end of the agricultural year in honour of Shiva.
- ▶ The Gomira festival of erstwhile West Dinajpur (North and South Dinajpur today) differs in the celebration of the same festival in other North Bengal districts in that is marked by a Chamunda or Kali-centric masked ritual dance practised by the Rajbongshi (Deshi and Poliya), Han, Rabidas, Baishyadas and Kaibartyo communities.
- ▶ The Gomira dance has its roots in Shaktism and the worship of Adya Shakti (primordial energy).
- ▶ The dancers wear the masks of the deities to invoke their powers.

#### About Gomira mask

- ▶ The Gomira masks are crafted from wood, but any villager who cannot afford a wooden mask, usually offers a mask made from shola pith, which is a cheaper alternative.
- ▶ Originally the Gomira masks were painted with natural dyes. Red dye was made from segun, green from seem (a form of bean), violet from jamun, and black from jia tree.

### KERALA BOAT RACE

#### Context:

The season of snake boat races in Kerala started off in a grand way with the race held on the Pamba river at Champakulam in Kuttanad.

#### About Kerala Boat Race

- ▶ The races are held mainly from June to September every year, which also marks the beginning of the harvest festival, Onam in the State.
- ▶ The popular boat races in the State are Aranmula Uthrattadi Vallamkali, Nehru Trophy Boat Race at Alappuzha, Champakulam Moolam Boat Race, Payippad Jalotsavam, Kumarakom Boat Race and Indira Gandhi Boat Race at Ernakulam.
- ▶ Snake Boats can accommodate around 150 rowers, and is nearly a hundred feet long.
- ▶ Tree trunks of Kadampu and Anjili (Artocarpus Hirsuta) are used to make these boats.

#### History

- ▶ The history of the race dates back to the 15th century when the erstwhile Travancore State was ruled by the Chembakassery dynasty.
- ▶ The Moolam boat race commemorates an episode associated with the installation of the idol of Lord Krishna at the Ambalappuzha Sri Krishna temple.
- ▶ The idol was brought from Kurichi near Kottayam by boat. The boat carrying the idol had a halt at Mappilasseri, a traditional Christian home at Champakulam.
- ▶ It was given a reception by people of all communities and the voyage to Ambalappuzha was marked by festivities. The annual race falls on Moolam star in the month of Mithunam in the Malayalam calendar.

## **SAINT TERESA'S BLUE-BORDERED SARI GET IP**

### **Introduction**

- ▶ The famous blue-bordered sari of Mother Teresa has been recognised as an Intellectual Property of the Missionaries of Charity.
- ▶ The Trade Marks Registry, Government of India, has granted the registration of the trade mark for that pattern of blue border of sari.
- ▶ The blue border pattern is a distinctive symbolic identity of Missionaries of Charity under the concept of colour trade mark protection. It is the first time ever that a uniform has been protected under the Intellectual Property rights.

### **What is Intellectual Property Rights?**

- ▶ Intellectual property (IP) refers to creations of the mind, such as inventions; literary and artistic works; designs; and symbols, names and images used in commerce.
- ▶ IP is protected in law by, for example, patents, copyright and trademarks, which enable people to earn recognition or financial benefit from what they invent or create. By striking the right balance between the interests of innovators and the wider public interest, the IP system aims to foster an environment in which creativity and innovation can flourish.

## **AHMADABAD IS INDIA'S FIRST WORLD HERITAGE CITY**

### **Context:**

- ▶ The 606-year-old walled city of Ahmedabad, was declared as **India's first World Heritage City**.

### **Criteria:**

- ▶ The organisation for world heritage cities lists a number of criteria for a place to be listed in it which includes 'bearing testimony to a cultural tradition or civilisation which is living or has disappeared,' 'representing a masterpiece of human creative genius,' and 'exhibiting an important interchange of human values over a span of time, or within a cultural area of the world,' among several others.

### **Why it has been declared as world heritage city?**

- ▶ Ahmedabad lay at the crossroads of the caravan routes to Rajasthan and Delhi in the north, Malwa in the east, Sind in the west and the ports of Cambay, Surat and Broach in the south.

- ▶ Its location ensured it gained a status of a thriving industrial centre where Dutch and English East India company ships would come for trading in indigo, saltpetre and textiles.
- ▶ The richness of architecture present in Ahmedabad is enhanced by the cultural fusion of Hindu and Muslim elements.
- ▶ The Sidi Saiyyed Mosque built in the 16th century is one of the finest examples of this Indo-Saracenic style of architecture.
- ▶ It was the centre for Gandhi's freedom struggle.

## **AMARANTH YATRA**

### **About Amarnath Yatra**

- ▶ The 48-days July-August popular annual Hindu pilgrimage, undertaken by up to 600,000 or more pilgrims to 130 feet (40 m) high glacial Amarnath cave shrine of iced stalagmite Shiv linga at 12,756 feet (3,888 m) in Himalayas, is called *Amarnath Yatra*.
- ▶ The cave is situated at an altitude of 3,888 m (12,756 ft), about 141 km (88 mi) from Srinagar, the summer capital of Jammu and Kashmir and reached through Pahalgam town.
- ▶ Officially, the Yatra is organised by the State Government in collaboration with the *Shree Amarnath Shrine Board* (SASB).
- ▶ The Government agencies provide necessary facilities all along the route during the Yatra period, which includes provision of ponies, supply of power, telecommunication facilities, firewood and setting up of fair price shops.

## **TINY LANDMASS OF OKINOSHIMA GETS UNESCO HERITAGE TAG**

### **Context:**

- ▶ A men-only island in Japan a tiny landmass of okinoshima has been declared a UNESCO World Heritage site.

### **About the Island**

- ▶ The island, which sits off the north-west coast of Kyushu, the southernmost of Japan's four main islands, was an important window for foreign trade in Japan since ancient times, forming part of a trade route that linked the archipelago to the Korean peninsula and China.
- ▶ The tiny landmass of Okinoshima is permanently manned by a Shinto priest who prays to the island's goddess, in a tradition that has been kept up for centuries.

- ▶ Where women are banned and male visitors must bathe naked in the sea before visiting its shrine.
- ▶ Limited numbers are permitted to land on the island in the Sea of Japan.

### About UNESCO

- ▶ The United Nations Educational, Scientific and Cultural Organization (UNESCO) seeks to encourage the identification, protection and preservation of cultural and natural heritage around the world considered to be of outstanding value to humanity. This is embodied in an international treaty called the Convention concerning the Protection of the World Cultural and Natural Heritage, adopted by UNESCO in 1972.
- ▶ UNESCO's World Heritage mission is to:
  - Encourage countries to sign the World Heritage Convention and to ensure the protection of their natural and cultural heritage;
  - Encourage States Parties to the Convention to nominate sites within their national

territory for inclusion on the World Heritage List;

- Encourage States Parties to establish management plans and set up reporting systems on the state of conservation of their World Heritage sites;
- Help States Parties safeguard World Heritage properties by providing technical assistance and professional training;
- Provide emergency assistance for World Heritage sites in immediate danger;
- Support States Parties' public awareness-building activities for World Heritage conservation;
- Encourage participation of the local population in the preservation of their cultural and natural heritage;
- Encourage international cooperation in the conservation of our world's cultural and natural heritage.

## Science and Environment

### RADIO GALAXIES

#### Context:

- ▶ A team of astronomers from India has discovered a large number of extremely rare kind of galaxies called 'giant radio galaxies' (GRGs), the largest galaxies known in the universe.

#### What are radio galaxies?

- ▶ A typical galaxy has about billions of stars and is about one lakh light years across. A typical radio galaxy could be as big as 30,000 to 30 lakh light-years in size. When some of these radio galaxies grow to enormous sizes, bigger than 33 lakh light-years across, they are called as giant radio galaxy (GRGs).
- ▶ They are extremely weak in radio luminosity making it difficult for even a sensitive radio telescope to detect them.
- ▶ Super massive black hole - typically with mass ranging from one crore to hundred crore mass of the sun- is at the center of the GRGs. Acting as the 'central engine', this black hole drives the dynamics of the GRGs. All the materials in the vicinity are sucked by the incredible gravity of the super massive black hole. As the materials fall inward, they become ionised and this motion of the charged materials create

powerful electromagnetic force, which in turn blast away the materials at the edges. The jets of hot plasma blasting away from the black hole in opposite directions produce huge lobes of radio emissions that can span much greater distances than the galaxy's visible light.

### INDIGENOUSLY DEVELOPED S-BAND DOPPLER WEATHER RADAR

#### Context:

- ▶ A state-of-the-art, indigenous doppler weather radar, capable of predicting with increased accuracy weather events such as cyclone occurring in 500-km radius from Kochi has been established.

#### What is S-band doppler weather radar?

- ▶ Doppler weather radar, is a type of radar used to locate precipitation, calculate its motion, and estimate its type (rain, snow, hail etc.).
- ▶ The Doppler Weather Radar (DWR) provides advance information, enhancing the lead-time so essential for saving lives and property, in the event of natural disaster associated with severe weather. Though the conventional radars are able to track and predict cyclones, the DWR provides detailed information on storm's internal wind flow and structure. The severity of the weather systems can thus be

quantitatively estimated more accurately than ever before and more precise advance warnings can be generated for saving human lives and property. The polarimetric capability of the Radar will significantly improve the accuracy of rainfall estimation leading to accurate and timely flash flood warnings.

- ▶ Doppler Weather Radar Products can be used for the following applications
  - Weather surveillance
  - Severe weather monitoring
  - Hurricane, typhoon, and cyclone tracking
  - Hail detection
  - Hydrometeorological applications, such as flood forecasting
  - Airport wind-shear detection
  - Meteorological research
  - Weather modification
  - Agriculture
  - Radiosonde Launch support systems

### **SARASWATI: SUPERCLUSTER OF GALAXIES**

#### **Context:**

- ▶ A team of Indian astronomers have identified extremely large supercluster of galaxies located in the direction of constellation Pisces.

#### **About Saraswati**

- ▶ The Saraswati supercluster is a major concentration of galaxies and galaxy clusters, forming a galaxy wall like structure, and spanning at least 600 million light years (200 Mpc) across that includes at least 43 massive galaxy clusters. The Saraswati supercluster stands at a distance of 4,000 million light years away from Earth.
- ▶ The Saraswati supercluster and its environs reveal that some extreme large-scale, prominent matter density enhancements had formed in the past when dark energy had just started to dominate structure formation. This galactic concentration thus sheds light on the role of dark energy and cosmological initial conditions in supercluster formation.

#### **Supercluster galaxy**

- ▶ A supercluster is a chain of galaxies and galaxy clusters, bound by gravity, often stretching to several hundred times the size of clusters of galaxies, consisting of tens of thousands of galaxies. The Saraswati supercluster, for

instance, extends over a scale of 600 million light years.

### **MOBILE TOWER RADIATION**

#### **Introduction**

- ▶ Mobile or cellular phones are now an integral part of modern telecommunications. Thus it is important to investigate, understand and monitor any potential public health impact.

#### **Mobile radiation**

- ▶ There are two types of radiation: ionizing and non-ionizing. The former kind is the category into which X-rays fall – these are harmful to the body and can cause cancer. Non-ionizing radiation on the other hand is a low energy radiation which generates heat. This is the category into which mobile tower radiation falls.
- ▶ Mobile phones communicate by transmitting radio waves through a network of fixed antennas called base stations. Radiofrequency waves are electromagnetic fields, and unlike ionizing radiation such as X-rays or gamma rays, can neither break chemical bonds nor cause ionization in the human body.
- ▶ WHO has also classified EMF radiation from mobiles, mobile towers and wi-fi as category 2(B), or possibly carcinogenic.

#### **Effects**

- ▶ Short term effects: Tissue heating is the principal mechanism of interaction between radiofrequency energy and the human body. At the frequencies used by mobile phones, most of the energy is absorbed by the skin and other superficial tissues, resulting in negligible temperature rise in the brain or any other organs of the body.
- ▶ Long term effects have not been established yet.

### **DNA AS STORAGE DEVICE**

#### **Introduction**

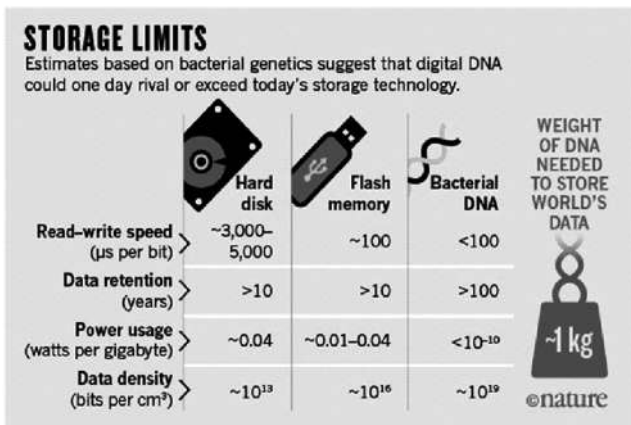
- ▶ **DNA digital data storage** refers to any process to store digital data in the base sequence of DNA.
- ▶ This technology uses artificial DNA made using commercially available oligonucleotide synthesis machines for storage and DNA sequencing machines for retrieval.
- ▶ This type of storage system is more compact than current magnetic tape or hard drive storage systems due to the data density of the DNA.



- ▶ Currently it was reported that in 1 gram of DNA 215 petabytes (215 million gigabytes) could be stored.
- ▶ These features have led to researchers involved in their development to call this method of data storage “apocalypse-proof” because “after a hypothetical global disaster, future generations might eventually find the stores and be able to read them.”
- ▶ It is, however, a slow process, as the DNA needs to be sequenced in order to retrieve the data, and so the method is intended for uses with a low access rate such as long-term archival of large amounts of scientific data.

### Procedure

- ▶ First, they had to convert the digital code of 1's and 0's to a genetic code of A's, C's, T's, and G's, then take this lowly text file and manually construct the molecule it represents.



### SENSOR NETWORK TO MAP POLLUTION EFFLUENTS IN GODAVARI

#### Context:

- ▶ Researchers are developing a cost-effective forecast system using cloud networking & remote sensors to predict the pollution in Godavari.
- ▶ The exercise is part of a Bill and Melinda Gates Foundation project to support the programme of the Administrative Staff College of India (ASCI) to provide city-wide sanitation improvements in urban Andhra Pradesh.

#### Objective

- ▶ The team's long-term objective is to be able to inform State officials and citizens of a probable spike in, levels of dangerous microbes or

effluents, similar to weather and air pollution forecasts.

#### Methodology

- ▶ Using a mix of methods, including satellite-monitoring, traversing stretches of the river to collect water samples and using special sensors to measure bacterial and chemical pollution, the researchers are trying to develop a cost-effective forecast system.

#### Benefits

- ▶ “Raw data” could be used to inform the efficacy of a proposed faecal sludge treatment plant and whether behavioural interventions – including incentives or punishments – to restrict activities that pollute the river could actually work.

### MELTING OF ANTARCTIC ICEBERG

#### Context:

- ▶ One of the biggest icebergs ever recorded has just broken away from Antarctica.
- ▶ The giant block is estimated to cover an area of roughly 6,000 sq km; that's about a quarter the size of Wales.
- ▶ Unlike thin layers of sea ice, ice shelves are floating masses of ice, hundreds of metres thick, which are attached to huge, grounded ice sheets. These ice shelves act like buttresses, holding back and slowing down the movement into the sea of the glaciers that feed them.

#### Impacts

- ▶ Over the past 50 years, the west coast of the Antarctic Peninsula has been one of the most rapidly warming parts of the planet.
- ▶ The warming of the Antarctic Peninsula is causing changes to the physical and living environment of Antarctica.
- ▶ The distribution of penguin colonies has changed as the sea ice conditions alter.
- ▶ Melting of perennial snow and ice covers has resulted in increased colonisation by plants.
- ▶ A long-term decline in the abundance of Antarctic krill in the SW Atlantic sector of the Southern Ocean may be associated with reduced sea ice cover.



## Indian Polity

### LATERAL ENTRY INTO CIVIL SERVICES

#### Context:

- ▶ On the recommendation of Committee of Secretaries, the Department of Personnel & Training (DoPT) has been instructed to put up a proposal for lateral entry of outsiders into the civil services. The induction of outsiders is for the middle rung of ministries that deal with economy and infrastructure.

#### About the proposal

- ▶ In the recent decision, PMO instructed DOPT to prepare a broad outline of modalities for selecting private individuals for appointment in the ranks of deputy secretary, director and joint secretary.
- ▶ The move came in response to a central government staffing policy paper where the DoPT had indicated a huge shortage of officers in the middle management level,
- ▶ The preliminary estimate is that around 40 individuals, including successful entrepreneurs, academicians and social workers, would be taken in through lateral entry, mainly at the joint-secretary level where there is a dearth of officers.
- ▶ These appointments would not be for regulating ministries such as Home, Defence, Personnel or even Corporate Affairs.

#### Need for lateral entry

- ▶ It is due to the civil services' structural failings as present system requires technical knowledge too. So specialists are needed to manage the present scenario.
- ▶ The second ARC report points out that it is both possible and desirable to incorporate elements of a position-based system where lateral entry and specialization are common.

#### Examples

- ▶ Domain experts have been brought in from outside the services to head various committees, advisory bodies and organizations. Nandan Nilekani, Montek Singh Ahluwalia, Vijay Kelkar, Arvind Subramanian and Raghuram Rajan are all cases in point. Both the Niti Aayog and the Planning Commission before it have allowed for lateral entry. And some states such as Jharkhand are now experimenting with it as well.

### MAHARASHTRA SOCIAL BOYCOTT BILL GETS PRESIDENTIAL NOD

#### Context:

- ▶ The issue of social boycott by caste panchayats is grave matter of law and order as well as social justice. To curb this, Maharashtra has become the first State in the country to enact a law against social boycott from caste panchayats.

#### Backgrounder

- ▶ With growing instances of boycotts of individuals or families by caste panchayats, the need to enact a special law was first echoed in the State in 2010.
- ▶ After a long period, the bill had been cleared in last year's Budget Session with CM Devendra Fadnavis claiming that it would deal with the scourge of social boycott with an 'iron hand'.
- ▶ As per the procedure, the bill was then forwarded by the Central government to the President for his assent. Recently President Pranab Mukherjee has given his nod to implement the Prohibition of Social Boycott Bill in the State of Maharashtra.

#### Provisions of the Bill

- ▶ Under the Act, social boycott is a punishable offence which includes a fine of up to Rs 5 lakh and imprisonment of up to seven years or both.
- ▶ Families, communities and individuals can now be punished under this law, if they are found to be guilty. Reasons for social boycott include religious rituals, inter-caste marriage, lifestyle, dress or vocation, and a victim can file a complaint either with the police or directly to the magistrate.
- ▶ The Act also makes provisions for six-month long speedy trials. Interestingly, the Act provides for a state government-appointed Social Boycott Prohibition officers to 'assist the police and magistrate' and track cases of social boycott.

### SPECIAL SCHOOLS FOR MINORITIES, TRIBALS

#### Context:

- ▶ The Ministry of Human Resource Development (MHRD) will soon establish separate schools for minorities and tribals on the lines of Kendriya

Vidyalayas. These schools will be run by the Central government on KV model and will follow NCERT syllabus.

### Backgrounder

- ▶ At a recent meeting of NCERT general council which was attended by MHRD officials, the discussion regarding the establishment of separate schools for minorities and tribals.

### Revamping education for minorities

- ▶ A panel on education for minorities had in a report submitted to the Ministry of Minority Affairs recently suggested the need to revamp education for children belonging to the minority community.
- ▶ The report stated to open new schools that follow NCERT syllabus.
- ▶ A panel has been constituted by the MHRD which consist secretaries from Ministry of Minority Affairs and Tribal Affairs, who are working on a paper that will deal with the technicalities of setting up such schools. In addition, no reservation will be provided for government employees' children.

### Benefits

- ▶ It is expected that Separate schools will soon be established by the Ministry of Human Resource Development (MHRD) on the lines of Kendriya Vidyalayas and Navodaya Vidyalayas.
- ▶ These schools will be run by the Central government on KV model and will follow NCERT syllabus like all other government schools.
- ▶ These will provide level playing field to students in competitive exams.

### NEW CINEMATOGRAPH BILL

#### Context:

- ▶ New Cinematograph Bill has been drafted to let government take over Censor Board under special circumstances.

#### Backgrounder

- ▶ In April 2016, Shyam Benegal committee submitted report on revamping Central Board of Film Certification (CBFC). In its report, the Shyam Benegal Committee said that CBFC should only be a film certification body and not impose cuts and modifications on the films.
- ▶ However, the committee retained the right to deny certification to movies. The committee recommended more specific categorization like UA12, UA15. It said that the A category be sub-divided into A, AC (Adult with Caution) categories.

### Draft Bill provisions

- ▶ In July 2017, the Draft Bill for the new Cinematograph Act has been placed.
- ▶ The government will take over if the situation makes it necessary to do so in "public interest". However, the bill does not define the landscape of such circumstances where the government will take over.
- ▶ As per the draft bill, the government can take control of the CBFC by putting out a notification in the official gazette. The provision also allows the government to extend this period or reconstitute the board.
- ▶ The draft bill – on which the Information and Broadcasting (I&B) Ministry is holding consultations with stakeholders – has also taken away the CBFC's power to suggest cuts or modifications to a film before certifying it. It has also added a new 'Adult with Caution' category based on the recommendations of the Shyam Benegal Committee.
- ▶ The current cinematograph act entitles the CBFC to suggest cuts or modifications before certifying a film, but the new provisions will give the filmmaker the freedom to decide on the cuts he wants to make if the CBFC refuses to certify it or denies it a specific category.

### PANEL CALLS FOR LIGHT REGULATION OF NGOS

#### Context:

- ▶ Amidst the standoff between the Government and NGO sector, where several have been complaining of undue or targeted harassment by the government under the IT Act and FCRA, SC has ordered Central Govt to 'Enable procedures that are not cumbersome and intrusive' to reduce the harassment of NGOs. Based on that panel was constituted which recommended light regulation of NGOs.
- ▶ On the orders of Supreme Court, the Central Government appointed a high-power committee which has recommended several steps to ensure the "light regulation" of non-governmental organizations (NGOs) so as to reduce their harassment.

#### Recommendations

On the Supreme Court's suggestion, the committee has drawn up a framework of guidelines for the accreditation of NGOs, audit of their accounts, and procedures to initiate action for recovering grants in case of misappropriation.

The Committee has recommended:

- ▶ A nodal body to oversee the various interfaces between NGOs and the government, and has recommended that NITI Aayog be vested with the power.
- ▶ The committee has recommended a separate law for voluntary agencies engaged in activities of a charitable or “public good” nature to enable more effective and efficient regulation of the sector.
- ▶ “Regulation should be ‘light’ and consistent with the fundamental rights, so as to give effect to the objects for which voluntarism is being promoted
- ▶ The registration procedures be modernised so as to facilitate the seamless operation of the applicable provisions of the IT (Income Tax) Act and FCRA (Foreign Contribution Regulation Act) with respect to NGOs, without the need for cumbersome and intrusive processes.
- ▶ Steps must be taken to reduce the need for a physical interface between NGOs and public officials acting under the IT Act and the FCRA, along with reduction in mutual distrust and scope for misuse.

### **DIRECTORATE GENERAL OF ANALYTICS AND RISK MANAGEMENT**

#### **Context:**

- ▶ The government has set up a new wing DGARM under the indirect taxes body to provide intelligence inputs and carry out big data analytics for taxmen for better policy formulation and nabbing evaders.

#### **About DGARM**

- ▶ The Directorate General of Analytics and Risk Management (DGARM) will be under the Central Board of Excise and Customs (CBEC), mainly to use internal and external sources for detailed data mining to generate actionable inputs.
- ▶ The DGARM, setup on July 1, coinciding with the roll-out of the GST regime, has four verticals headed by an official of rank of additional director general or principal ADG. It will function as an apex body of CBEC for data analytics and risk management, and report to the CBEC chairman.
- ▶ Incidentally, the CBEC is to be renamed as the Central Board of Indirect Taxes and Customs (CBIC) after excise duty along with service tax

and a dozen other central and state levies were subsumed into GST.

- ▶ The data analytics and processing coupled with intelligence inputs would inter-alia provide CBEC national and sub-national perspective for policy formulation.
- ▶ The field formations of CBEC are expected to gainfully and effectively utilize the data and other inputs shared by the DGARM.
- ▶ As part of the DGARM, a National Targeting Centre has been set up, which is responsible for application of a nationally coordinated approach to risk analysis and targeting of risk analysis and targeting of risky goods and passengers crossing the borders of the country. It shall provide 24×7 operational risk interdiction supports to field formations of the CBIC.
- ▶ The centre in question will institutionalize coordination with other government departments and other stakeholders for sharing databases, information, intelligence and reports to build risk profile of entities.
- ▶ A Centre for Business Intelligence and Analytics has also been set up and will be responsible for identification of information requirements of the CBEC. It will utilize data feeds from internal sources.
- ▶ It shall be responsible for providing analytical inputs to support identification, targeting and risk management functions of the National Targeting Centre, the Risk Management Centre for Goods and Services Tax, and the Risk Management Centre for Customs.
- ▶ The third vertical of the DGARM is the Risk Management Centre for Goods and Services Tax, which will institutionalize mechanism to collect necessary inputs, adopt coordinated approach and share the outcome for risk-based identification for the purpose of scrutiny, audit and enforcement functions.
- ▶ Besides, the Risk Management Centre for Customs will be responsible for assessment and targeting of risky cargo crossing the borders through sea, air and land. The DGARM will do detailed data mining and analysis to generate outputs for focused and targeted action by field formations and investigation wings of the CBEC.

## Economy

### **BITCOIN TRADE MAY COME UNDER SEBI**

#### **Context:**

- ▶ The government is considering the introduction of a regulatory regime for virtual or crypto currencies, such as Bitcoin, that would enable the levy of the Goods and Services Tax on their sale.

#### **About Crypto-currency**

- ▶ Crypto-currency that is planned to be brought under the regulatory regime is a digital currency which allows transacting parties to remain anonymous while confirming that the transaction is a valid one. It is not owned or controlled by any institution – governments or private.
- ▶ There are multiple such currencies – bitcoin, ethereum, ripple are some of the popular ones. Currently, they are neither illegal nor legal in India. “One bitcoin today is worth as much as 60 grams of gold. The market cap for all crypto-currencies has just crossed \$100 billion, with most of the increase coming in the past few months. On April 1, 2017, the total market cap was just over \$25 billion, representing a 300% rise in just over 60 days. Therefore a regulatory framework is needed for it.

#### **Government proposal**

- ▶ The government is now considering the new regime which may possibly bring BITCOINS trading under the oversight of the stock market regulator, Securities and Exchange Board of India (SEBI).
- ▶ The idea is to treat such currency in a manner similar to gold sold digitally, so that it can be traded on registered exchanges in a bid to “promote” a formal tax base, while keeping a tab on their use for illegal activities such as money laundering, terror funding and drug trafficking.

#### **Why bitcoins are a bit risky ?**

- ▶ Bitcoins were in the news recently when during the two global cyber ransomware attacks – WannaCry and Petya – attackers sought about \$300 in bitcoin as ransom. Crypto-currency can also be used for a lot of legal activities – such as booking tickets, buying coffee or fast food, depending of which retailers accept such currency.

- ▶ Banning will give a clear message that all related activities are illegal and will disincetivise those interested in taking speculative risks, but it was pointed out it will impede tax collection on gains made in such activities and that regulating the currency instead would signal a boost to blockchain technology, encourage the development of a supervision ecosystem (that tracks legal activities and may also assist in tracking illegal activities) and promote a formal tax base.

### **REGIONAL CONNECTIVITY SCHEME NORMS FOR FIGHTS TO HILLY AREAS**

#### **Context:**

- ▶ To improve air connectivity to the country’s hilly areas and islands by use of smaller aircraft, the Centre is likely to ease norms for bidding under its regional connectivity scheme (RCS).

#### **About the Norms**

- ▶ The government has categorized hilly and island regions as “high priority areas” for enhancing air connectivity. The Regional Connectivity Scheme, also known as UDAN (Ude Desh Ka Aam Nagrik), aims at making flying affordable for the masses by capping fares at Rs 2,500 per hour as well as improving connectivity to tier-2 and tier-3 cities.
- ▶ Operators, who are awarded routes under the scheme, are entitled to a subsidy to keep fares low for the passengers. An airline has to set aside 50 per cent of its seating capacity at the discounted fares. The first round of bidding under the RCS was carried out in March and five airlines were awarded 128 routes.
- ▶ According to the Ministry of Civil Aviation, the two parameters (norms) that are likely to be relaxed are frequency of flights on a route as well as distance between two airports.
- ▶ At present, an airline operator can bid for a maximum of seven flights on a route. However, this upper limit can be revised to provide more flights for the passengers.

### **CPI INFLATION FALLS TO RECORD LEVELS, IIP AT THREE MONTH LOW**

#### **Context:**

- ▶ Growth in industrial production fell to a three-month low in May while consumer price index (CPI)-based inflation declined below a stipulated floor of 2 per cent in June, providing



the Reserve Bank of India leeway to cut the policy interest rate in August.

### **Data of Index of Industrial Production**

- ▶ The index of industrial production(IIP) expanded 1.7 per cent in May, lower than the revised 2.8 per cent rate in April because of Pulled down by capital goods, consumer durables and manufacturing, and mining. CPI inflation was down to a record low of 1.5 per cent in June from 2.2 per cent in the previous month.
- ▶ Food items continued to witness deflation amid farmer's distress in various parts of the country. The data came when the kharif sowing season is progressing smoothly with even pulses showing a rise in acreage.
- ▶ Economists expect CPI inflation to remain lower than the mandated 2 per cent in July.
- ▶ In terms of broad sectors:
  - Electricity generation expanded 8.7 per cent in May against 5.4 per cent in April. Both manufacturing and mining performed dismally.
  - While capital goods contracted by 3.9 per cent in May after rising in April, consumer durables fell for the sixth consecutive month at 4.5 per cent in May.
  - The new category of infrastructure and construction goods was almost flat, growing 0.1 per cent. Food prices continued to deflate at 2.1 per cent in June after a 1 per cent deflation in the previous month. An over 20 per cent deflation in pulses prices and more than 16 per cent in vegetables led the fall.
  - However, vegetables price deflation was likely to reduce next month due to the monsoon, Pant said. Inflation in services, barring personal care and effects, declined in June from May.
  - However, this was not a good sign for the economy with lack of both manufactured and services demand.
  - The increase in house rent allowance is likely to affect CPI inflation, but its effect will be staggered.

### **INDIA AND EU ESTABLISHED INVESTMENT FACILITATION MECHANISM (IFM)**

#### **Context:**

- ▶ European Union (EU) and India has announced the establishment of an Investment Facilitation

Mechanism (IFM) for EU Investments in India. The mechanism will allow for a close coordination between the European Union and the Government of India with an aim to promote and facilitate EU investment in India.

#### **About Investment Facilitation Mechanism**

- ▶ Trade and Investment are key elements of the EU-India Strategic Partnership launched in 2004. Along with being the first trade partner in goods and services, EU is one of the biggest provider of foreign investment in India, with a stock exceeding US\$ 81.52 billion (more than 4.4 lakh crores INR) as of March 2017. There are currently more than 6,000 EU companies present in India, providing direct and indirect employment to over 6 million people.
- ▶ Based on it, EU and India announced the establishment of an investment Facilitation Mechanism (IFM).
- ▶ As part of the IFM, the EU Delegation to India and the Department of Industrial Policy & Promotion (DIPP), Ministry of Commerce & Industry, agreed to hold regular high level meetings to assess and facilitate "ease of doing business" for EU investors in India.
- ▶ This will include identifying and putting in place solutions to procedural impediments faced by EU companies and investors in establishing or running their operations in India.
- ▶ According to the Government, the establishment of the Investment Facilitation Mechanism is a right step in the direction of strengthening the trade and investment ties between the EU and India. The EU is the largest foreign investor in India and this initiative helps ensuring a more robust, effective and predictable business environment for the EU investors.
- ▶ The IFM has been established with the key objectives of paving the way for identifying and solving problems faced by EU companies and investors with regard to their operations in India.
- ▶ The IFM will cover new investors as well as those already established in India.
- ▶ The IFM is also going to serve as a platform for discussing general suggestions from the point of view of EU companies and investors with regard to ease of doing business in India.

## JOINT INTERPRETATIVE NOTES (JIN) ON THE AGREEMENT BETWEEN INDIA AND BANGLADESH

### Context:

- ▶ Cabinet approves Joint Interpretative Notes on the Agreement between India and Bangladesh for Promotion and Protection of Investments.

### About the agreement

- ▶ The Union Cabinet chaired by the PM Modi has given its approval for the Joint Interpretative Notes (JIN) on the Agreement between India and Bangladesh for the Promotion and Protection of Investments.
- ▶ The JIN would impart clarity to the interpretation of the existing Agreement between India and Bangladesh for the Promotion and Protection of Investments (BIPA). The JIN includes interpretative notes to be jointly adopted for many clauses, including, the definition of investor, definition of investment, exclusion of taxation measures, Fair and Equitable Treatment (FET), National Treatment (NT) and Most Favored Nation (MFN) treatment, expropriation, essential security interests and Settlement of Disputes between an Investor and a Contracting Party.
- ▶ Joint Interpretative Statements in general play an important supplementary role in strengthening the investment treaty regime. With increasing Bilateral Investment Treaty (BIT) disputes, issuance of such statements is likely to have strong persuasive value before tribunals. Such pro-active approach by States can foster a more predictable and coherent reading of treaty terms by arbitration tribunals.

## GOVERNMENT E-MARKETPLACE (GEM)

### Context:

- ▶ Public procurement forms a very important part of Government activity and reform in Public Procurement is one of the top priorities of the present Government. Government e-Marketplace (GeM) is a very bold step of the Government with the aim to transform the way in which procurement of goods and services is done by the Government Ministries/ Departments, PSUs, autonomous bodies etc.

### About Government e-Marketplace

- ▶ GeM owes its genesis to the recommendations of two Groups of Secretaries made to the PM in January 2016. They recommended setting

up of a dedicated e-market for different goods & services procured/sold by Government/PSUs. Subsequently, the FM in his Budget speech for FY 2016-17, announced setting up of a technology driven platform to facilitate procurement of goods and services by various Ministries and agencies of the Government.

- ▶ Directorate General of Sales and Disposal (DGS&D) with technical support of National e Governance Division (NeGD) (MeitY) has developed GeM portal for procurement of both Products & Services.

Benefits of GeM to the Government, Sellers and the Indian industry and economy

- ▶ **Transparency:** GeM eliminates human interface in vendor registration, order placement and payment processing, to a great extent. Being an open platform, GeM offers no entry barriers to bonafide suppliers who wish to do business with the Government. At every step, SMS and e-Mail notifications are sent to both buyer, his/her head of organization, paying authorities as well as sellers.
- ▶ **Efficiency:** Direct purchase on GeM can be done in a matter of minutes and the entire process in online, end to end integrated and with online tools for assessing price reasonability.
- ▶ **Secure and safe:** GeM is a completely secure platform and all the documents on GeM are e-Signed at various stages by the buyers and sellers. The antecedents of the suppliers are verified online and automatically through MCA21, Aadhar and PAN databases. In addition, SEBI empaneled credit rating agencies are also being used for conducting third-party assessment of suppliers. This would further strengthen due diligence about the veracity of suppliers wanting to do business on GeM
- ▶ **Potential to support Make in India:** On GeM, the filters for selecting goods which are Preferential Market Access (PMA) compliant and those manufactured by Small Scale Industries (SSI), enables the Government buyers to procure Make in India and SSI goods very easily.
- ▶ **Savings to the Government:** The transparency, efficiency and ease of use of the GeM portal has resulted in a substantial reduction in prices on GeM, in comparison to the tender, Rate Contract and direct purchase rates. The average prices on GeM are lower by at least 15-20%, and in some cases even upto 56%.



**INITIATIVES FOR IMPROVING RAILWAYS****Context:**

Ministry of Railways has launched the RAIL CLOUD PROJECT; NIVARAN-Grievance Portal (First IT Application on Rail Cloud) and Cashless treatment Scheme in Emergency (CTSE) Scheme and Handing over of 1st CTSE Card.

**About the initiatives**▶ **RailCloud**

- Indian Railway has started a strategic IT initiative, christened IR-OneICT, for enterprise wide digital single platform with an aim to improve customer satisfaction, improve revenue and effective, efficient and safe operations.
- Potential benefits to Railways after implementation of RailCloud are:
  - **Faster and on-demand deployment of application-** RailCloud will pave the way for swifter deployment of application (within 24 hrs as compared to conventional time running into weeks and months). At the same time the cloud hardware and environment will be available for rigorous testing of the new applications.
  - **Optimum use of Servers and storage-** The technology enables maximising the usage of the available server and storage resulting in accommodation of bigger data and more applications within same server space.
  - **Utilization of existing infrastructure as part of Cloud-** The existing resources available with railway will be subsumed in RailCloud thereby ensuring that expenditure is minimized in acquiring new resources.
  - **Rapid scalability and elasticity-** Server and storage space will scale up and down as per the demand. This makes the system suitable to meet the higher demand at peak hours with less expenditure.
  - **IT Security enhancement and Standardization:** The cloud shall be equipped with security features as per the latest GOI guidelines, the security features can be updated in one go for all the applications hosted on the cloud, resulting in enhanced security and

stability with less expenditure and effort.

- **Cost reduction:** The server and storage infrastructure will be deployed as per the requirement, resulting in substantial savings to railway as expenditure will be incurred as and when required instead of upfront shelling out money on procurement of expensive servers.

**g) Better User Experience:** In Cloud, the server resources are constantly scaled up or down as per the no. of users logged on to the system. This ensures a better user experience to the customer.

▶ **NIVARAN-Grievance Portal'First IT application on RailCloud**

- 'NIVARAN-Grievance Portal' is the first IT application to be launched on the RailCloud.
- It is the platform for resolution of service related grievances of serving and former railway employees.
- The existing application was hosted on a conventional server; it has been made cloud-ready and being migrated as the first cloud application of Indian Railways.
- It will save significant revenue and at the same time user experience will also improve.

▶ **Cashless treatment Scheme in Emergency (CTSE)**

- Railway provides Comprehensive Health Care Facilities to its beneficiaries through in-house health Institutions, supplementing with referrals to recognized hospitals whenever necessary.
- The beneficiaries include retired employees and their dependent family members. Large no. of retired beneficiaries lives in the newly developed suburbs of various cities. These parts of the city are often far away from the established Railway Health Institutions.
- In this scenario the RELHS beneficiaries coming to Railway Health Institutions in routine is acceptable, however in emergency situations, precious time (Golden Hour) is lost in travel.
- To provide immediate care to its retired employees in 'Golden Hour' Railway Board has decided to roll out a "Cashless treatment Scheme in Emergency' (CTSE), in empanelled hospitals, for retired employees and their dependent family members.

- A web based system of communication between private hospitals and railway authorities has been developed wherein identity of the beneficiary shall be established using biometrics stored in Aadhar (UIDAI) server, eligibility shall be determined using Railway Data Base and emergency shall be verified by Railway

Medical Officer based on private hospital's clinical report.

- The whole system is online and even the bill processing shall be online. This scheme shall provide help and succor to the retired railway employees at the time of need and at the same time will have a morale boosting effect on the serving employees.

## Miscellaneous News

### STRAY DOG ZOOS

- ▶ Kerala has taken a decision to open dog rehabilitation zoos in all 14 districts to tackle the alarming situation created by ferocious strays in the state.
- ▶ However, the Centre, the Animal Welfare Board and NGOs opposed opening dog zoos and said better results in checking rising population of stray dogs would be achieved if the state government implemented the Animal Birth Control (Dogs) Rules to sterilise the canines.

### SDG INDEX

#### Context:

- ▶ India is ranked 116 out of 157 nations on a global index that assesses the performance of countries towards achieving the ambitious sustainable development goals (SDGs).

#### About the Index

- ▶ The *SDG Index and Dashboards Report* provides a report card for country performance on the historic Agenda 2030 and the Sustainable Development Goals (SDGs).
- ▶ The annual report shows how leaders can deliver on their promise and it urges countries not to lose the momentum for important reforms. It is produced by the Sustainable Development Solutions Network (SDSN) and the Bertelsmann Stiftung.

#### Findings of the Report

- ▶ Sweden leads the list, followed by Denmark and Finland. Among the G7 countries, only Germany and France can be found among the top ten performers.
- ▶ The United States ranks 42<sup>nd</sup> on the Index, while Russia and China rank 62<sup>nd</sup> and 71<sup>st</sup> respectively.
- ▶ India is ranked 116<sup>th</sup> on the index with a score of 58.1, behind countries such as Nepal, Iran, Sri Lanka, Bhutan and China. Pakistan is ranked 122.

- ▶ Greatest obstacles to achieving the global goals for high-income countries are poor performances regarding sustainable consumption and production.
- ▶ SDG Index and Dashboards highlight the need for urgent action on the part of G20 countries in making sustainable development a reality both within and beyond their borders.

### MALABAR EXERCISE

#### Context:

- ▶ India has kicked off Malabar 2017 exercise with US and Japan.

#### About the exercise

- ▶ The 2017 Malabar exercise was the 21<sup>st</sup> edition of the exercise and conducted from 10 to 17 July 2017. This edition involved navies from India, USA and Japan.
- ▶ The exercise included a harbor phase at Chennai from 10 to 13 July 2017 and a sea phase from 14 to 17 July 2017 in the Bay of Bengal.
- ▶ This edition focused on Aircraft Carrier operations, Air defense, Anti-submarine warfare (ASW), Surface warfare, Visit Board Search and Seizure (VBSS), Search and Rescue (SAR), joint and tactical procedures.
- ▶ There was also joint training between the naval special forces of the Indian and US Navies at INS Karna, Visakhapatnam.

### WORLD DEVELOPMENT REPORT, 2017

#### Context:

- ▶ The World Development Report (WDR) is an annual report published since 1978 by the International Bank for Reconstruction and Development (IBRD) or World Bank.
- ▶ World Development Report 2017: Governance and the Law address these fundamental questions, which are at the heart of development.

**Main messages:**

► Ineffective policies can persist, while potentially effective policies are often not adopted. The World Development Report 2017: Governance and the Law explores why some policies fail to achieve desired outcomes and what makes other policies work. The main messages of the WDR 2017 are:

- **Successful reforms are not just about “best practice.”** To be effective, policies must guarantee credible commitment, support coordination, and promote cooperation.
- **Power asymmetries can undermine policy effectiveness.** The unequal distribution of power in the policy arena can

lead to exclusion, capture, and clientelism.

- **Change is possible.** Elites, citizens, and international actors can promote change by shifting **incentives**, reshaping **preferences and beliefs**, and enhancing the **contestability** of the decision making process.
- **Three guiding principles for rethinking governance for development are:**
  - Think not only about the **form** of institutions, but also about their **functions**.
  - Think not only about **capacity building**, but also about **power asymmetries**.
  - Think not only about the **rule of law**, but also about the **role of law**.