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7 PM COMPILATION

November, 2023

Features of 7 PM compilation

- ❖ Comprehensive coverage of a given current topic
- ❖ Provide you all the information you need to frame a good answer
- ❖ Critical analysis, comparative analysis, legal/constitutional provisions, current issues and challenges and best practices around the world
- ❖ Written in lucid language and point format
- ❖ Wide use of charts, diagrams and info graphics
- ❖ Best-in class coverage, critically acclaimed by aspirants
- ❖ Out of the box thinking for value edition
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70 Hours Work Week- Analysis- Explained Pointwise

Introduction

Recently, Infosys Founder Narayan Murthy suggested '70 hours work week' to improve India's labour productivity and competitiveness. He emphasised the need to improve India's labour productivity, citing Germany and Japan as examples. This idea of long working hours as a measure to improve the country's work productivity has drawn both support and criticism.

What is Productivity and what are its types?

Productivity- Productivity measures how efficiently inputs like labour and capital are used to produce outputs such as goods and services.

Types of Productivity

Labour/Work Productivity	(1) Measures the output produced per hour of work. For ex- for a GDP of $1 trillion with its people working 20 billion hours, the labour productivity is $50 per hour. (2)It is directly linked to increased wages, better living standards, and consumer's purchasing power.
Capital Productivity	(1) Measures the output produced by using physical assets like machinery, buildings and equipments. (2) It indicates how efficiently investments in physical assets are used, impacting profitability and competitiveness.
Total Factor Productivity	(1) Measures the output produced by advancements in innovation and technology. (2) It reflects efficiency improvements, technological progress, and innovation in an economy.

What is the status of India's labour productivity and working hours ?

Indian Labour productivity status as per the ILO Data

India	India's hourly output stands at $8.47. Indians work an average of nearly 48 hours per week.
France	France's hourly output stands at $58. Average workweek is around 30 hours per week.

Young India's working hours

(1) Time Use Survey in India 2019 data shows that young Indians aged 15-29 currently work around 7.2 hours a day in rural areas and 8.5 hours a day in urban areas.

(2) A State-wise comparison of the time spent on work in urban areas is higher than in rural areas. Uttarakhand ranks first, with young people from the State working for an average of 9.6 hours a day.

Mr. Murthy's rationale for long working hours taking the productivity increase of Japan and Germany by long working hours

Germany and Japan after the second world war encouraged their workforce to put in extra hours of work per day to boost the economic productivity. The average working hours was between 2,200 to 2,400 hours per year, which came down to 8.3 to 9 hours of work per day, adhering to a five-day work week without holidays.

Source- The Hindu

Source- The Hindu
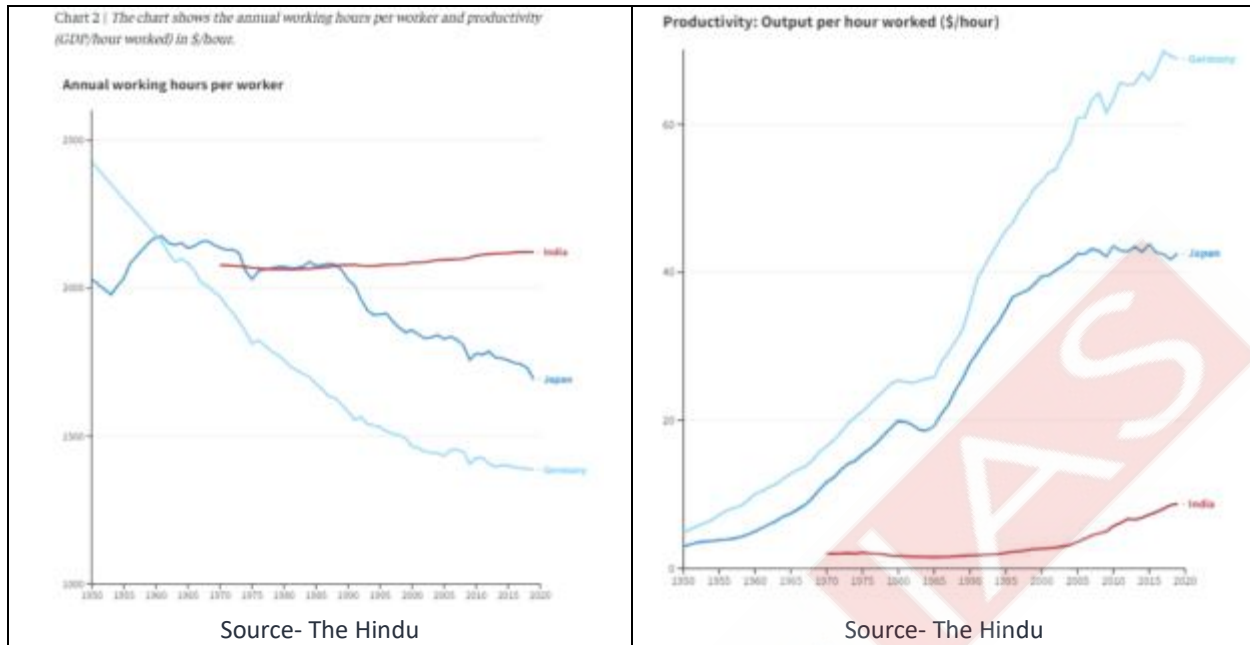
However, 70 hours work week would translate to 14 hours per weekday. This would be even more than what Japan and Germany reached in the post world war era.

What are the arguments in favour of '70 hours work week'?

1. Increased Productivity- Advocates argue that a longer workweek could potentially result in higher productivity due to more time spent on tasks and projects. Ex- Japan and Germany productivity push due to longer working hours.
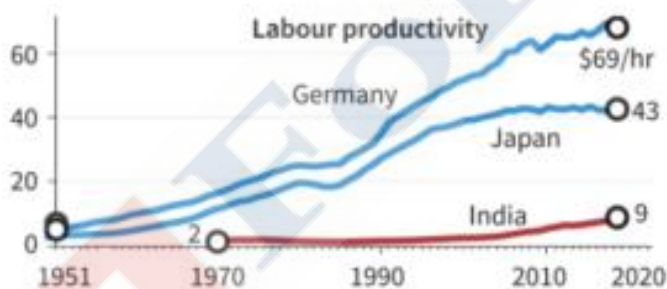
Figure 1. Source- The Hindu

2. Higher Economic Growth- It might boost economic growth as more work hours could contribute to increased production and innovation. It can help India reach the goal of $5 trillion economy.

3. Increased Global Competitiveness- In a globalized world, longer work hours might help Indian professionals remain competitive in the international job market. Ex- Financial Sector in India can match the global standards which work round the clock.

4. Potential for higher tax revenues for the government- Increased economic activity and higher incomes due to longer working hours result in greater tax revenues. This can be used for public services and infrastructure development.

5. Opportunity for Skill Development- Individuals can achieve mastery in one's chosen field by investing extra number of hours at work. For Ex- Out of the 70 hours, one can assign 40 hours to his/her professional responsibilities and set aside 30 hours for personal skill enhancement.

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6. Leveraging the Demographic Dividend for Nation Building- India needs a dedicated labour force where young individuals are willing to put in 70 hours of work per week for the service of nation-building.

What are the Arguments against the '70 hours work week'?

1. Decline in productivity with Long Working Hours- Research shows that productivity declines significantly after 50 hours of work per week and drops further after 55 hours. Germany and Japan further increased productivity by reducing working hours to 1,400-1,600 hours a year.
Ex- World's most productive countries have the least work week days.

Most Productive Countries, 2015

Rank	Country	GDP per hour worked	Employed Population	GDP (USD)	Average work week (hrs)
1	Luxembourg	$93.4	405,600	$57b	29
2	Ireland	$87.3	1,989,400	$302b	33.5
3	Norway	$81.3	2,753,000	$318b	27.3
4	Belgium	$69.7	4,601,200	$498b	29.8
5	United States	$68.3	151,000,000	$18,037b	33.6
6	Denmark	$67.6	2,829,000	$270b	27.2
7	France	$65.6	27,523,000	$2,648b	28.2
8	Germany	$65.5	43,057,000	$3,857b	26.3
9	Netherlands	$65.4	8,792,000	$818b	27.4

Figure 2. Source- TIME

2. Burnout and Mental Health- Workers who put in 70 hours a week are more prone to experience burnout, higher levels of stress and mental health problems. Extended work hours may negatively impact an individual's health and work-life equilibrium.

3. Increased healthcare costs due to stress-related issues- Longer hours can result in higher healthcare costs, as stress-related health problems become more prevalent.

4. Negative Effect on Family Life- Long work hours can make it more difficult to meet personal and family obligations, strain relationships within the family and disturb the work-life balance.

5. Diminished Creativity and Innovation- Overworked People frequently exhibit less creativity and innovation. Tiredness can hinder one's capacity for original thought and problem-solving.

6. Work Quality- Longer hours do not always translate into better work. Tired employees are more prone to make mistakes and do subpar work.

7. Exacerbation of gender Inequalities- Extended work hours may have a disproportionate impact on women, who often shoulder greater caring and home obligations, hence exacerbating gender inequalities.

8. Danger of Exploitation- Employers may take advantage of a culture of extended work hours, which could result in unpaid overtime, subpar working conditions, and abuses of workers' rights.

9. Negative Impact on the Community and Society- Long work hours can reduce participation in the community and society, which can have a negative impact on volunteering work and social cohesiveness.

> **Read More- On Labour Productivity in India- NRN Gets It Wrong**

What should be the way forward for Increasing productivity without increasing the work hours?

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1. Technological Adoption- We must Invest in modern technologies and automation to streamline processes and improve productivity.

2. Skills Enhancement- Skill India Mission must be implemented properly to provide skill training and education to workers.

3. Upgradation of Infrastructure- We must develop better transportation infrastructure to reduce commuting time and increase accessibility to workplaces.

4. Fostering Innovation- We must encourage research and development (R&D) activities to drive innovation, leading to improved products and services and increased productivity.

Conclusion

Finally, while N.R. Narayana Murthy's proposal for a 70-hour workweek for young Indians aims to increase productivity, it should be carefully evaluated in light of the potential negative effects on work quality, burnout, mental health problems, and work-life balance. Writing good employment rules requires striking a balance between the needs of the job and the welfare and personal development of the employee.

Reads More- **The Times of India**
UPSC Syllabus Topic: GS Paper 3 Indian Economy – **Employment and labour productivity.**

Road Accidents in India- Explained Pointwise

Introduction

The Annual Report on 'Road Accidents in India-2022' has been published by the Ministry of Road Transport and Highways. The report highlights that there are 53 road accidents and 19 deaths due to these road accidents per hour in India.

What are the key Highlights of Road Accidents in India report?

Report Preparation Methodology- This report is based on the data/information received from police departments of States/UTs on calendar year basis in standardized formats as provided by the United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP) under the Asia Pacific Road Accident Data (APRAD) base project.

Brakes off

Road accident fatalities have increased over the past decade, as per the Road Accidents in India 2022 report

Year	No. of road accidents	Fatalities	Severity*
2018	4.7 lakh	1.57 lakh	32.4
2019	4.56 lakh	1.58 lakh	34.8
2020	3.72 lakh	1.38 lakh	37.2
2021	4.12 lakh	1.53 lakh	37.3
2022	4.61 lakh	1.68 lakh	36.5

*Number of persons killed per 100 accidents

Figure 3. Source- The Hindu

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Key Highlights-The key highlights of the report are summarised below-

Increase in road accidents over the years	(1) There were a total 4,61,312 road accidents across the country in 2022, which claimed as many as 1,68,491 lives. (2) The number of road accidents in 2022 increased by 11.9% and deaths rose by 9.4% as compared to 2021.
Increase in severity of accidents (Severity is the number of persons killed per 100 accidents)	(1)Severity of road crashes has increased over the past decade from 28.2 in 2012 to 36.5 in 2022. (2) There has been a consistent increase in the severity of cases every year even during the COVID times.
Maximum deaths on the National Highways (NH) and State highways (SH)	(1) National and State highways, which account for only 4.9% of the total road network, witnessed 56.1% of all road crashes and almost 61% of all road crash fatalities in the country.
States with Maximum deaths	Uttar Pradesh registered the highest share of deaths at 13.4%. This was followed by Tamil Nadu at 10.6% and Maharashtra at 9%.
Demographic Distribution of deaths	(1) People in the 18-45 age bracket comprised 67% of the total fatalities in the road accidents. (2) Children death fatalities were around 9,528 in 2022.

What are the reasons for the increase in Road accidents?

According to the report, the reasons for the increase in road accidents are mentioned below-

1. Human errors and Traffic Rules Violations- Over speeding is the major cause and it accounts for 71.2 percent of the persons killed in 2022. Driving on the wrong side is the second reason accounting for 5.4 per cent deaths.

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Chart 3.1: Road Accidents by type of Traffic Rules Violation during 2022

	Injured	Fatalities	Accidents
Others	18.1	18.1	18.2
Use of mobile phone	1.4	2.0	1.6
Jumping red light	0.8	0.9	0.9
Driving on wrong side/Lane indiscipline	4.9	5.4	4.9
Drunken driving/consumption of alcohol & drug	2.0	2.5	2.2
Over-speeding	72.8	71.2	72.3

Percentage
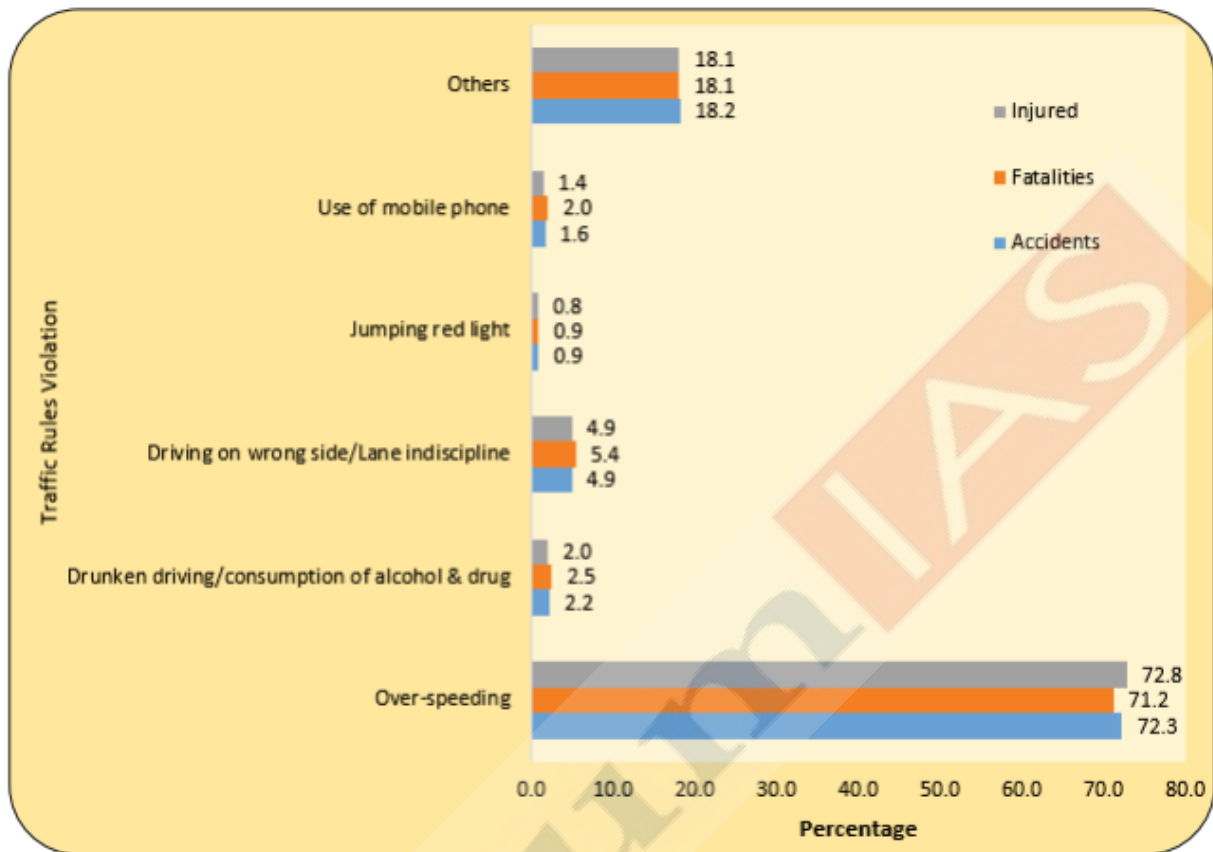
Source- MoRTH

2. Faulty Road Designs- Faulty road engineering leading to black spots, poor designing of junctions, inadequate signage, haphazard planning of state highways and city roads are also some major factors causing road accidents.

3. Weak Vehicle Safety Standards in India- Crash tests carried out by the Global New Car Assessment Programme (NCAP) in 2014 revealed that some of India's top-selling car models failed the UN (United Nations)'s frontal impact crash test.

4. Lack of Golden Hour Treatment- Lack of rapid trauma care on highways leads to high fatalities.

5. Low awareness- Indians have very low awareness regarding the importance of safety features like airbags, Anti lock Braking system, safety belt usage etc.

What are the impacts of road accidents in India?

1. Economic Impact- As per the World Bank report, Indian economy looses 3 to 5 percent of its GDP each year due to road accidents.

2. Social Impact- Vulnerable Road Users (VRUs) like the male urban poors, account for more than half of all road crash deaths and serious injuries in the country. These accidents further push them into extreme poverty as they are pushed out of employment.

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3. Gender-Specific Impact- According to World Bank's report "Traffic Crash Injuries and Disabilities: The Burden on Indian Society 2021" , about 50% of Indian women were severely affected by the decline in their household income after a crash.

What measures have been taken in India to reduce road accidents?

1. Formulation of National Road Safety Policy (NRSP), 2010- The policy was formulated based on the recommendations of S Sundar Committee. Some of the important highlights are-
(a) Establishment of Road Safety Information Database.
(b) Periodical review of road design standards and Vehicle safety standards.
(c) Creation of National Road Safety Council to supervise matters related to road safety.

2. Establishment of District Road Safety Committees (DRSC)- Established under the Section 215 of the Motor Vehicle Act of 1988. These have been entrusted with creation of a district road safety plan and an emergency medical plan.

3. Passage of Motor Vehicles (Amendment) Act 2019- GOI has tried to enhance the road safety measures through this act.
(a) Creating a National Road Safety Board to advise the government on traffic management. (b) Higher fines for traffic rule violations.
(c) Recalling defective vehicles which are dangerous for the environment and people.
(d) Creation of a 'Solatium Fund' for victims of hit-and-run accidents.
(e) Punishment to the owner for violations committed by Juvenile.
(f) Automated testing for driver's licence and fitness certificate (FC).
(g) Protection of Good Samaritans from civil and criminal liability.

Read More- Motor Vehicles (Amendment) Act 2019

4. Other technical initiatives- Further more, other technical initiatives have been taken which are mentioned below-
(a) Front and side crash tests for new car models.
(b) New cars are required to have airbags fitted as standard.
(c) Installation of Roadside Safety Crash barriers and speed warning boards.
(d) Rectification of identified Black spots.

Some global initiatives for Road Safety

Brasilia Declaration on Road Safety (2015)- India is a signatory to the Declaration.

The countries plan to achieve Sustainable Development Goal 3.6 i.e., to halve the number of global deaths and injuries from road traffic accidents by 2030.

Decade of Action for Road Safety 2021-2030- The UN General Assembly adopted resolution "Improving global road safety" with the ambitious target of preventing at least 50% of road traffic deaths and injuries by 2030.

What measures must further be adopted to reduce road accidents in India?

1. Indian Vehicles safety features must conform to global best standards- The European Union's General Safety Regulation which prescribes features like advanced emergency braking technology and intelligent speed assistance must be adopted in India.

2. Implementation of the important recommendations of the KS Radhakrishnan panel on Road Safety– The important ones are
(a) Compulsory Audit on road safety by the state governments

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(b) Creating awareness among people on road safety rules, insurance policies

(c) Providing enough compensation to victims on time.

3. Separation of lanes for different types of Vehicles- There should be separation of lanes for 2-Wheelers and heavy vehicles.

4. Strict implementation of the existing rules-The enhanced fines for traffic rules violations will also help in reduction of road accidents in India.

The approach to road safety has to be proactive, rather than reactive. The public has as much role to play as the Government. A concerted and focused effort from both the government and the citizens can help bring down road accidents and help save precious lives.

> **Read More- The Hindu, The times of India**
> **UPSC Syllabus- Infrastructure: Energy, Ports, Roads, Airports, Railways etc.**

Ethics Committee- Functions and Challenges- Explained Pointwise

Introduction

Recently, Lok Sabha Ethics Committee has initiated investigation over 'Cash for Query' allegations against a Member of Parliament (MP) accused of accepting bribes to ask questions in Parliament.

What is Lok Sabha Ethics Committee ?

About Lok Sabha Ethics Committee
(1) Each of the two Houses of Parliament has an ethics committee. The ethics committee in Lok Sabha has 15 members. The ethics committee in Rajya Sabha has 10 members.
(2) The members of the Lok Sabha Ethics Committee are appointed by the Speaker for a period of one year.

History of Evolution of Ethics Committees

1996	In 1996, Presiding Officer's Conference held in Delhi first mooted the idea of ethics panels for the two Houses (Lok Sabha and Rajya Sabha).
1997	On 4th March 1997, the Vice President (and Rajya Sabha Chairman) K R Narayanan constituted the Ethics Committee of the Rajya Sabha to oversee the moral and ethical conduct of members and examine cases of misconduct referred to it.
2000	In 2000, an ad hoc Ethics Committee of Lok Sabha was constituted by the late speaker G.M.C. Balyogi on the recommendations of the Committee of Privileges.
2015	In 2015, the Lok Sabha Ethics committee became a permanent Committee.

Functions of Lok Sabha Ethics Committees

(1) Lok Sabha Ethics Committee oversees the moral and ethical conduct of the members.
(2) Lok Sabha Ethics committee prepares a Code of Conduct for members, which are amended from time to time.
(3) Lok Sabha Ethics Committee examines every complaint relating to unethical conduct of a member of Lok Sabha referred to it by the Speaker and make such recommendations as it may deem fit

Procedure for handling of complaints by the Lok Sabha Ethics committee

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Complaint's Origin	(1) The complaint against Lok Sabha MP can be initiated by another Lok Sabha MP only. (2) However, any person can complain against any Lok Sabha MP. But this complaint can be submitted by only a Lok Sabha MP, along with evidence of the alleged misconduct, and an affidavit stating that the complaint is not "false, frivolous, or vexatious". (3) If the Lok Sabha MP himself complains, the affidavit is not needed.
Speaker's Role	(1) The Speaker of the Lok Sabha can refer to the Committee any complaint of unethical behaviour against an MP. (2) The Committee does not entertain complaints based only on media reports or on matters that are sub-judice.
Prima Facie Inquiry and Report presentation	(1) The Committee makes a Prima Facie inquiry before deciding to examine a complaint. (2) The committee makes its recommendations after evaluating the complaint. (3) The Committee presents its report to the Speaker, who asks the House if the report should be taken up for consideration. There is also a provision for a half-hour discussion on the report.

What actions can be taken by the committee

(1) If the Ethics Committee finds merit in the complaint, it can make recommendations. The potential punishment it can recommend typically involves Suspension of the MP for a specified period. (2) The House, which includes all MPs, ultimately decide whether to accept the committee's recommendation and determine the nature and extent of the punishment, if any.

> **Previous Case of recommendation of suspension by the ethics committee "2005 Cash for query case"**- In 2005, the two Houses adopted motions to expel 10 Lok Sabha MPs and one Rajya Sabha MP who were accused of agreeing to ask questions in Parliament for money. In Rajya Sabha, the complaint was examined by the House Ethics Committee which recommended suspension. However, the motion in Lok Sabha was based on the Bansal Committee's report, a special committee set up by the Speaker to examine the issue. The expelled MPs, demanded that the Bansal Committee's report be sent to the Privileges Committee, so that the parliamentarians could defend themselves.

Difference between Ethics Committee and Privileges Committee
(1) The work of the Ethics Committee and the Privileges Committee often overlap. An allegation of corruption against an MP can be sent to either body, but usually more serious accusations go to the Privileges Committee.

(2) The Ethics Committee can take up only cases of misconduct that involve MPs. The privilege committee can interrogate a non-MP also for actions that attack the authority and dignity of the House.

What is the significance of Lok Sabha Ethics Committee ?

Advice and Guidance- The committee helps Members of Parliament understand and abide by the code of conduct required of them as elected officials by offering them advice and guidance on ethical issues.

Investigation and Decision-Making- In cases where unethical conduct is established, the committee can recommend appropriate action or sanctions against the erring MPs, including suspension or expulsion from the Lok Sabha. This helps in ensuring that ethical decisions are taken by the MPs.

'Code of Conduct' as a guide map for the MPs- The 'code of conduct' devised by the committees provides clarity to the 'MPs in their conduct' to uphold the 'principle of transparency' and 'clarity and consistency'.

What are the issues associated with the functioning of the Lok Sabha Ethics Committees?

(1) Issues with the functioning of Ethics Committee- The term 'unethical conduct' has not been defined anywhere. It is left entirely to discretion of the committee to examine a particular act of conduct as ethical or unethical.

(2) Evolution of Ethical Standards- Ethical standards often evolve with time and a rigid view of these ethical standards by the Lok Sabha Ethics committee, limits the ability of the MP to adapt to changing norms and expectations.

(3) Referring the graft cases to the Ethics Committee instead of the Privileges Committee/Special committees- Complaints of MPs accepting money for parliamentary work are usually referred to the privileges committee or special committees appointed by the House for that purpose. Ex- Bansal Committee on the "cash for query case 2005". However, the present case of "cash for query" has been referred to the ethics committee. There are chances of partisanship in the investigation.

> **Read More- On cash for query case – Ethics, parliamentary conduct and the Indian MP**

Conclusion

The committee's role in interpreting and applying ethical standards, while taking into account the evolving nature of ethics, is crucial to maintaining the integrity of parliamentary proceedings and the conduct of MPs. The committee can use a variety of techniques, such as seminars and workshops, to increase MPs' understanding of moral principles and encourage moral behaviour.

> **Read More-** The Indian Express
>
> **UPSC Syllabus- GS Paper 2 Indian Polity** – Parliament—structure, functioning, conduct of business, powers & privileges and issues arising out of these.

Air Pollution in Delhi and Mumbai- Explained Pointwise

Introduction

Air Pollution in Delhi and Mumbai has again hit the national headlines. Delhi's air quality has breached the 400 AQI mark to hit the 'severe' category and plummeted to reach 575. Before Delhi, Mumbai in October witnessed 'severe' air quality.

According to the recently published 'Respirer Reports' by Respirer Living Sciences, PM 2.5 levels in both Delhi and Mumbai has been increasing in the last five years.

Delhi's air pollution worsening for the past two years	Mumbai's air quality steadily deteriorates from 2019 to 2023

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PM$_{2.5}$ in Delhi in October for the years 2019-2023

Credit: Respirer Reports

PM$_{2.5}$ in Mumbai in October for the years 2019-2023

Credit: Respirer Reports
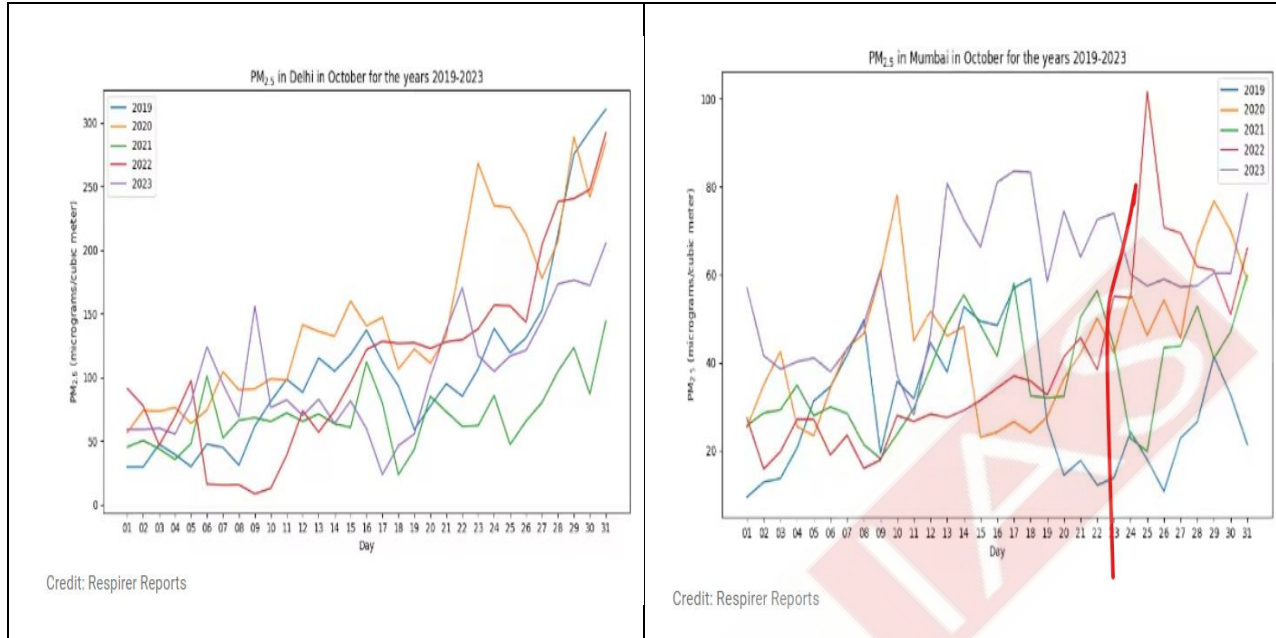
What is air Pollution and how is it measured in India?
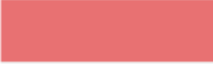
Air Pollution- Air pollution is the introduction of chemicals, particulates or biological materials into the atmosphere that cause discomfort, disease or death to humans.

Measurement of Air Pollution In India

In India, air pollution is measured according to the National Air Quality Index developed by Central Pollution Control Board (CPCB) in 2014.

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The measurement of air quality in the NAQI framework is based on eight pollutants , namely-Particulate Matter (PM10), Particulate Matter (PM2.5), Nitrogen Dioxide (NO2), Sulphur Dioxide (SO2), Carbon Monoxide (CO), Ozone (O3), Ammonia (NH3) and Lead (Pb).

Categorization of Air Quality under AQI:

AQI	Remark	Colour Code	Possible Health Impacts
0-50	Good		Minimal Impact
51-100	Satisfactory		Minor breathing discomfort in sensitive people
101-200	Moderate		Breathing discomfort to people with asthma and heart disease.
201-300	Poor		Breathing discomfort to most people on prolonged exposure.
301-400	Very Poor		Respiratory illness on prolonged exposure
401-500	Severe		Affects healthy people and seriously impacts those with existing diseases.

Source- CPCB

Read More- Air Quality Standard of India

What are the reasons for the rise in air pollution in Delhi and Mumbai?

Reasons for the increase in air pollution in Delhi

(1) **Stubble Burning-** Stubble burning in Punjab, Rajasthan and Haryana emits large amounts of toxic pollutants in the atmosphere. These pollutants contain harmful gases like methane (CH4), carbon monoxide (CO), volatile organic compounds (VOC) and carcinogenic polycyclic aromatic hydrocarbons.

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(2) **Reduced Wind Speed-** Low-speed winds in winters are unable to disperse these pollutants effectively. Further, Delhi lies in a landlocked region and does not have the geographical advantage of sea breeze to disperse the suspended pollutants.

(3) **Effect of Northwesterly winds-** After the withdrawal of monsoons, the predominant direction of winds in northern India is northwesterly. These northwesterly winds bring the dust from the gulf region, northern Pakistan and Afghanistan.

(4) **Dip in Temperatures lowers the inversion height-** With the decrease in temperature, inversion height lowers down, leading to concentration of pollutants in the lower atmosphere. (Inversion height is the layer beyond which pollutants cannot disperse into the upper layer of the atmosphere).

(5) **Vehicular Pollution-** Delhi has one of the highest number of registered private vehicles in India. Official emissions inventories of 2018 show that vehicles emit about 40 per cent of the particulate load in the city of Delhi.

(6) **Construction Activities and Open Waste Burning-** Pollution due to landfill burning and construction debris enhances the pollution levels in the Delhi NCR region.

(7) **Firecrackers-** Firecrackers burning during Diwali further adds to the increase in air pollution levels.

Reasons for the Increase in air Pollution in Mumbai

(1) **Delay in the sea wind reversal pattern-** The sea wind reversal pattern has been delayed. Hence the pollutants in the atmosphere could not be taken away to the sea. (Sea wind reversal is the alternating movement of winds from land to sea and sea to land).

(2) **Increased temperature in Mumbai-** Due to the unusually high temperature in October, a steep temperature gradient developed between the city and nearby hilly regions. This resulted in winds from the hilly region areas moving towards Mumbai. These winds picked up dust from major construction projects in Navi Mumbai and surrounding areas.

(3) **Refineries, industries and garbage-burning-** These anthropological factors have further contributed to increase in the pollution levels.

Read More- On Air Pollution in Mumbai – Climate change has made it harder to breathe in Mumbai

What are the harmful effects of air pollution?

The harmful effects of air pollution have been tabulated below-

Economic effects	(1) Leads to loss of labour productivity, GDP and per capita income levels. (The Confederation of Indian Industry estimates that air pollution costs Indian businesses $95 billion, or 3 per cent of India's GDP every year). (Poor air amounts to about Rs 7 lakh crore of annual economic loss, which is more than a third of our annual GST collection) (2) Air pollution reduces agricultural crop yields and commercial forest yields.
Human Health Effects	(1) Air pollution leads to multiple health conditions including respiratory infections, heart disease and lung cancer. (2) As per the Global Burden of Disease comparative risk assessment for 2015, air pollution exposure contributes to approximately 1.8 million premature deaths and loss of 49 million disability adjusted life-years (DALYs) in India.

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Environment	(1) Acid Rain– Damages crops, natural vegetation, soil chemistry and leads to damage to ancient monuments (Taj Mahal Yellowing). (2) Eutrophication of water bodies- Increases nitrogen intake of freshwater bodies leading to Eutrophication.

What Govt initiatives have been taken to reduce air pollution in Delhi?

(1) **Crop Residue Management Scheme-** Crop Residue Management (CRM) scheme which provides subsidy to farmers for buying 'Turbo Happy Seeder', 'Super SMS attachment', 'rotavators' and 'superseeder'.

(2) **Commission for Air Quality Management (CAQM)-** CAQM is a statutory body formed under the Commission for Air Quality Management in National Capital Region and Adjoining Areas, Act 2021. CAQM has provided a framework to tackle the problem of air pollution due to stubble burning.

(3) **Initiatives to reduce Vehicular Pollution-** The shift from BS-IV to BS-VI, push for Electric Vehicles (EVs), Odd-even Policy have all been implemented to reduce Vehicular pollution.

(4) **Graded Response Action Plan (GRAP)-** GRAP measures like shutting down thermal power plants and a ban on construction activities are implemented to curb air pollution.

What should be the way ahead to curb air pollution in Delhi and Mumbai?

A start has been made to recognise the severity of air pollution on the health of the population and the economy. Delhi and Mumbai are the two financial backbones of our country. The following measures need to be undertaken to curb air pollution in Delhi and Mumbai-

(1) **Increase the AQI monitoring stations-** The adequate numbers of AQI monitoring stations as mandated by the National Clean Air Programme (NCAP) must be installed. Also, sensor based AQI monitoring units that give hyperlocal data must be set up.

(2) **Enhanced powers to the authorities to take action according to the hyperlocal data-** It will help the authorities take pre-emptive actions and allow denser monitoring. For example, if it is found that construction is taking place in a certain pocket without following norms, the authorities can identify the location and immediately penalise the violators.

(3) **National Nodal Authority for Air pollution-** India needs a nodal authority with constitutional powers to ensure collaborative pre-emptive action on air pollution with timelines for all stakeholders.

(4) **Setting up Independent commissions for management of AQI-** Independent commissions like the Commission for Air Quality Management (CAQM) for NCR and adjoining regions, should be set up in other major cities like Mumbai and Chennai. It will help in taking actions against the violators irrespective of the geographical region. Regional or airshed approach must be used to counter the geographical challenge to air pollution management as done in Los Angeles, Mexico City and many mega-urban regions in China.

(5) **Stricter guidelines for industrial emmissions-** SEBI's Business Responsibility and Sustainability Report (BRSR) framework can lay down tighter guidelines to ensure uniformity in the unit of reporting pollutant emissions, declaration of air pollution mitigation targets (like companies do for carbon emissions), and reporting of disaggregated emissions data. We must reduce exposure across the value chain from production to consumption to recycling of goods and delivery of services.

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(6) **Making 'Clean air' an investment sector-** The push for substitution of fossil fuels will increase investment opportunities in clean energy transition sector like green mobility, clean cooking. This will open up a new sector for investment and will help in reducing the air pollution simultaneously.

(7) **Funds and Manpower Training to combat pollution-** The Sixteenth Finance commission should provide finance to urban local bodies for climate change and air pollution reduction interventions. The urban local bodies manpower must be properly trained and the dysfunctional State pollution Control Boards must be empowered to take punitive actions.

(8) **Increased awareness and incentive for civil society-** Different stakeholders need to know why cleaning the air will benefit their livelihoods and businesses. For instance, farmers will not curb stubble burning until a viable circular economy for alternative uses of biomass emerges. We must adopt sustainable lifestyles which are in line with government's LiFE initiative.

(9) **Increased use of Public transport and reduced dependence on private vehicles-** The Delhi Master Plan target of 80 per cent of motorised trips by public transport by 2020 has not been met yet. The deadline has been shifted to 2041. This deadline needs to be met by augmenting the public transport system. The private vehicles use must be disincentivised by introducing ward-wise parking management area plans and parking tax.

(10) **Limit crop residue burning-** We must implement known solutions like shifting to less water-intensive crops, altering irrigation arrangements, timing, harvesting, baling practices and building a wider year-round market for straw.

(11) **End-to-end construction and waste management**– It is pivotal to reducing tonnes of dust and waste released in the air and water bodies.

(12) **Learnings from London, China, Singapore, Hong Kong must be incorporated-** London does not allow private vehicles in areas well-connected by public transport. China uses 'fixed number of car sales per year' in Beijing. We must improve the public transport like London, China, Singapore and Hong-Kong.

> **Read More-** Indian Express 1, Indian Express 2, Indian Express 3
> **UPSC Syllabus-** Conservation, Environmental Pollution and Degradation, Environmental Impact Assessment.

National Security Strategy of India- Explained Pointwise

Introduction

The process of bringing the 'National Security Strategy of India' has kickstarted after years of deliberations in the military and strategic community. This is the first time that India will come out with a national security strategy. The National Security Council Secretariat (NSCS) is putting in place a comprehensive National Security Strategy in consultation with several Central ministries and departments. A final Cabinet approval will then be sought for it.

What is National security strategy?

National Security Strategy- A National Security Strategy document outlines the country's security objectives and the ways to be adopted to achieve these objectives. The strategy document defines the traditional, non-traditional threats and introduces accountability of agencies dealing with these threats.

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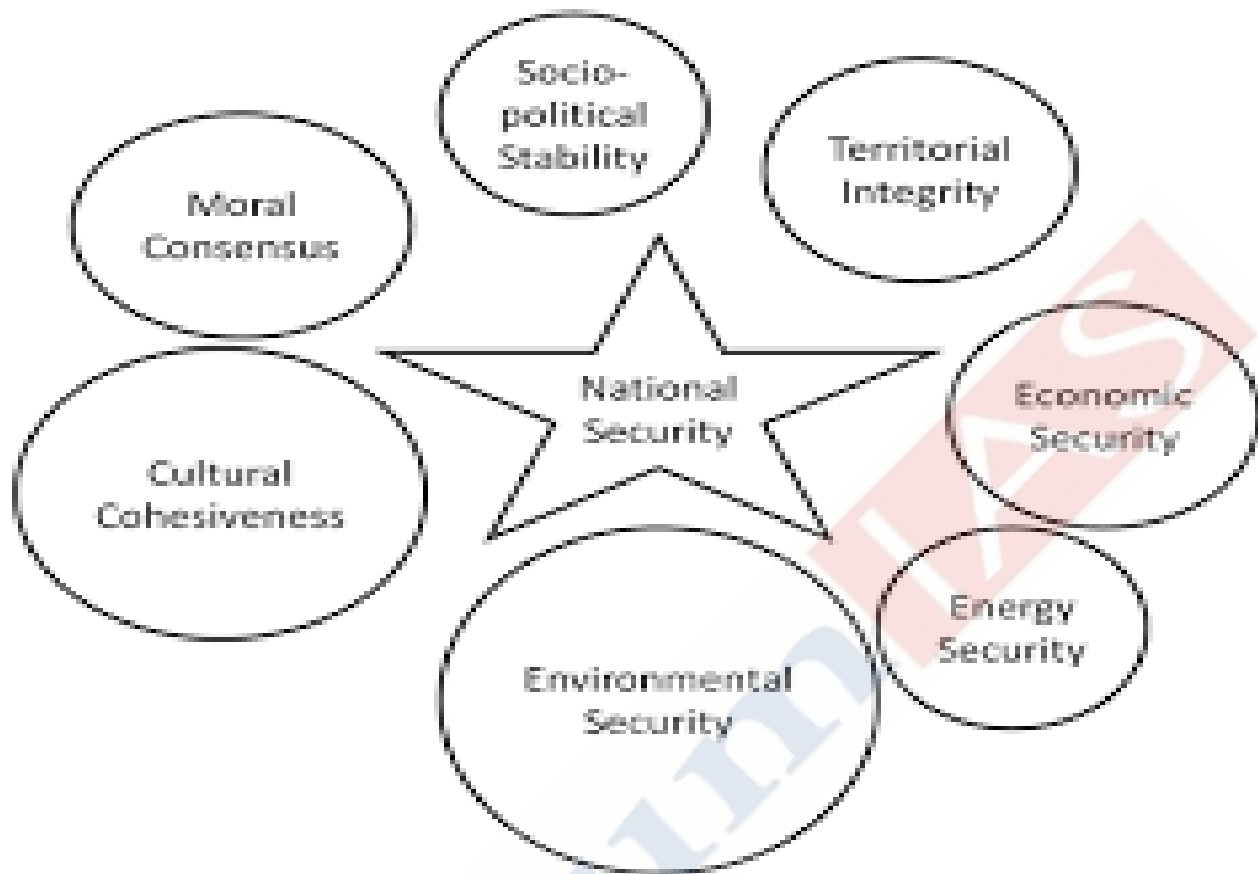
Source- Forum IAS

> **Countries having National Security Strategy**
> (1) **Developed Countries with advanced Military and security Infrastructure**- US, UK and Russia have published National Security Strategies which are updated from time to time.
> (2) **India's Neighbours**- China has a Comprehensive National Security which is closely tied to its governance structure. Pakistan also has brought out a National Security Policy 2022-2026 which underlines its national security objectives and priority areas.

India's previous attempts at bringing National Security strategy

Three previous attempts were made to come out with a national security strategy, but there was hesitation at the political level.

What is the need for 'National Security Strategy of India'?

(1) **Rising Geopolitical tensions**- Security strategy document is needed to address the uncertainties arising from the recent geopolitical tensions like the Israel-Hamas war, Russia-Ukraine War.

(2) **Address modern non-traditional threats to India's security**- The security strategy of India will help in addressing the emerging non-traditional threats endangering the financial and economic security, food and energy security, critical information infrastructure security & supply chains and environment security.

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(3) **Countering the traditional security threats-** Porous international borders, rising terrorism threats, escalating domestic insurgency (naxalism) and hostile neighbours like China and Pakistan, necessitate the need for a National Security Doctrine for India.

(4) **Impetus to military reforms and modernisation-** The security strategy will serve as a guidebook for military modernisation and theaterisation. Goldwater-Nichols Act 1986 in the US (US military reform), reform in the UK military, or the Chinese People's Liberation Army (PLA) 2015 reforms, have all been driven by their national security strategy.

(5) **Political Direction to the Armed Forces-** In the absence of a comprehensive security strategy of India, Raksha Mantri's operational Directive of 2009 is the only document providing political direction to the Armed Forces. This document has become out-dated and needs to be revised.

(6) **Clarity of roles for organisations created for National Security-** The security strategy will clarify the precise operational and advisory roles of national security related institutions like the National Security Council (NSC), the National Security Advisor (NSA), Chief of Defence Staff (CDS) and the Chiefs of Staff Committee.

(7) **Enhanced co-operation to counter the national security threats-** The security doctrine would help to maintain active cooperation between security establishments at the Union and state levels and would help in inter-ministerial coordination in tackling any threat to national security.

(8) **Enhanced accountability of the political Class-** National security strategy would enhance the political accountability in the management of defence forces and national security.

Read More- Chief of Defence staff

What are the Challenges in the implementation of the National Security strategy of India?

(1) **Diverse and ever-evolving National security threats-** Creating a doctrine that comprehensively addresses all the ever evolving security challenges like Cyberattacks, crypto-terrorism is a complex task.

(2) **Political Hesitation-** The political parties are reluctant to adopt the national security strategy on account of their increased accountability in the management of national security issues.

(2) **Formulation of consensus amongst all stakeholders-** Balancing the competing interests and ideologies of all stakeholders like the government officials, policymakers and security agencies is a significant challenge.

(3) **Lack of dedicated resources for implementation-** Efficient and effective allocation of resources for the implementation of this comprehensive security doctrine is also a significant challenge.

(4) **Lack of public awareness and support-** The lack of public awareness regarding the need for a comprehensive national security strategy, has let the governments run Scott free for these many years without enacting a comprehensive security doctrine.

What Should be the way forward in drafting the National security strategy document?

(1) Use of previous national security reports- Previous exercises undertaken to promote national security like the Kargil Review Committee report (2000), the Report of the Naresh Chandra Task Force on Security (2012) could serve as useful reference material for the National Security Strategy.

(2) **Adequate representation of eminent intellectuals-** The drafting committee must include eminent persons from different disciplines who can look at India's national security from multiple dimensions.

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(3) **National security strategy must be citizen-centric-** National security strategy must reflect the values and beliefs of the people & must raise public awareness and shape public perceptions about national security issues.

Conclusion

Drawing up a National Security Strategy of India must be a key agenda for the government. The security strategy document must take the Constitution of India as its guide and its objective should be safeguarding and consolidation of India's democracy.

Read More- The Indian Express
UPSC Syllabus- GS 3- Internal Security- Various Security Forces and Agencies and their Mandate

Net Neutrality- Explained Pointwise

Introduction

Net Neutrality debate has again returned back in India, with the TRAI inviting a comprehensive consultation on the possible mechanisms for regulation of Over-The-Top (OTT) services.

The OTT consultation has renewed the clamour from the telecom companies that content providing platforms/OTT platforms such as Netflix, Amazon Prime and Disney+ Hotstar must share the costs of their bandwidth. Similarly in November 2022, these major telecom companies demanded that platforms such as YouTube and WhatsApp must pay a share of their revenue to make up for the network costs.

However, these demands from the major telecom players to charge the OTT companies and big platforms like You tube and Whats App, sets a dangerous precedent that undermines the principle of net neutrality.

Arguments for and against the Demand of Telcos of charging the OTTs

Arguments in favour of Charging	Arguments against Charging
The telecom companies argue that streaming platforms are free riders, which benefit from the infrastructure built and maintained by telecom companies.	Telecom companies do not own the internet, rather they only provide access to it. OTT platforms generate demand for internet access. Telecom companies must charge the customers rather than the OTT platforms to recover their infrastructure costs.
OTT services are not subjected to the same level of taxation and licensing fees as the telecom companies, which has led to an uneven playing field.	The OTT and the Internet access are two distinct markets because services from one are not substitutable for services in the other. Hence the Telcos (internet access providers) should not look to cross-subsidise their costs by charging the OTT rather than their customers.

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Telecom companies revenue from traditional streams such as voice calls and Short Message Service (SMS) has come under pressure. The OTT services often provide free services. Ex- Whats app Voice calls.	The use of OTT services has led to a surge in data consumption, which is a growing revenue stream for telecom companies.

What is Net Neutrality and what has been India's position on it?

Net Neutrality- It is the principle that Internet service providers (ISP) and governments regulating the Internet, should treat all data on the Internet the same and should not discriminate or charge differentially.
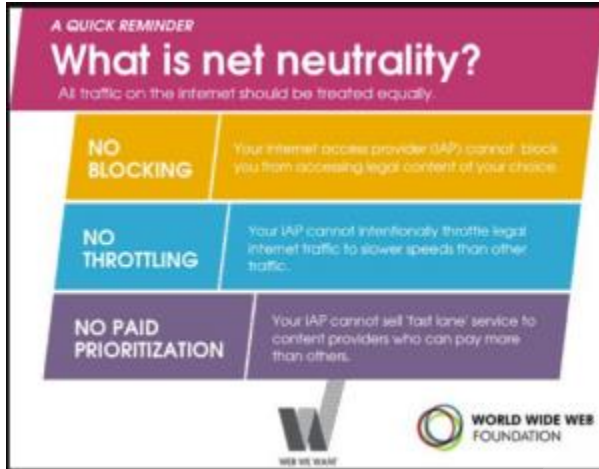
Who coined the term Net Neutrality- Columbia Law School professor Tim Wu coined the term in a 2003 paper titled "Network Neutrality, Broadband Discrimination." Wu proposed the concept to promote an even playing field on the Internet, ensuring that all data is treated equally without discrimination by Internet service providers (ISPs).

Figure 4. Source- World wide Web Foundation
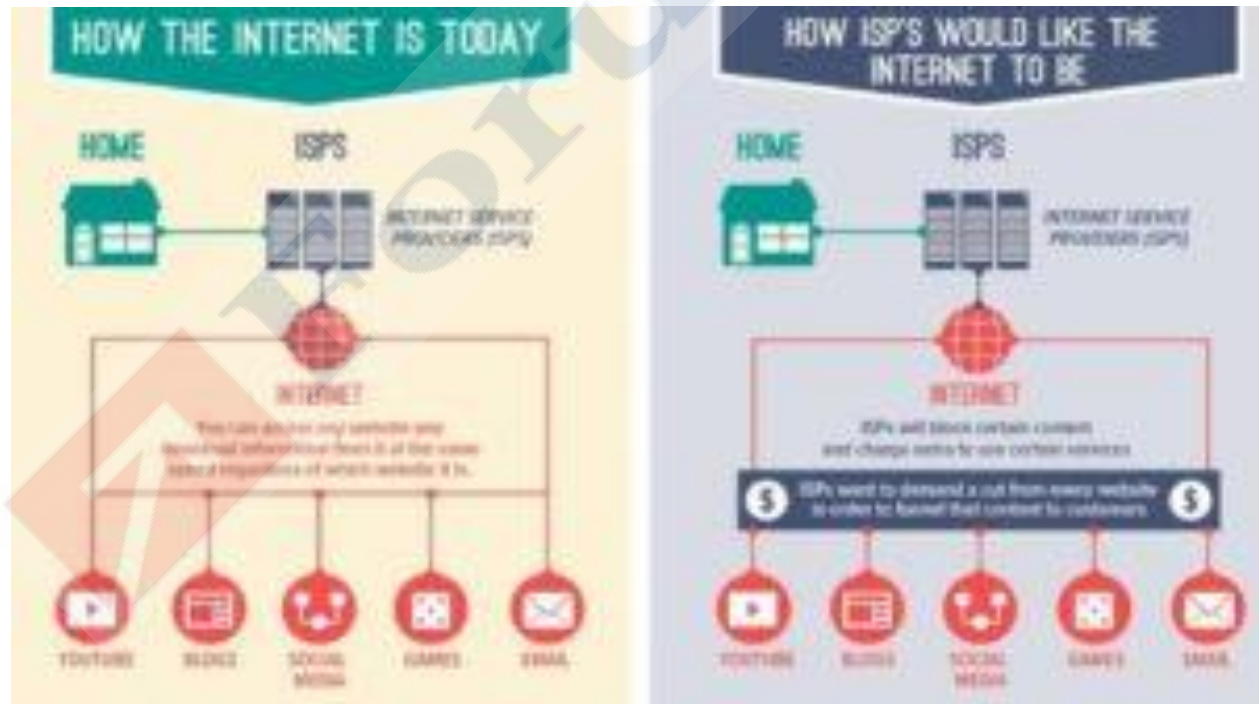
Source- Wikimedia Commons

Evolution and implementation of net neutrality principle in India

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There is no specific law which specifically governs the principle of net neutrality in India. However, TRAI has released various regulations/guidelines at different times ,which have in general have governed the breach of the principle.

2014	Telecom operator Bharti Airtel decided to charge its customers for the internet calls. These led to widespread protests and demands for net neutrality.
2015	Department of Telecommunication (DoT) constituted a six-member committee on Net Neutrality to recommend overall policy Regulations and Technical responses.
2016	TRAI released the Prohibition of Discriminatory Tariffs for Data Services Regulations. Under this regulation, all traffic on the internet needs to be treated equally. This regulation was invoked to ban Free Basics and Airtel Zero in India, which violated the principles of net Neutrality.
2018	Department of Telecommunications (DoT) released the Regulatory framework on Net Neutrality. Internet service providers (ISPs) were disallowed from indulging in any kind of discriminatory treatment of content, including practices like blocking specific websites or speeding/ slowing down of content.

Read More- TRAI Recommendations on Net Neutrality

What are the advantages of 'net-neutrality'?

Protection of Small Entrepreneurs- Net Neutrality is extremely important for small business owners and start-ups who can launch their businesses online, advertise the products and sell them openly, without any discrimination. Ex- Myntra could compete with Amazon in India due to Net Neutrality.

Boost to economic growth- It has enabled the growth and development of unicorn startups based on free and democratised internet. Ex- India has witnessed the growth of over 100 unicorn startups due to net-neutrality.

Employment Generation- Digital economy based on the principles of neutrality of internet has created employment opportunities in both formal sector (coders) and informal sectors (gig workers).

Increasing Internet Penetration- Affordable tariffs due to internet neutrality have enabled internet penetration including the rural areas. This has facilitated access to public services in rural areas. Ex- E-governance platforms adoption in rural India.

Low tariffs of internet increasing its affordability- Net neutrality principles have ensured that internet tariffs remain low due to increase in consumer base of customers. India has one of the largest internet user base in India.

Freedom of speech and expression- It has enabled everyone to access the internet and exercise their freedom of speech and expression (Art 19(1)) through multiple platforms like Twitter and Koo.

Equality of customers- The lack of neutrality of internet, would also mean that instead of free access, there could be "package plans" for consumers. For example, users may have to pay more to access international websites compared to websites based in their own country. This would create a tiered internet system where users who pay more get better access to content.

What are the Challenges with 'Net Neutrality'?

Decrease in Investment in internet infrastructure- Network Operators have to invest in maintaining and expanding the internet's infrastructure to support new internet services. However, most of the benefits are reaped by Internet content companies like Google, Facebook,Youtube etc. This has led to reduction in investment by network operators in internet infrastructure. Ex- Financial strain on Indian network operators like Vodafone-Idea.

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Less availability of free vital services- Opponents of internet neutrality contend that more vital services (like online healthcare) could be made accessible for free if the companies that draw excess bandwidth (e.g. the video streaming websites/OTTs) are charged extra for their heavy use.

Access to Objectionable Content- Offensive, dangerous, illicit and illegal content is accessible to everyone through net neutrality, and is difficult to filter out.

Burdensome Regulations- Net neutrality created burdensome and overreaching regulations to govern the internet e.g., Net Neutrality rules mandate extra reporting standards for ISPs to ensure compliance which adds to costs.

Net Neutrality not necessary for Tech Evolution- Critics of Net Neutrality argue that the internet developed amazingly well even in the absence of Net Neutrality e.g., most large internet companies including Google (1998), Facebook (2004), YouTube (2005) and Twitter (2006) were started and grew to success without any regulations.

What should be the way forward?

Telecom companies/Network operators to charge their customers- The network operators must charge their customers and not the internet content platforms. The increased internet data usage must be used by the telecom companies as one of their primary revenue streams.

Government intervention to help the telecom companies- The government must reduce spectrum fees and support the telecom companies through the Universal Service Obligation Fund (USOF).

Increased investment by telecom companies- Telecom companies must also make adequate investments to cater to the explosion of data traffic due to these OTT platforms.

Regulatory body to uphold Net Neutrality- The TRAI has recommended the establishment of a regulatory body to uphold Net Neutrality. This should be discussed with all stakeholders and taken forward.

Conclusion

It is imperative for all stakeholders, including policymakers, to recognise the long-term ramifications of acquiescing to the short-sighted demands of telecom companies. Upholding the principles of net neutrality is not merely about preserving the ethos of an open Internet but is also intrinsic to fostering a conducive environment for innovation, competition, and consumer welfare, especially countries such as India where the Internet is going to be the carrier of all Digital Public Infrastructure (DPI).

> **Read More-** The Hindu
> **UPSC Syllabus- GS II-** Government policies and interventions for development in various sectors and issues arising out of their design and implementation; **GS III-** Awareness in the field of IT

Deepfakes- Explained Pointwise

Introduction

Deepfakes are back in news, after a video of actor Rashmika Mandanna has recently gone viral on social media. Responding to the video, Rajeev Chandrasekhar, the Union Minister for Electronics & Technology, has said that deep fakes are the latest and a "more dangerous and damaging form of misinformation" that needs to be dealt with by social media platforms.

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Ministry of Electronics and Information Technology (Meity) has sent notices to "all social media intermediaries" like Facebook, Youtube and Instagram, reminding them that online impersonation is illegal under Section 66D of the Information Technology Act, 2000. The Ministry has warned these platforms to take down such content within 24 hours, a requirement which has been outlined in the IT Rules, 2021.

What are Deepfakes and the technology behind these deepfakes?

Deepfakes- Deepfakes are fake content in the form of videos, pictures and audio which are created using powerful artificial intelligence tools. The origin of the word "deepfake" can be traced back to 2017 when a Reddit user, with the username "deepfakes", posted explicit videos of celebrities.

Technology used behind these deepfakes-
(1) The technology involves modifying or creating images and videos using a machine learning technique called generative adversarial network (GAN). This AI-driven software detects and learns the subjects' movements and facial expressions from the source material and then duplicates these in another video or image.
(2) To ensure that the deepfake created is as close to real as possible, creators use a large database of source images. This is why more deepfake videos are created of public figures, celebrities and politicians.
(3) The dataset is then used by one software to create a fake video, while a second software is used to detect signs of forgery in it. Through the collaborative work of the two software, the fake video is rendered until the second software package can no longer detect the forgery. This is known as "unsupervised learning", when machine-language models teach themselves. The method makes it difficult for other software to identify deepfakes.

Figure 5. Source- VPNoverview.com

What are the challenges being posed by deepfakes?

(1) **Promotes 'Liar's Dividend'-** Liar's Dividend refers to the situation when an undesirable truth is dismissed as deepfake or fake news. Leaders weaponise deepfakes to replace an actual piece of media and truth. Ex- Donald Trump Deepfake videos. Deepfakes blur the line between reality and fake. People start dismissing reality as fake.

(2) **Erosion of trust in democratic processes like elections-** Doctored content, most likely in the form of a realistic fake video is presented as fact to alter public perception and create democratic deficit. For Ex- Capitol Hill violence, 2021 was incited by using deep fake media.

(3) **Crime against women-** The deepfakes are being used as a weapon to attack women dignity and chastity. According to AI company Deeptrace report, over 90% of the deepfake videos are pornographic in nature.

(4) **Fuelling Radicalisation and violence-** The non-state actors like ISIS and Al-Qaeda, use fake videos to stir anti-state sentiments among people. For Ex- Fake videos showing armed forces committing 'crimes in conflict areas'.

(5) **Rise in cyber crimes-** Cyber criminals are using deepfake technology to carry out phishing attacks, financial frauds and identity theft. Researchers have observed a 230% increase in deepfake usage by cybercriminals and scammers. For Ex- CEO of a U.K. energy company was tricked using deepfake audio to transfer €2,20,000 to fraudsters.

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(6) **Means of 'hybrid warfare' or 'grey zone tactics'-** Countries have been using the deepfakes to spread misinformation and for espionage. European Union has termed these deepfakes as 'Foreign Information manipulation Interference'. For Ex- China has been employing deepfakes of injured Indian Soldiers by the PLA Army.

(7) **Trust deficit in traditional media-** Even mainstream news sources often fall for the propagandist misinformation which enhances trust deficit in these media channels. For Ex- Morphed video of Zelensky asking his soldiers to surrender was widely played on main stream media.

However, as we know that technology is a double-edged sword, there are also some benefits associated with deepfake technology.

How can the Deepfakes be used for common good?

(1) **Use in the field of creative art and Entertainment-** The deepfake technology can be used to improve the dubbing on foreign language, films and resurrect dead actors. For ex- Samsung artificial intelligence lab in Moscow has brought Monalisa to life by using deep fake technology.

(2) **Voice restoration-** The technology has been used to restore the voices of patients suffering from amyotrophic lateral sclerosis. Various 'Voice cloning initiatives' have been launched.

(3) **Creating empathy for people of War torn regions-** Projects like the Deep empathy project of MIT and UNICEF has been increasing empathy for victims of a disaster region by creating AI-images of war-torn regions like Syria, Yemen.

What is the status of deepfakes regulation in India and across the world?

India	(1) India does not have specific laws or regulations that ban or regulate the use of deepfake technology. (2) **Sections 67 and 67A of the Information Technology Act (2000)** related to defamation and publishing explicit material is applied in cases of deepfakes. (3) **India's IT Rules, 2021** require that all content reported to be fake or produced using deep fake be taken down by intermediary platforms within 36 hours. (4) Section 500 of the Indian Penal Code (1860) also provides punishment for defamation.
US	The U.S. introduced the **bipartisan Deepfake Task Force Act** to assist the Department of Homeland Security (DHS) to counter deepfake technology.
EU	(1) European Union has updated **Code of Practice on Disinformation** that was introduced in 2018 to stop the spread of disinformation through deepfakes. (2) The EU has issued guidelines for the **creation of an independent network of fact-checkers** to help analyse the sources and processes of content creation
China	China has introduced **Comprehensive Regulation on Deep Synthesis** aimed at curbing disinformation.

What should be the way forward?

(1) **Responsibility of social media intermediaries-** Social media intermediaries have to develop technology to detect and report deepfakes on their sites like watermarking AI-generated content. For Ex- Microsoft's video authenticator is a new anti-deep fake technology to fight misinformation.

(2) **Blockchain-based Deepfake Verification-** The use of blockchain technology for media creation will allow the individuals to trace the origin and modification history of media. This will discourage the creation and dissemination of malicious deepfakes.

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(3) **Digital India Act-** The forthcoming Digital India Act must have penal provisions in case of malicious deepfakes. India must take lessons from China's comprehensive regulations on deepfakes.

(4) **Public awareness and responsibility-** Social awareness about the menace of malicious fake videos must be promoted. The public must be made aware of 'Pause, think and share' principle for social media.

(5) **Implementing the principles of Bletchley Declaration-** The declaration calls to address risks and responsibilities associated with frontier AI like deepfakes. India, which is amongst the signatories must take a lead in finalising the global AI regulatory framework, in accordance with the declaration principles.

Read More- Bletchley Declaration

> **Read More-** Indian Express 1, Indian Express 2
> **UPSC Syllabus- GS III-** Awareness in the fields of IT

Loss and Damage Fund- Explained Pointwise

Introduction

Loss and Damage Fund is in sharp focus due to the upcoming UNFCCC Conference of Parties (COP 28) to be held in the UAE. After tough negotiations at COP 27 in Egypt in 2022, it was agreed that Loss and Damage Fund (LDF) must be provided to nations vulnerable to or impacted by climate change consequences. COP 28 is expected to finalise and declare the rulebook on the structure of LDF.

However, India is of the opinion that the Loss and Damage Fund (LDF) should not be limited to small island and least developed nations only, rather it must also include developing nations like India. There are several disagreements over the modalities and operation of this fund, which has made the fund a contentious issue.

What is Loss and Damage Fund, and what is the history of genesis of its demand?

There are three pillars of dealing with climate change.

Mitigation	Adaptation	Loss and Damage
Mitigation measures refer to the actions which must be taken to limit climate change. For Ex- Cutting greenhouse gas emissions	Adaptation measures refer to the proactive actions taken by countries to cope with the changes induced by climate change. For Ex- Great Green Wall Initiative in the Sahel and West Africa to reduce global warming effect in Africa.	Loss and Damage refers to the irreversible consequences of climate change. It represents the climate change impact that can't be avoided or mitigated through adaptation efforts. Ex- Floods in Pakistan or risk of submergence of Maldives due to rising sea levels.

Loss and Damage Fund- The Loss and Damage Fund is to fund the poorer nations (Small Island Nations like Tonga, Fiji) that have made negligible contribution to climate change but are more vulnerable to extreme climate events.

Principle behind the Fund- The fund is based on the "polluters pay principle". Polluter Pay principle makes the polluter liable for paying the cost of remedial action and compensation for the victims of environmental damage caused by their actions. Thus, the rich and developed nations, which are majorly responsible for industrial emissions, must pay the poorer nations that have made negligible contribution to global warming.

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What is "loss and damage"?

The phrase refers to costs already being incurred from climate-fuelled weather extremes or impacts, like rising sea levels

■ Climate funding so far has focused on cutting CO2 emissions, while a third of it went towards helping communities adapt to future impacts

■ Loss and damage funding is expected to cover the cost of damage that countries cannot avoid or adapt to

■ A report by 55 vulnerable countries estimated that their combined climate-linked losses in the last two decades totalled

$525 billion, or 20% of their collective GDP. This could go upto $580 billion per year by 2030

■ Vulnerable countries and campaigners argue that rich countries that caused the bulk of climate change with their historical greenhouse gas emissions should pay

Source: Reuters

Source-The Hindu

Genesis of the LDF-

The movement of Loss and Damage Fund (LDF) is a three-decade old movement which was first initiated by the island nation of Vanuatu and the Alliance of Small Island States. The progress made at various UNFCCC Conference of Parties (COP) are as follows-

COP 19, 2013	At COP 19 in Warsaw, representatives of member countries formally agreed to establish the L&D fund.
COP 25, 2019	Santiago Network for L&D was set up, but the developed countries didn't commit any funds
COP 26, 2021	Glasgow Dialogue on finance for L&D was established to continue discussions over the next three years on the fund.
COP 27, 2022	At COP 27, the member states agreed to set up the L&D fund and a Transitional Committee (TC) to figure out how the new funding mechanisms under the fund would

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	operate. The TC was also to prepare recommendations that countries would consider, deliberate on, and potentially adopt by COP 28.

What are the Challenges with operationalisation of the Loss and Damage Fund?

The Transitional committee (TC) formed after COP 27, has been encountering several challenges to get the Loss and Damage Fund operationalised. The key issues are mentioned below-

(1) **Hosting of the fund at the World Bank-** The World Bank charges an exorbitant overhead fee for maintaining any fund with it. The developing countries want a dedicated funding mechanism and an independent secretariat.

(2) **Reluctance of Developed countries to contribute to the fund-** The developed nations, particularly the U.S., have remained non-committal about being primary donors to the fund.

(3) **Rejection of Common But Differentiated Responsibilities (CBDR) principle-** The developed countries have rejected references to the CBDR, equity, and liability in the fund's draft. This has watered down the spirit and intent of the L&D fund.
Read More– **Common But Differentiated Responsibilities**

(4) **No Commitment over the size of the Fund-** There has been no consensus over the size of the fund.

(5) **Assessment of Losses-** The true assessment of losses is a contentious issue, as it is difficult to ascertain how much of the damage is due to climate change and how much is due to governance failure. Ex- Estimation of loss due to Pakistan flood.

(6) **Inclusion of Developing Countries-** India also wants the inclusion of Developing countries in the fund (as discussed in the introduction of the article).

What are the implications of the impasse over the Loss and Damage Fund?

(1) **Threatens climate justice-** The impasse over the fund threatens climate justice and exacerbates the suffering of vulnerable communities in developing nations. These vulnerable communities have contributed minimally to global emissions, but today bear the maximum brunt of climate change.

(2) **Increase humanitarian crises-** The delay in implementation of the fund will increase humanitarian crises like food shortages, human displacement and conflict.

(3) **Worsen the environmental crises-** Without adequate L&D funds, there will also be limited capacity to address environmental degradation and the loss of vital ecosystems. This will further worsen environmental crises which are already causing irreversible harm to the earth.

(4) **Internal conflicts-** Conflicts and tensions emerge in vulnerable nations due to climate change, which can spill across borders. For Ex- Central American Caravan.

(5) **Increase of divide between the developed and developing nations-** This impasse has created a substantial divide between wealthy and impoverished nations with regard to climate reparations and their historical responsibilities of global warming.

(6) **Breakdown of diplomatic efforts-** This deadlock shows the failure of the international community to collectively address the contentious issue of climate change and other pressing global issues.

What are the advantages of Loss and Damage Fund?

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(1) **Holistic coverage of losses due to climate change-** Loss and Damage not only includes the economic losses but also the human casualties, and the degradation of ecosystems and cultural heritage. Hence, the fund will comprehensively cover all the losses due to climate change.

(2) **Ensures Climate Justice-** The fund ensures climate justice to the vulnerable communities of Small Island nations and least developing countries, who have paid the price without even polluting the environment.

(3) **Shift of Direction of climate finance-** Climate finance has till now focused only on mitigation and adaptation. Two-third of the finance has gone into climate change mitigation and one third has gone into adaptation. The LDF draws the focus of climate finance towards reparations for the loss and damage.

What Should be the Way forward?

1. **Sustenance of political commitment for LDF-** Sustained political pressure on the issue of LDF will yield fruitful results, similar to the Green Climate Fund.

2. **Windfall tax on oil and gas companies' profits-** The windfall tax on oil and gas companies profit's can be used to fund the Loss and Damage Fund.

3. **International insurance pool-** In the time being, till the developed countries do not commit to grants, the option of creating an international insurance pool to fund the loss and damage can be explored.

4. **Implementation of the "Global Shield Scheme against climate risks"-** The German-backed "Global Shield Scheme against climate risks" was also one of the outcomes of COP 27. The Shield is aimed at increasing pre-arranged finance to be disbursed before or just after disasters happen. Till the LDF is not operationalised, this scheme needs to be implemented vigorously.

Conclusion

The L&D fund was conceived as a critical component of global climate action. So to achieve climate justice, rich countries must deliver finance in line with what is fair and just to the Small Islands and Least Developing countries.

> **Read More-** The Hindu
> **UPSC Syllabus- GS III-** Conservation, Environmental Pollution and Degradation, Environmental Impact Assessment

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Artificial Rain by Cloud Seeding- Explained Pointwise

Introduction

Use of Cloud Seeding to induce artificial rain, is being explored as an option by the Delhi Government to combat the rising air pollution levels in Delhi. The government is holding a meeting with experts from IIT Kanpur to discuss the prospects of cloud seeding in Delhi. The comprehensive proposal from IIT Kanpur will be subsequently presented to the Supreme Court for review.

What is Cloud seeding, and how does it induce Artificial rain?

Cloud Seeding- Cloud seeding is a kind of weather modification technology to create artificial rain. It works only when there are enough pre-existing clouds in the atmosphere.

Process of cloud seeding for generating artificial rain

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1. The 'seeds' of rain like the iodides of silver or potassium, dry ice (solid carbon dioxide), or liquid propane are inserted into the Clouds. The seeds can be delivered by plane or simply by spraying from the ground.
2. These 'seeds' of rain provide a chemical 'nuclei' around which the condensation of water droplets is accelerated.
3. Rain happens when the condensed water droplets reach at a level when it can no longer be held around the nucleus.
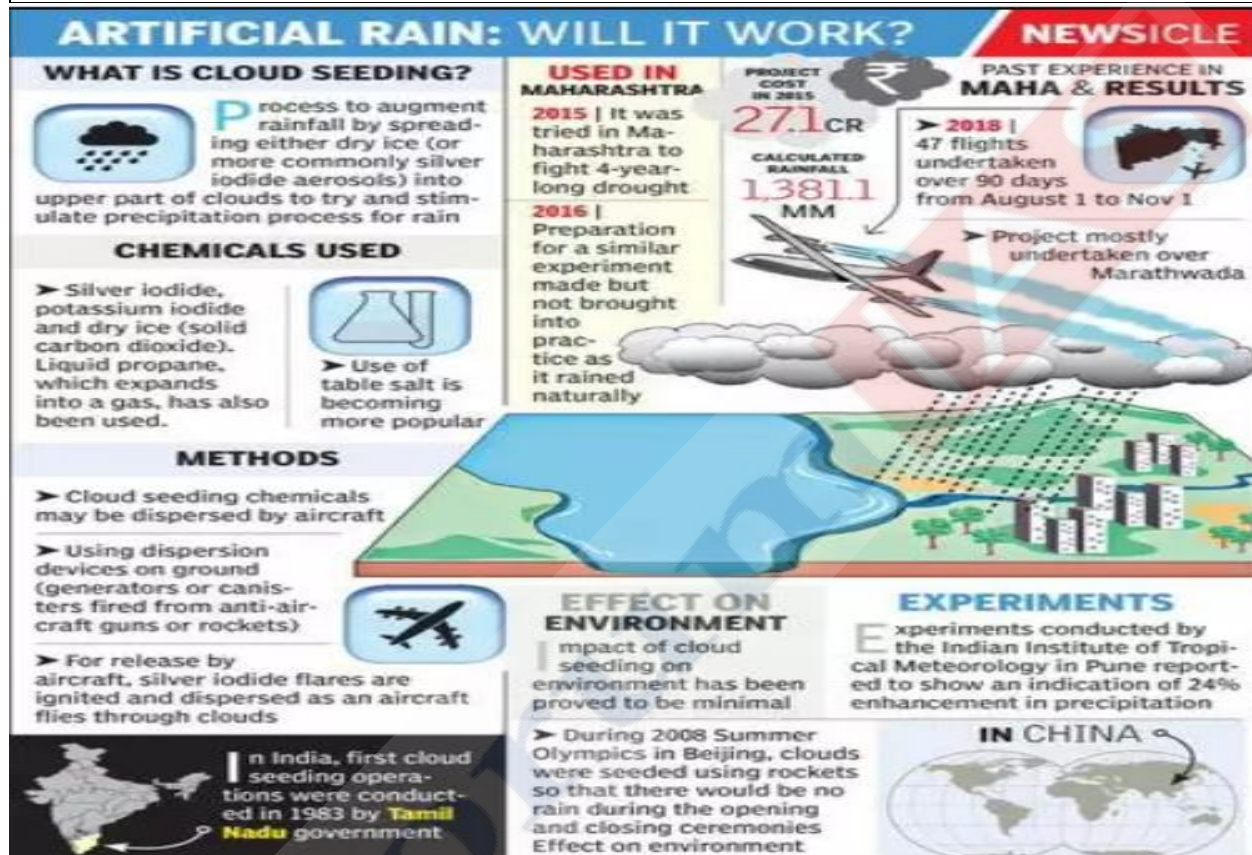

Figure 6. Source-The Times of India

Examples of Use of Cloud Seeding technique to generate artificial rain

1. **UAE-** The United Arab Emirates (UAE) has been using the cloud seeding to increase rainfall in their arid region.
2. **China-** China has been using the measure like the Beijing Olympics, 2008.
3. **India-** Cloud seeding was used in Solapur in Maharashtra, which led to an increase in about 18% of rainfall.

What are the advantages of artificial rain induced by cloud seeding?

1. **Reduction of air pollution levels-** Raindrops capture airborne particulate matter like PM 10 and pollutants like dust, smoke and chemicals. Thus, the pollutants are washed out from the atmosphere by this method. Ex- China employed this to clean Beijing's air during the Beijing Olympics, 2008.

2. **Controlling forest fires-** In regions prone to wildfires, cloud seeding is used to induce rainfall and help extinguish fires. This, prevents the release of smoke and pollutants into the atmosphere. Ex- Australian Bushfires.

3. **Agriculture-** Artificial rain benefit agriculture by providing much-needed moisture for crops, in drought-stricken areas. Ex- 'Project Varshadhari' in Karnataka in 2017.

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4. Power Generation- Cloud seeding experiments has helped to augment the production of hydroelectricity during the last 40 years in Tasmania, Australia.

5. Fog Dispersal, Hail Suppression, and Cyclone Modification- USA launched "Project Sky Water" in 1962 for weather modification through cloud seeding. The project aimed at fog dispersal, hail suppression, and cyclone modification.

Read More- **Explained: How successful is cloud seeding technology**

What are the challenges associated with the process of Cloud seeding?

1. Requirement of moisture-filled clouds- The requirement of clouds laden with a bare minimum moisture is required to start the process of cloud seeding. Ex- Delhi in winters lack moisture laden clouds, making artificial rains difficult to achieve.

2. Unintended Environmental Impacts- The chemicals used in the process like the silver iodide or potassium iodide carry the risk of bioaccumulation and potential toxicity. The use of dry ice (solid carbon dioxide) can further contribute to global warming.

3. Alteration with the natural weather pattern- Altering weather patterns in one region can affect weather patterns in neighbouring areas, potentially causing droughts or excessive rainfall in unintended places.

4. High cost- This method entails huge logistic costs as it involves release of expensive chemicals into the sky with help of flare shots or aircraft.

5. International Disputes- Weather systems do not adhere to political borders. Cloud seeding in one region can affect weather patterns in neighbouring countries, leading to potential diplomatic and international concerns.

6. Ethical and Legal Challenges- There are ethical concerns about artificially modifying weather patterns, as it may affect the natural balance of ecosystems and disrupt the environment. Legal issues related to liability and compensation for potential damages can also arise in future.

What Should be the way Forward?

Since the cloud seeding technology has several associated risks with it, we must be careful in hastily employing the technology for short term gains. Mentioned below are the ways to move forward-

1. Build Scientific consensus- The scientific community must debate on the effectiveness of the technology and build universal consensus on its efficacy. The long-term impact of cloud seeding on ecosystems like water resources, air quality and climate, must be thoroughly researched.

2. Evolve proper regulatory mechanism- Proper regulatory mechanism must be evolved to ensure accountability and transparency of these programs.

3. Address Public Concerns- The concerns of the public must be addressed before embarking on such ambitious programs.

Read More- The Indian Express

UPSC Syllabus- GS III- Conservation, Environmental Pollution and Degradation, Environmental Impact Assessment

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Ice Sheet Melting- Explained Pointwise

Introduction

According to a recent study, the melting of the ice sheet in Western Antarctica is unavoidable, no matter how much carbon emissions are cut. The ice sheet melting would result in global mean sea level rise of 5.3 metres or 17.4 feet. This would have a potentially devastating consequence for millions of people living in vulnerable coastal cities across the world, including in India.

What is Ice Sheet, ice shelf and sea ice?

Ice Sheet- An ice sheet is a mass of glacial ice. The ice sheet covers more than 50,000 square kilometres of land. There are two major ice sheets in the world today-Greenland ice sheet and Antarctica ice sheet. Together, they contain about two-thirds of all the freshwater on Earth.

Ice sheets are different from sea ice- Sea ice is created by freezing of sea water. Sea ice is free-floating ice that surrounds the polar regions. Ice sheet, on the other hand, is the large glacial ice mass. The outermost edge of the ice sheet, known as ice shelf, floats on the ocean. **The following diagram depicts the ice sheet, ice shelf and sea ice-**
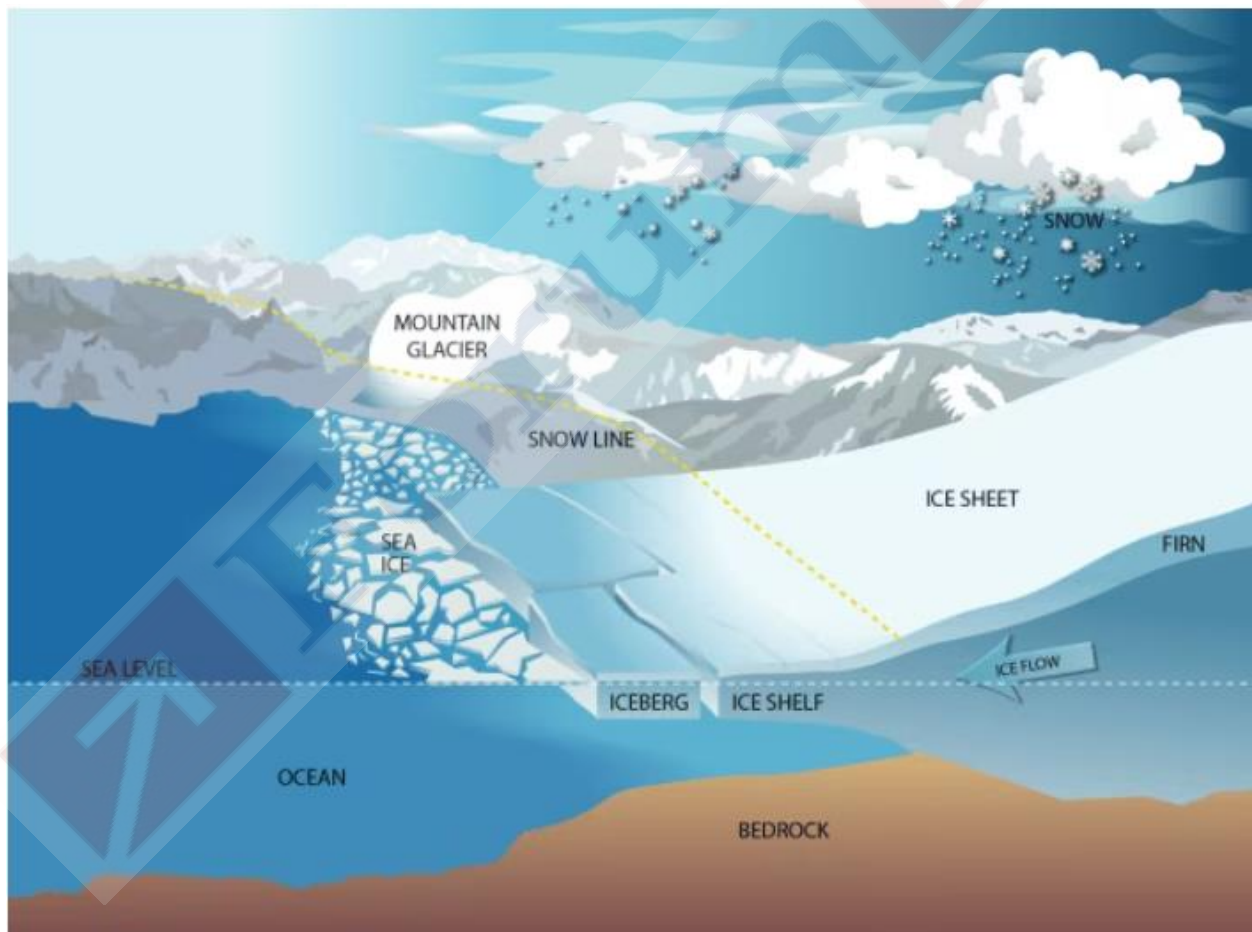
An illustration of most of Earth's ice features, including the ice sheet. Credit: NASA

Source-The Indian Express and NASA

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According to a report by the National Aeronautics and Space Administration (NASA)- When ice sheets gain mass, they contribute to a fall in global mean sea level, and when they lose mass, they contribute to a rise in global mean sea level.

What is the reason behind the Antarctic ice sheet melting?

1. **Erosion of the ice shelves by warming of the Amundsen sea-** Ice shelves stabilise the land-based glaciers just behind them. The Amundsen sea located in Western Antarctica has been continuously warming since the last century.
The warm ocean water has been eroding the ice shelves. As these ice shelves are getting eroded, the ice sheet melting behind them has accelerated. This has been releasing more ice into the ocean, consequently causing sea level rise.

Source: climate.nasa.gov

Antarctica ice mass variation since 2002. Credit: NASA

Source-The Indian Express

2. **Global Warming-**The Climate change which has resulted in increase of the global oceanic temperature has further accelerated the process of Antarctic ice loss.

Read More- Reasons behind Global Warming

What are the consequences of the ice sheet melting?

1. **Sea Level Rise-** The melting of Greenland and Antarctic ice sheets are the largest contributors of global sea level rise. According to WWF report- The Greenland ice sheet melting contributes to 20% of current sea level rise.

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2. **Increase in Coastal erosion and storms-** The rising sea levels lead to coastal erosion like receding beach area of Maldives. The warming of air and ocean temperatures, create more frequent and intense coastal storm surges like hurricanes and typhoons.

3. **Change in global oceanic circulation-** The ice sheet melting in Antarctic and Greenland is changing the oceanic circulation of the Atlantic Ocean like the weakening of Atlantic Meridional Overturning Current(AMOC).

Read More- Atlantic Meridional Overturning Current(AMOC)

4. **Effect on coastal wildlife-** With the melting of ice sheets, wildlife like walrus are losing their home and polar bears are spending more time on land. This has resulted in higher rates of conflict between people and bears.

5. **Increased vulnerability of Coastal Regions, including India-** Coastal communities face risk of displacement and becoming climate refugees as their lives and livelihoods get threatened due to sea level rise. For Ex- The collapse of fisheries in the Gulf of Maine.

Initiatives related to protection to Antarctic ice sheet
1. **Antarctic Treaty-** It has been signed to help safeguard the Antarctic environment and provide a framework for addressing the challenges arising from the threats of ice sheet melting.
2. **Convention on the Conservation of Antarctic Marine Living Resources-** To protect the wildlife and environmental resources of Antarctica.
3. **Research and monitoring stations-** India's research stations at Antarctica like Maitri and Bharati to observe the changes in Antarctic environment.

What should be the way forward to stop the melting and the sea level rise?

We have reached the point where some impacts of climate change can no longer be avoided, and substantial ice loss in West Antarctica is probably one of them. However, we must take the following measures to stop further melting of ice sheets.

1. **Strict adherence to the Antarctic Treaty and Paris Agreement-** We must strictly adhere to these treaties to preserve the continent's unique environment and ecosystems. This involves regulating human activities, waste management and minimizing the environmental footprint.

2. **Protect the loss of the East Antarctic Ice Sheet-** We must take adequate steps to stop further loss of ice sheets in other parts of Antarctic like the east Antarctic.

3. **Use of Geoengineering Techniques-** Geoengineering techniques like the solar radiation management must be applied to slow down the ice sheet melting.

Read More- The Indian Express
UPSC Syllabus- GS 1-geographical features and their location-changes in critical geographical features (including water-bodies and ice-caps) and in flora and fauna and the effects of such changes.
GS 3- Conservation, Environmental Pollution and Degradation, Environmental Impact Assessment

Insolvency and Bankruptcy Code- Explained Pointwise

Introduction

Recently, the Supreme Court gave its ruling on the Insolvency and Bankruptcy Code. SC in its ruling affirmed key provisions of the Insolvency and Bankruptcy Code, (IBC) 2016 and held that the procedure contemplated under the

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law has been "carefully calibrated". Various industrialists and promoters, including Anil Ambani, Venugopal Dhoot, Sanjay Singal and Kishore Biyani, were petitioners in the case

Brief snippet of the Case

Arguments of Petitions against IBC 2016	SC Judgement
(1) Sec 95 & Sec 96 of the IBC 2016 allows the lenders to initiate insolvency proceedings against personal guarantors and promoters, without giving them the opportunity to present their stand. (2) The petitioners argued that it was violative of the right to equality (Art 14) of the promoters/debtors and went against the principles of natural justice.	(1) SC in its judgement upheld the provisions of the Sec 95 & 96 of the IBC 2016. (2) SC held that the statute was not violative of Article 14 (equality and equal protection of law) of the Constitution.
(1) Sec 97, 99 & 100 of the IBC allowed for the appointment of a Resolution professional (RP). RPs submit the report to NCLT/DRT, which then decide to proceed for resolution/liquidation. The debtors are then called to submit their views. (2) The petitioners demanded that the procedure of the IBC must be changed. The Debtor must be given a chance to present his case before the appointment of RPs.	(1) SC held that the procedure contemplated under the IBC has been "carefully calibrated" by the parliament. (2) SC rejected the petitioner's plea to amend the procedure of the IBC to grant the corporate debtor a hearing before the appointment and report of the resolution professional.

What is Insolvency and Bankruptcy Code 2016?

The Insolvency and Bankruptcy Code was enacted in 2016, and it replaced all the existing laws with a uniform procedure to resolve insolvency and bankruptcy disputes. The code aimed to address the issue of Non-performing Assets (NPAs) and debt defaults.

Terminologies related to the Insolvency and Bankruptcy Code 2016

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Key Terminology

- **Insolvency**: It is a situation in which a debtor is unable to pay his/her debts.
- **Bankruptcy**: It is a legal proceeding involving a person or business that is unable to repay their outstanding debts.
- **Liquidation**: It is a process of bringing a business/company to an end. It involves distribution of company's assets among creditors and other claimants.
- **Haircut**: It refers to the reduction in the value of an asset. For example, if haircut is 80%, then 80% of credit owed to its creditors will not get recovered.
- **Moral Hazard**: It is a situation where an economic actor has an incentive to increase its exposure to risk because it does not bear the full costs of that risk.

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Source-Forum IAS

Aims and objectives of the Insolvency and Bankruptcy code

(1) Consolidation and amendment of all existing insolvency laws in India.

(2) Simplification and expedition of the Insolvency and Bankruptcy proceedings in India

(3) Protection of the interests of creditors and stakeholders in the company

(4) Reviving the company in a time bound manner

Institutional framework followed by the Insolvency and Bankruptcy code

The Code creates a new institutional framework. This framework facilitated a formal and time-bound insolvency resolution process and liquidation. The framework includes:

Insolvency Professionals	They will administer the resolution process. They also manage the assets of the debtor and provide information for creditors to assist them in decision-making.
Insolvency Professional Agencies	The insolvency professionals will be registered with insolvency professional agencies. The agencies would conduct examinations to certify the insolvency professionals and enforce a code of conduct for their performance.
Information utilities	They will keep a record of debts given by creditors along with details of repayments/ dishonour of debt.
Adjudicating authorities	They will give the approval to initiate the resolution process, appoint the insolvency professional, and approve the final decision of creditors.
National Company Law Tribunal(NCLT)	It is the adjudicating authority for companies and limited liability entities.
Debt Recovery Tribunal (DRT)	It is the adjudicating authority for individuals and partnership firms.
Insolvency and Bankruptcy Board of India (IBBI)	The Board will regulate insolvency professionals, insolvency professional agencies and information utilities set up under the Code.

Time period for insolvency resolution as mentioned in the code

The code aims to resolve insolvencies in a strict time-bound manner. The Insolvency and Bankruptcy Code 2016, initially set a 180-day deadline for concluding the resolution process, allowing a potential extension of 90 days. However, subsequent amendments to the IBC extended the overall timeline for completion to 330 days. This

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includes any extension or litigation period. But, in exceptional cases, the time limit can be extended even beyond 330 days.

Read More- **On Insolvency and Bankruptcy Code of India – Keep Your Promise**

What have been the positive outcomes of the IBC 2016?

(1) **Increase in the rate of recovery of the lenders/creditors-** Lok Adalat, Debt Recovery Tribunal and SARFAESI Act, which were the recovery mechanisms available to lenders before enactment of the IBC, had a low average recovery of 23%. However, under the new IBC regime, the recoveries have risen to 43%.

(2) **Shift of focus to 'Resolution' rather than 'liquidation'-** IBC process aims to put the financially ailing corporate entities on their feet through a rehabilitation process. The primary focus has shifted to 'saving rather than selling'.

(3) **Shift from 'debtor-in-possession' to 'creditor-in-control'-** The creditor-in-control model hands control of the debtor to its creditors and relies upon the managerial skills of a newly appointed management to take over an ailing company and ensure business continuance.

(4) **Improvement in India's global rankings in resolving insolvency-** An IMF-World Bank study in January 2018 observed that India is moving towards a new state-of-the-art bankruptcy regime. Since enactment of the Insolvency and Bankruptcy Code, India significantly improved its 'Resolving Insolvency' ranking to 108 in 2019 from 134 in 2014 , where it remained stagnant for several years. India won the Global Restructuring Review award for the most improved jurisdiction in 2018.

(5) **Stability of Indian financial systems-** The SC in Swiss Ribbons Vs Union of India, has held that the core objective of the Insolvency and Bankruptcy Code, is to ensure revival and continuation of the corporate debtor. Insolvency and Bankruptcy Code is playing a larger role of public-welfare by ensuring the stability of Indian financial systems.

What are the Challenges associated with the Insolvency and Bankruptcy Code 2016?

(1) **Delays in the resolution process-** Resolution and liquidation cases have been taking longer than the mandated time of 330 days. For example- In cases of over Rs 1,000 Crore, the average resolution time has risen to 772 days in FY2022 from 274 days in FY2018.

Source- The Hindu. Shows the time taken for resolution processes to get completed

(2) **Greater liquidation than resolution-** The objective of Insolvency and Bankruptcy Code, was to promote resolution, but it has ironically resulted in more liquidation. This hinders the economic potential of the country. A/c to IBBI, the number of cases seeing liquidation are three times more than that of resolution.

(3) **Big Haircuts-** Longer delays in the IBC process, has resulted in larger haircuts, as the value of sick companies tends to diminish at an increasing pace over time. For instance- The lenders took a haircut of 83% in Alok Industries case, 90% Reliance Infratel case and 96% in the recent Videocon Group case.

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(4) **Infrastructural Issues and Resource Deficit-** Out of the 25 NCLT benches establlished across the country, most of these NCLT benches remain non-operational or partly operational, on account of lack of proper infrastructure or adequate support staff.

(5) **Fear of Vigilance inquires in case of govt lending institutions-** The public sector banks fear risk-taking in a resolution process, as low rate of dues recovery in the short term, may subject them to vigilance inquiries and audits. Hence, these public lending institutions focus more on liquidation and safe exit.

(6) **Exclusion of promoters from the resolution process-** There are many cases, where a loan default occur for reasons beyond the control of the promoters. However, IBC has strictly excluded the promoters from the resolution and liquidation process, despite the promoters not being wilful defaulters.

(7) **No focus on mediation, settlement and arbitration under IBC-** Globally, a mechanism like the IBC's corporate insolvency resolution process (CIRP) is used as a last-resort measure after all other alternatives like mediation, settlement and arbitration have been exhausted. However in India, there are no specific provisions for mediation under the IBC.

What should be the way forward to address the challenges under the IBC 2016?

(1) **Address the resource and infrastructure deficit in NCLT-** The NCLT benches must be filled with competent financial professionals, who must use the Insolvency and Bankruptcy Code's platform as a resolution tool instead of recovery tool.

(2) **Promotion of Alternative Dispute Redressal(ADR) Mechanism-** The ADR mechanisms like mediation, arbitration and settlement must be explored first. The insolvency proceedings must be used as a last resort. The Mediation Act 2023 and the Arbitration Act 2021 are steps in the right direction.

(3) **Protecting the public sector bankers in case of bona-fide resolution decision-** 'Business judgement' rule that protects the board of directors in many countries for bona-fide decision making must be introduced for public sector banks officials in India.

(4) **Allowing the defaulters who are not wilful ones to bid at NCLT-** The defaulters who are not wilful defaulters and who have no hand in failure of their business should be allowed to take part in the resolution and the liquidation process. For ex- many businesses failed due to COVID.

(5) **Proper use of National Asset Reconstruction comapny-** The NARCL established by the government must be used in resolutions of companies which do not attract many strategic investors. Proper use of NARCL will help in increasing the resolutions and reduce the liquidations.

Above all on average IBC has promoted faster recoveries and resolutions as compared to the earlier timeline of five years, six years or more. However, there are some challenges that need to be addressed to resolve corporate distress. Some futher amendments like extending the pre-packaged insolvency resolution process that was introduced for MSMEs,need to be extended to other firms.

Read More- Live mint
UPSC Syllabus- GS2- polity- Government Policies and Interventions for Development in various sectors and Issues arising out of their Design and Implementation.
GS 3- Indian Economy and issues relating to Planning, Mobilization of Resources, Growth, Development and Employment.

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Digital Public Infrastructure- Explained Pointwise

Introduction

Digital Public Infrastructure (DPI) has been India's most powerful tool, in its endeavour to give social protection to every Indian. India in its G20 presidency showed the world that, Digital Public Infrastructure (DPI) will be an important part of the international development architecture of the future. India highlighted its unique DPI initiatives, such as digital ID (Aadhaar) and Unified payment infrastructure (UPI), in the meetings of G20 Digital Economy Working Group (DEWG).

What is Digital Public Infrastructure (DPI)?

Digital Public Infrastructure- DPI is a set of "shared digital systems" used to drive development, inclusion, innovation, trust, competition, respect for human rights and fundamental freedoms. (Definition of DPI adopted by the G-20 Framework for Systems of Digital Public Infrastructure)
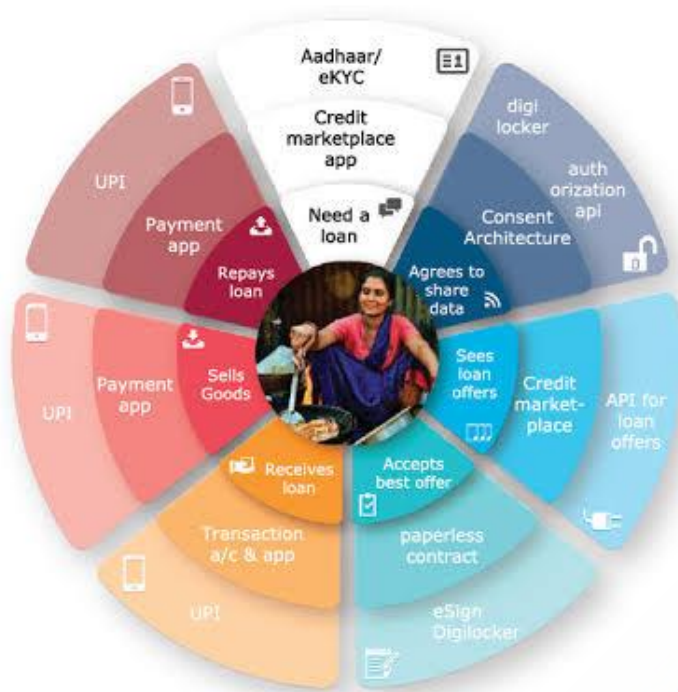
The concept of Digital Public Infrastructure is not new- Though the term Digital public infrastructure is relatively new, the concept is an old one.
1. The internet, powered by common protocols like HTTP, HTML and SMTP, is a prime example of DPI.
2. Telecom, with standards like GSM, SMS, CDMA and IEEE 802.11, is another example of DPI.

Three Pillars of DPI- DPI has 3 broad objectives- identity, payments and data management. India, through its India Stack Platform, has become the first country to develop all the three foundational pillars of DPI.

DPI objective	DPI Pillar	India's DPI pillars name
Identity	Digital ID System	Aadhar
Payment	Real-time fast payment system	UPI
Data Management	Consent-based data sharing system	Data Empowerment Protection Architecture (DEPA)

Example of Use of DPI architecture in Finance

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Source-ORF

Use of DPI Architecture in Government Initiatives

Digital India	The Digital India initiative includes projects such as Digital Locker, e-sign framework and National Scholarship Portal.
BharatNet	BharatNet is a high-speed broadband network project aimed at providing affordable internet connectivity to rural areas in India.
National Health Stack	National Health Stack is a digital infrastructure for the healthcare sector in India. It aims to provide a common platform for health data exchange and interoperability.
National Knowledge Network (NKN)	The National Knowledge Network enables the sharing of knowledge and resources, facilitating collaborative research and innovation.
UMANG (Unified Mobile Application for New-age Governance)	It is a mobile app launched by the Indian government that provides access to various government services and schemes.
Government e-Marketplace (GeM)	It has online platform that enables government departments and agencies to procure goods and services from registered vendors.
India's Modular Open Source Identity Platform (MOSIP)	It helps governments and other user organisations implement a digital, foundational identity system in a cost-effective way. Nations can use MOSIP freely to build their own identity systems.

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What has been the advantage of use of Digital Public Infrastructure in India?

1. Address the huge digital divide- According to NFHS Report, only 57.1% of the male population and 33.3% of the female population have ever used the internet. DPI in India has helped to create a digital ecosystem that is accessible, efficient, transparent and empowered citizens to participate in the digital economy.

2. Social security cover to vulnerable sections- DPI has allowed to the government to extend social security coverage of the vulnerable sections. For Ex- According to The World Bank Group's G2Px initiative report, linkage of a financial account with an ID or phone number helped the government to roll out cash assistance more quickly during COVID-19.

3. Digital Financial Inclusion- Digital Public Infrastructure has helped to expand financial access to unbanked populations in India. For example- the use of mobile wallets and digital payment platforms.

4. Increase in Access- Digital Public Infrastructure has helped to improve access to services for people living in remote areas. For example-Digital learning platforms have helped students in rural areas with access to quality education.

5. Improved Efficiency, transparency and better service quality- Digital Public Infrastructure has helped to streamline and automate processes & reduced the time and effort required to access services. For example- Use of online portals for government services like passport application and income tax filing.

What are the challenges associated with Digital Public Infrastructure in India?

1. Rise in Cyberattacks- Digital Public Infrastructure has been vulnerable to cyber-attacks which has led to financial losses. For example- According to State of Application Security Report, there has been Increase in hacking attacks on online payment gateways and digital wallets in India.

2. Data leaks- Digital Public Infrastructure has raised concerned about data privacy as there has been increased instances of data leaks and thefts. For example- ICMR data leak.

3. Interoperability challenges- There is a lack of interoperability among different digital platforms and systems in India, making it difficult for users to access services seamlessly. For example- Interoperability issues in Indian e-Wallets.

4. Digital Divide and Digital illiteracy- There is a significant digital divide in India, with many people lacking access to digital infrastructure such as smartphones and internet connectivity. For example- According to India Inequality report 2022, only 31 percent of the rural population uses the Internet compared to 67 percent of their urban counterparts

> **Read more-** As UPI crosses 10 billion transactions-mark, a look at India's key foreign policy sell: Digital public infrastructure

What should be done to improve India's Digital Public Infrastructure further?

1. Development of a robust cybersecurity framework- We must develop a robust cybersecurity framework to ensure the safety of digital assets by leveraging emerging technologies, such as blockchain, artificial intelligence and quantum technology. Ex- Quantum key distribution (QKD).

2. Improved internet connectivity and digital literacy promotion- We must increase internet connectivity speed, expand broadband infrastructure and ensure the availability of affordable internet services in rural areas. We must also promote digital literacy among the general population through training programs and awareness campaigns. Ex- Early completion of Bharat net program to connect the gram panchayats.

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3. Enhanced Collaboration between countries- India must collaborate with Brazil, Norway and other countries which are part of Digital Public Goods Alliance (DPGA). It is necessary for taking strategic decisions related to choice, data portability, interoperability. A new model for digital cooperation needs to be evolved.

4. Regulatory regime to avoid monopolisation and digital colonisation: India needs a strong digital infrastructure and legal framework to benefit from the digital world and prevent digital colonisation. Ex- Data localisation

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Sources: The Hindu, The Business Standard

Syllabus: GS 2: Governance – e-governance applications, models, successes, limitations, and potential & GS 3: Economic development – Inclusive growth and issues arising from it.

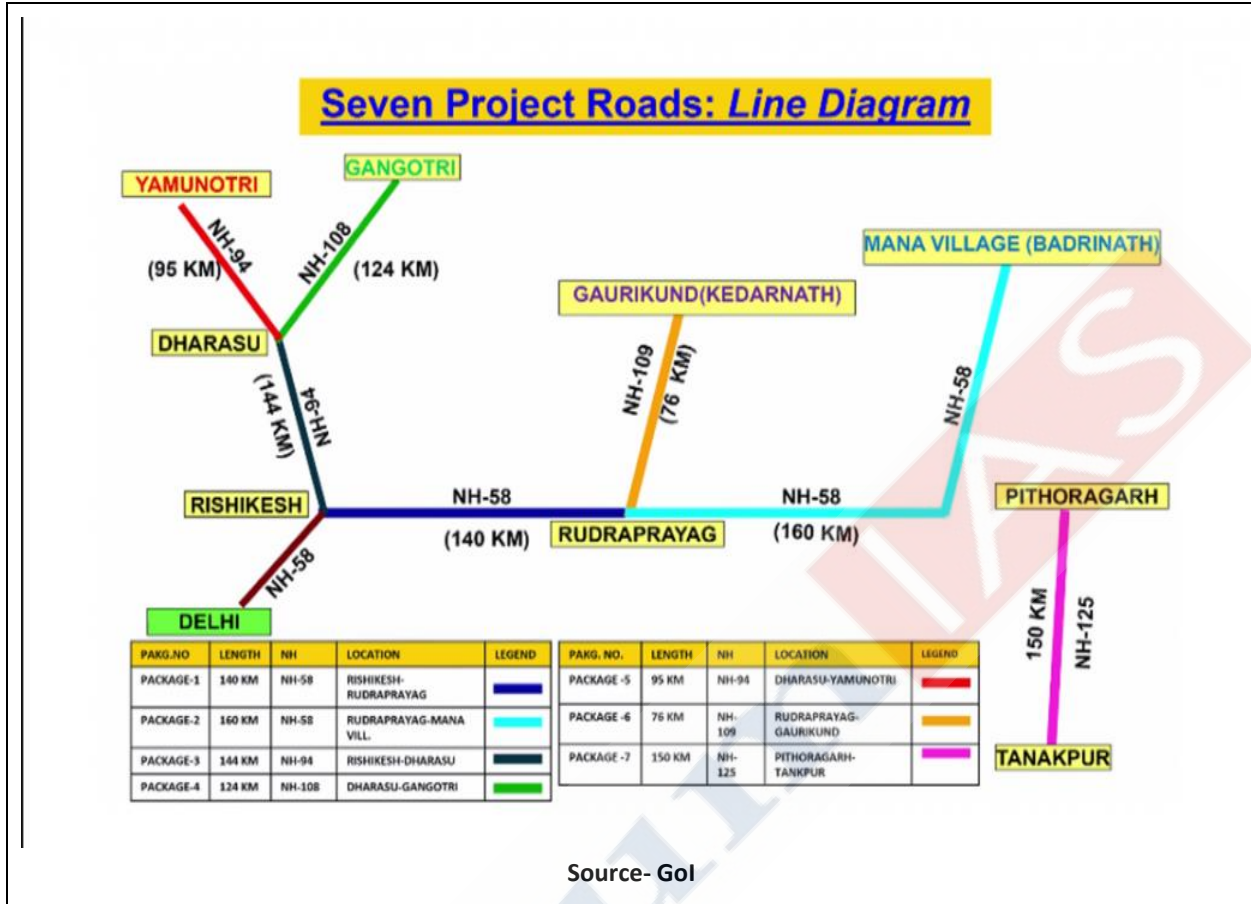## Uttarakhand Tunnel Collapse- Explained Pointwise

Introduction

Recently, Uttarakhand Tunnel Collapse has led to the trapping of 40 workers inside the tunnel. The under-construction tunnel also known as Silkyara Tunnel, is located on the Yamunotri National Highway in Uttarakhand's Uttarkashi district. The tunnel is a part of the Char-Dham all-weather road project. A mega search and rescue operation led by the NDRF and SDRF teams is underway to safely evacuate the trapped workers.

The need for tunnels has increased in recent times with the push for infrastructure development in the hilly terrains (For ex- Arunachal Pradesh infrastructure development). The tunnels also help in bolstering national security by connecting the border areas with the ammunition and military bases (For Ex- Char Dham project in Uttarakhand). Tunnels also reduce the logistic cost of transportation of goods.(For ex- Himachal Pradesh's improved rankings in logistics performance index)

What is the Char-Dham project, which has come into focus with the recent Uttarakhand Tunnel Collapse?

Char-Dham Project- It is a highway expansion project to widen 889 km of hill roads to provide all-weather connectivity in the Char Dham circuit. The project, envisaged in 2016, covers Uttarakhand's four major shrines- Badrinath, Kedarnath, Gangotri and Yamunotri- in the upper Himalayas.

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Source- GoI

About the Silkyara Tunnel (Uttarakhand's Tunnel which collapsed)-

1. The total length of the tunnel of the tunnel is 4.5 Km. It is meant to connect Silkyara to Dandal-gaon in Uttarkashi district.

2. The double-lane tunnel is one of the longest tunnels under the Char Dham all-weather road project and aims to reduce the journey from Uttarkashi to Yamunotri Dham by 26 kilometres.
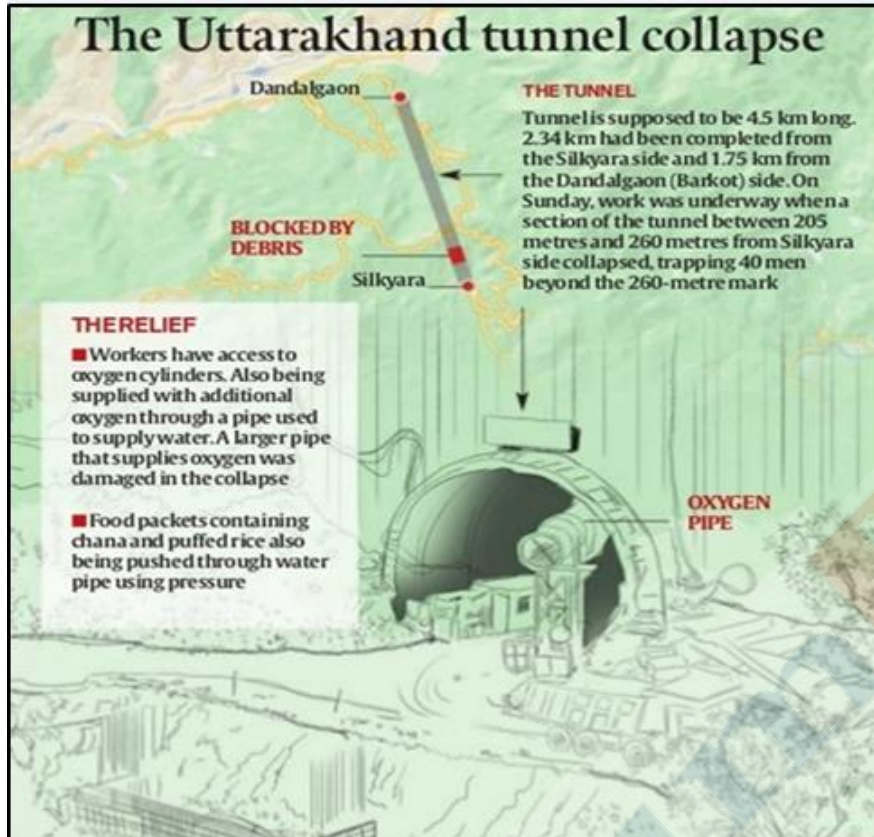
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Figure 7.Source- The Indian Express

Collapse Site- The collapse happened about 270m from the entrance of the Silkyara side.

Recent Incidents of Collapse in Himalayas

1. **Subansiri Lower Hydroelectric Power Project**- A major landslide disrupted construction and blocked diversion tunnels of the project.
2. **Teesta River Flash Floods-** Flash floods damaged the Chungthang Dam and Teesta hydropower stations, leading to significant financial losses.

Other Incidents of Tunnel Collapse in Himalayas

1. **Kiratpur- Nerchowk Tunnel collapse in Himachal Pradesh, 2015**
2. **Tehri Hydropoject Tunnel Collapse 2004**

What are the methods of Tunnel Excavation used in India?

In India, two methods of Tunnel Excavation are employed-the drill and blast method (DBM), and tunnel-boring machines (TBMs).

Techniques	Method of Excavation	Use and Advantages
Tunnel-boring machines (TBMs)	TBMs bore the rock from the front using a rotating head. The portion of the excavated tunnel is supported by installing precast concrete segments.	TBMs are used when the rock cover is up to 400 metres tall. TBM method was used for construction of tunnels for the Delhi Metro.
Drill and Blast Method (DBM)	DBM involves drilling holes into the rock and loading them with explosives. When the explosives are detonated, the rock breaks apart.	DBM method is used for mountains which are 1000-1200m high. DBM is used for tunnel construction in the Himalayas, Jammu & Kashmir and Uttarakhand.

TBM method is much safer but expensive, when compared with the DBM method.

What are the possible causes of Uttarakhand Tunnel Collapse?

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The Uttarakhand Govt. has formed a committee to determine the exact cause of the Uttarakhand Tunnel Collapse. However, experts have pointed out several reasons which might have led to the accident.

1. **Presence of fractured or fragile rock-** Fractured rocks have a lot of joints, which makes it weak to sustain large overhead weight. This could have led to the collapse of the Tunnel.

2. **Water Seepage-** Water erodes loose rock particles over time, creating a void on the top of the tunnel. This might have also led to the caving of the Tunnel.

3. **Landslide prone young Himalayan Rock System-** The Main Central Thrust (MCT)/Barkot thrust of the Himalayas passes a few kilometres north and northwest of the incident site. The seismic wave generated could have triggered a possible landslide in the tunnel.

4. **Lack of geological and Geo-technical Studies-** Experts have expressed doubts whether geological and geotechnical studies like petrographic analysis, seismic refraction waves analysis, were conducted before undertaking the tunnel excavation work. These experiments help to determine help to determine, whether the rock can take the load of the overburden when a tunnel is created.

5. **Improper study of Shear Zone and lack of protection measures-** Experts have also pointed that one of the reasons of collapse could be the lack of proper geological mapping studies of the shear zone. There was also failure to take protection measures to prevent the collapse of the shear zone using steel ribs, rock bolts, or shotcrete due to lack of regular monitoring.

6. **Failure to design an escape tunnel-** The authorities failed to ensure that an escape tunnel is designed simultaneously with the main tunnel. Design and construction of an escape tunnel is a must for emergencies like collapse and fire. Also, the escape tunnel helps in determining the geology of the main tunnel. For ex- The escape tunnel was constructed in the case of 9 km Chenani-Nashri tunnel in Jammu and Kashmir.

Besides these reasons given by experts, questions have been raised on the fragility of the Himalayas in sustaining massive infrastructure projects like the Char-Dham project, massive hydroelectric power projects.

Read More- Fragility of Himalayan ecosytem

What are the initiatives taken for ensuring safe tunnel construction mechanism in India?

1. **Creation of Tunnel Zone department in the MoRTH-** A tunnel zone department has been created in the Ministry with a mandate to build the capacity for excellence in tunnelling, preparation of guideline on design and construction of tunnel.

2. **Constitution of Expert Committee on Tunnel-** This expert committee has been created for resolving technical issues which arise in implementation of Tunnel Projects in the country.

3. **Indian Standard Code for Tunnel Construction-** The Indian Standard Codes-IS 15026 (2002) and IS 4756 (1978) have been issued for tunnel Construction. This code prescribes the guidelines for tunnel design, lighting and ventilation.

4. **IRC Codes for Tunnels-** IRC code 2019 for tunnels is being implemented to ensure the road tunnels which are constructed, are as per the international standards.

5. **Implementation of other standard codes in tunnel construction-** Integrated Tunnel Control Systems (ITCS), The Work in Compressed Air Regulations 1996, Emergency Evacuation and Rescue Plans for tunnels & RDSO (Research Designs and Standards Organisation) guidelines must be properly implemented.

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6. International Tunnelling and Underground Space Association safety practices in tunnel construction- According to these guidelines on the safety practices in tunnel construction, particular attention should be given to the means of escape in an emergency situation like specific escape routes marked by signs and contingency plan.

What should be the way forward to ensure safe tunnel construction?

1. **Detailed geotechnical studies-** Currently, in India the design and construction of a tunnel project is done simultaneously. More detailed geotechnical studies like the petrographic analysis, needs to be done to incorporate in the design and the construction of the tunnel project.

2. **Regular monitoring by specialist geologist-** Regular site visits of an independent specialist geologist must be conducted to check for probable failures and to determine the rock's stand-up time. (Rock-stand up time- It is the duration for which a rock can remain stable without any support. Support is given to the rock within its stand-up time.)

3. **Supports provided to the tunnel must be tested for adequacy-** Supports of the tunnel like shotcrete (sprayed concrete that works as a membrane to prevent parts of the rock from falling), rock bolt (a long anchor bolt for stabilising rock excavations), steel ribs and tunnel pipe umbrella need to be properly tested for its adequacy to prevent tunnel collapse.

4. **Arrangements for safe evacuation in case of collapse-** There must be deployment of NDRF personnel & proper safety equipments to ensure safe evacuation in case of any mishap. The construction companies must submit a safety plan along with the bid for the projects.

Conclusion

Tunnel-building technology is around 200 years old and, if executed properly, tunnels aren't dangerous.

> Read More- The Indian Express
> UPSC Syllabus- GS Paper 3 Disaster and Disaster Management

State Funding of Election- Explained Pointwise

Introduction

State funding of election can address the issue of 'Lack of Transparency in election funding'. The Lack of transparency in election funding is the central issue, on which the electoral bond scheme of the Government of India has been challenged.

> Read More- Electoral Bonds Scheme-Explained Pointwise

What is state funding of Elections?

State Funding of elections- It is an election funding mechanism, where the government gives funds to political parties or candidates for contesting elections.

Committees formed for state funding of elections and their recommendations

Committees	Recommendations

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Indrajit Gupta Committee on State Funding of Elections (1998)	Recommended partial state funding, considering the economic situation of the country at that time. But placed two conditions– 1. Only national and regional parties with symbol. Excluded the independent candidates. 2. Funding should be in the form of kind (certain facilities) and not in cash.
Law Commission Report on Electoral Law Reform (1999)	State funding of elections is "desirable" as long as political parties are not allowed to accept money from other sources. Concurred with the Indrajit Gupta Committee's recommendation of 'partial state funding'. Recommended setting up of a strong regulatory procedure.
Second Administrative Reforms Commission (2008)	Recommended partial state funding for the purpose of reducing "illegitimate and unnecessary funding" of elections expenses.
National Commission to Review the Working of the Constitution, 2001	It did not endorse state funding but concurred with the 1999 Law Commission report that the appropriate framework for regulation of political parties would need to be implemented before state funding is considered.

What is the need for State Funding of Election?

1. **Lack of Transparency in electoral funding-** Large proportion of electoral funding comes from unknown sources. The electoral bonds, also, do not disclose the donors details to the public. This violates the basic transparency principles, as the electorate has a right to know whether the funds are being raised through legitimate means.

Sources of Income of National and Regional Parties for FY 2020-21				
Political Parties	**Income from Unknown Sources (as per IT Returns) ****	**Income from Known Sources (donations details declared to ECI)**	**Income from Other Known Sources***	**Total Income**
National Parties	426.742	593.748	353.293	Rs 1373.783 cr
Percentage share	31.06%	43.22%	25.72%	100%
Regional Parties	263.928	119.395	147.38	Rs 530.703 cr
Percentage share	49.73%	22.50%	27.77%	100%
Grand Total	690.67	713.143	500.673	Rs 1904.486 cr
Percentage share	36.30%	37.40%	26.30%	100%

Source-ADR

2. **Corruption and Crony capitalism-** The current system of funding by 'unknown donors' which include large corporate houses has led to corporate lobbying, crony capitalism and has institutionalised political corruption.

3. **Lack of Fairness-** Supreme court, in Kanwar Lal Gupta v Amar Nath Chawla case, observed that access to large financial resources translates into electoral advantage. Richer candidates and parties have a greater chance of winning elections, which distorts the level playing field.

4. **Contravention of Laws and guidelines-** The non-disclosure of sources of electoral funding goes against the ECI guidelines, Central Information Commission's (CIC) rulings and SC's ruling in the PUCL vs Union of India case. The political parties have refused to submit themselves to the transparency that comes with Right to Information.

What will be the advantages of State Funding of Election?

1. **Transparency in electoral funding-** The state funding of elections fulfils the citizen's right to know about the election funding and expenditure. This enhances the transparency of the electoral process.

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2. **Fairness of the electoral process-** The state sponsored elections will ensure all political parties and candidates are at equal footing. This will ensure fairness of the electoral process.

3. **Reduction in criminalisation of Politics-** According to Vohra committee, the criminalisation of politics has been a result of the donation of criminal proceeds to political parties. The state funding of elections to political parties will reduce the criminalisation of politics.

4. **Encourage citizen centric decisions-** The funding of elections by the state will break the corporate-political nexus. It will encourage the government of the day to take citizen-centric decisions and ensure good governance.

5. **Increased accountability-** Use of public money will make the political parties more accountable to the public, as it will improve the party-public relations and break the politico-corporate nexus.

What are the challenges in the implementation of state funding of election?

1. **Fiscal Challenge-** The government is grappling with the rising fiscal deficit. Putting further strain on the government exchequer, by state sponsored electoral funding, will worsen the fiscal health of the government. State funded election will pose a serious challenge to our FRBM targets.

2. **Funds Diversion-** The funding of elections by the state will lead to diversion of government funds from social sector which need immediate attention like Health, Education and Skill Development. Funds being diverted to finance elections will hinder state welfare programs and the development of the weaker sections.

3. **Operational challenges-** Building a concensus on, the criteria to be used for distribution of the funds amongst political parties and candidates, will be a huge operational challenge.

4. **Risk of Misuse of state sponsored electoral funding-** State funds for elections can be misused as many frivolous political parties may crop up to receive state subsidies, rather than running for political office and engage in development work.

5. **Regulatory hurdles-** ECI has opposed state funding of elections on the ground that it would not be able to prohibit or check candidates' expenditure, over and above which is provided for by the state.

6. **Limited benefits due to lack of intra-party democracy-** The benefits of state funding of election will be limited due to lack of intra-party democracy.

7. **Can promote extremism in elections-** According to a study, the state funding of election using 'democracy vouchers' method tried in Seattle resulted in election of more extremist candidates. (**Democracy voucher method-** Under this system, the government distributes a certain number of vouchers worth a certain amount to eligible voters. The voters can use these vouchers to donate to the candidate of their choice. While the voucher is publicly funded, the decision to allocate the money is taken by individual voters.)

Conclusion and way forward

There are 34 countries in the world where state funding of elections is available in some form or the other. The highest proportion of state funding is in Norway, which is about 74% of the total expenses on the election. But there are different models of state funding. In some countries, only parties get the fund and the candidates do not.

The implementation of state funding of election, is a desirable goal to introduce transparency in electoral funding. However, we need to devise a proper procedure for distribution of funds, with the consensus of all major political parties. In the meantime, we can implement some major suggested reforms of election funding-

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1. **Explore setting up of National Electoral Fund**- The idea of National Electoral Fund, put forth by former chief election commissioner T.S. Krishnamurthy, can be explored as an alternative to state funding of election. This fund would allow contributions from all donors. The money will then go to the parties according to the results of the elections or any other principle that all parties would agree upon.

2. **Audit of accounts of political parties**- Venkatachaliah Committee Report (2002) which has recommended strict regulatory frameworks for auditing and disclosure of party income and expenditure must be implemented to check for undisclosed funding.

3. **Capping the expenditures of the political parties and the Donations –** India must implement expenditure limits of political parties like UK. (In the UK, a political party is not allowed to spend more than £30,000 per seat contested by that party).
Also, The 255th report of the Law Commission of India's recommendation of capping the anonymous donations must be implemented.

These measures if implemented will serve our requirements of ensuring transparency in electoral funding till a consensus is reached on state funding of elections.

> **Read More**- The Hindu
> **UPSC Syllabus- GS 2-** Electoral Reforms
> **Syllabus Line- Salient Features of the Representation of People's Act.**

India-UK FTA and India's FTA 2.0 approach- Explained Pointwise

Introduction

India-UK FTA is being negotiated under India's FTA 2.0 approach. The India-UK FTA will serve as a template for India-EU FTA (EU is India's second-largest trade partner). India's earlier FTAs with ASEAN and Japan yielded moderate results for India. India has taken its learnings from its earlier approach to FTAs and has come up with a new FTA 2.0 approach.

Under its new FTA 2.0 approach, India has recently signed three trade pacts with Mauritius, UAE and Australia. All the future trade pacts with countries like Canada, Israel, GCC, EU and EFTA will be negotiated under this new approach.

India-UK FTA- Advantages and Challenges summarised in Brief

India-UK FTA negotiations hold importance for both the Indian and the British government. The FTA consists of 26 chapters, out of which 21 chapters have been negotiated. There are some contentious issues, which are delaying the finalisation of the India-UK FTA.

Advantages of India-UK FTA	Challenges in India-UK FTA
Advantage for India	1) **Reaching an agreement on the Rules of Origin**
1) **Boost to India's labour-intensive sectors**- India's	**(ROO)**- ROO determines the national source of a
labour-intensive sector like apparel/textile and gems	product. India is pushing for strict Rules of origin. For
and jewellery face high tariffs in the UK (Indian	ex- India fears dumping of European alcoholic drinks
Textiles attract 10% tariff). The proposed FTA will	like gin, vodka and Irish whiskey, into India via UK.
bring down the tariffs and help revive India's labour-	2) **Work permit for Indian service sector workforce-**

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intensive sectors.

2) Increase in Indian service exports- The proposed FTA is expected to increase exports of Indian service sectors like IT/ITES, Nursing, education, healthcare, including AYUSH and audio-visual services.

3) Elimination of Non-Tariff barriers for Indian exports- Non-Tariff barriers like testing, certification and pre-shipment inspections have been a major concern for Indian agri-exporters. For ex- Rejection of Indian rice due to pesticide residue.

4) Diversification of Indian trade partners- After India's exit from RCEP, these FTAs with UK, EU, GCC will help in diversification of India's trade partners.

5) Strategic Advantage- By strengthening trade bonds with UK, India can seek UK's support on issues like standoff with China and claim for permanent seat at UNSC.

Advantages for UK

1) **Push to 'China-plus one' strategy-** The proposed FTA gives a further push to the strategy of reducing the risks of over-dependence of the British economy on China after the COVID-19 experience.

2) **Boost to UK's beverage and automobile industry-** The FTA seeks to lower the Indian tariffs imposed on imported EVs and alcoholic products from UK. (Currently, 70% to 100% duty is imposed by India on imported cars).

3) **New partners after Brexit-** The search of UK for new trade partners after Brexit is the reason UK is pushing for the deal with India since 2016.

4) **Boost to UK's investment in India-** India and the UK are also signing a bilateral investment treaty (BIT) alongside the FTA that can provide an avenue to improve UK's investments into India. This will be a win-win situation for both countries.

After Brexit, UK has adopted a strict policy on granting work permits to foreigners. India is pushing for relaxation in the work permit policy.

3) Carbon tax- UK is looking to impose carbon tax on metal imports on lines of EU's carbon border adjustment mechanism (CBAM). This tax will hurt Indian manufacturing sector's exports such as cement, iron and steel and glass sector.

4) Intellectual property rights- Strong IPR regime is being pushed by UK. For ex- UK which is a leader in life science innovation, is pushing for stronger IPR regime in the medical sector while this is being opposed by India which is the largest manufacturer of generic drugs in the world.

5) Digital Trade/Cross Border Data Flow – India is yet to finalize its domestic laws on digital trade and data protection. Hence, it is exercising caution in making commitments in the proposed FTA.

6) WTO's MFN violation- Any interim and incomplete FTA would attract violation of the Most Favoured Nation (MFN) principles of the WTO.

7) Global Value Chain (GVC)- Discussions on the India-UK FTA are going in details to address complexities related to global value chains. India is negotiating hard for outcomes, which favour its ambition to become an alternative to China in the GVC.

8) Domestic political compulsions- India-UK FTA also faces challenges due to the growing political negativity towards India within Britain.

9) India's concerns of protection of its domestic industries- India is also concerned to protect its domestic alcohol bottling industry, which will face tremendous competition from the UK beverage companies.

What is FTA? What were the failures of India's old FTA which led to India's new FTA 2.0 approach?

Free Trade Agreements- FTAs are arrangements between two or more countries or trading blocs that agree to reduce or eliminate customs, tariff and non tariff barriers on substantial trade between them. **Trade deals are of Different types which are explained below**

EXPLAINING TRADE DEALS

Preferential Trade Agreement (PTA)

Two or more partner countries agree on preferential import tariffs on certain products. Each country has a mutually accepted positive list of tariff lines (products) eligible for low or zero duties.
Eg: India-Afghanistan PTA

Free Trade Agreement (FTA)

FTAs are bigger in scope as partner countries offer preferential trade terms and tariff concessions to each other for a much wider set of products and services. Both sides maintain a negative list of products and services that are excluded. Eg: India-Sri Lanka FTA.

Comprehensive Economic Cooperation Agreement (CECA)

CECA is more comprehensive than FTA as it generally covers negotiation on trade tariffs and tariff rate quotas that allow mutually agreed concessional import rate up to a certain quantity. Eg: India-Malaysia CECA

Comprehensive Economic Partnership Agreement (CEPA) & Economic Cooperation and Trade Agreement (ECTA)

The most comprehensive of all, CEPA or ECTA , covers negotiation on trade in services and investment and other areas of economic partnership like trade facilitation, customs cooperation, competition, IPR, etc. It can cover regulatory aspects of trade too.
Eg: India-Japan CEPA

Source- Fortune India

Read More- What are free trade agreements

Failures/Challenges of India's Earlier FTAs which led to adoption of new FTA 2.0 approach

1. **Uneven distribution of gains**- The margin of preference (actual tariff cuts) given by India to its FTA partners in the old FTAs were higher than the margin of preference given by partner countries.

2. **India's low FTA utilisation**- India's FTA utilisation remained very low at around 25 per cent. On the other hand, developed countries utilise the FTAs to the maximum(~ 70–80 per cent).

3. **Increase in Indian imports to the detriment of Indian domestic industries**- The earlier signed FTAs, resulted in the increase of import of FTA partner's goods in India to the detriment of Indian domestic markets. For ex- Japan and ASEAN countries, exports to India increased tremendously while Indian export to them did not increase commensurately.(In the period between 2017 and 2022, India's exports to its FTA partners increased by 31 per cent, while its imports increased by 82 per cent).

4. **Misuse of Rules of Origin**- The earlier negotiated FTAs had relaxed Rules of Origin(ROO) provisions, which were misused by the FTA partners to dump their products in Indian market. For ex- Chinese electronics via ASEAN FTA. However, the complexity of certification requirements of ROO, under these FTAs hindered India's ability to streamline processes for its exporters

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5. **Lack of adequate industry and stakeholder consultation-** During the previous FTA negotiations, Negotiators failed to involve representatives from relevant industries, businesses and associations. This led to market access being granted to FTA partners without considering critical views and concerns from domestic industries.

6. **Stringent Non-Tariff barrier provisions in the Old FTAs-** Previous FTA negotiation focus of India was more on Tariff barrier reduction. The non-tariff barriers provisions were not negotiated properly, which led to its mis utilisation against India. For ex- Indian exports have remained stagnant due to Japan's high import standards, despite India-Japan FTA.

7. **Disparity in the performance of the manufacturing sectors in India and its FTA partner economies-** South Korea and ASEAN's manufacturing sectors outperformed India's in critical industries such as electronics, automobiles, leather and textile products as their industries were more competitive than the Indian counterparts. This led to a surge in Indian imports due to the FTA between South-Korea and ASEAN.

8. **Lack of Government's efforts to popularise FTAs among industry stakeholders-** Limited outreach activities and inadequate marketing to create awareness about the benefits of the FTAs resulted in the underutilisation of these agreements.

9. **Failure of India to take advantage of its service sector-** India failed to take advantange of its strong service sector capability by failing to include service sector in some of the earlier FTAs.

Difference between the Earlier FTAs and the FTA 2.0

India has recognised the flaws in its earlier FTAs, with the Indian Minister of Commerce and Industry Piyush Goyal acknowledged that earlier FTAs were poorly conceived. The government initiated the review, and came up with a new FTA 2.0 policy.

WHY EARLIER FTAs WERE INEFFECTIVE...

- Low use by Indian exporters as margin of preference given by India to its partners was higher than what it got in return.
- Earlier FTAs could not lower technical barriers to trade such as mandatory standards, procedures and compliances.
- In sectors like electronics, Indian industry failed to withstand competition from FTA partners.
- FTAs were skewed towards imports, increasing trade deficit.
- They covered mostly goods and not services, where India is competitive.

...AND HOW THE NEW ONES ARE DIFFERENT

- FTA 2.O is not just about goods and services but also covers labour, innovation, anti-corruption, gender and investment initiatives.
- Strict 'local value addition' and 'country of origin' rules. For example, 40% value-addition in India-UAE FTA is higher than the 30% mentioned in earlier FTAs.
- Introduction of Mutual Recognition Agreements is making FTAs more balanced by taking care of technical barriers to trade.
- Government has linked export growth to schemes for boosting overall competitiveness of India industry.

Source- Fortune India

Conclusion and Way Forward

India's Comprehensive Economic Partnership Agreement (CEPA) with the United Arab Emirates and the Economic Cooperation and Trade Agreement (ECTA) with Australia are both part of India's FTA 2.0 approach. India's exports to both countries have shown a significant increase just a few months after the conclusion of the CEPA, and remarkable FTA utilisation statistics have also been reported.

However, we should not be buoyed by the short term results. We must focus on taking the following steps to use the FTAs 2.0 to our advantage.

1. **Development of Trade infrastructure-** Govt must take efforts to give a boost to trade infrastructure, set up fast track dispute settlement mechanism and digitise trade procedures.

2. **Increase global competitiveness of Domestic industries-** Increased competitiveness of Indian industries will help us increase exports to FTA partners and achieve our target of $5 trillion economy.

3. **Regular industry consultation and use of data analytics-** The regular feedback of industrial bodies like CII, FICCI and creation of data analytics division in the commerce ministry to regularly analyse the trade data to take corrective measures.

4. **Inclusion of new Paradigms of international trade-** Trade in services, e-commerce, labour, climate/environment, digital trade, public procurement have become central issues in international trade. Government must be prepared to adjust to this new paradigm in FTA 2.0 rather than avoiding these issues. Like for example- Foreign Trade Policy for digital goods.

4. **WTO Plurilateral Negotiations-** India could further increase its exports by participating in the major plurilateral negotiations on services, environmental goods, and government procurement now taking place at the WTO.

> **Read More-** The Indian Express
> **UPSC Syllabus- GS 3-** Indian Economy and Issues related to Growth

The Issue of Governors Withholding Assent to Bills- Explained Pointwise

Introduction

The Governors, in various instances in the last few years, have **delayed and sometimes withheld giving assent to Bills passed by State legislatures**.

Recently, the Tamil Nadu Governor 'withheld' assent for certain Bills passed by the Legislative Assembly. Earlier, the Tamil Nadu NEET Bill for granting exemption to TN from the National Eligibility cum Entrance Test (NEET) was reserved for the President's assent by the Governor after considerable delay.

Apart from Tamil Nadu, **Kerala, Telangana, and Punjab** too have sought the intervention of the Supreme Court on the issue.
Kerala in its plea has argued that 3 Bills have been pending with the Governor for more than 2 years, and 3 Bills for more than a year.
Telangana has argued that more than 10 key Bills are pending with the Governor.

A detailed article on the office of the **Governor** can be **read here**.

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What are the Constitutional Provisions regarding Governor's assent to Bills?

While **Article 163** of the Constitution deals with the powers of the Governor, **Article 200** specifically deals with the issue of granting assent to Bills. Both the provisions are read together to determine the power of the Governor to withhold assent to bills.

As per **Article 200**, when a Bill is passed by the state legislature, the Governor has four options:
(1) grant assent to the bill;
(2) withhold assent to the bill **(Absolute Veto)**;
(3) return the bill for reconsideration, if it is not a Money Bill **(Suspensive Veto)**: If the legislature passes the bill again, with or without amendments, the Governor has to give assent;
(4) reserve the bill for the consideration of the President.

It also stipulates that the Governor shall reserve for the President's consideration any Bill that, in the Governor's opinion, would **diminish the powers of the High Court**.

However, Governors have been accused of misusing their powers and unfairly withholding their assent to Bills, leading to friction with State governments. This is due to the following factors:

1. **Discretionary Powers (Article 163):** The Constitution makes it clear that if any question arises on whether a matter falls within the governor's discretion or not, the decision of the governor is final and the validity of anything done by him cannot be called in question on the ground that he ought or ought not to have acted in his discretion.

2. **No provision for a Time Limit:** The Constitution has no time limit under which the Governor has to make a decision regarding assent to a Bill. Thus, he/she can exercise a **Pocket Veto** (A pocket veto is when a President or a Governor essentially prevents a Bill from being passed by taking no action on the Bill (i.e. "keeping it in their pocket")).
   The proviso in Article 200 says the **Governor must return the Bill "as soon as possible"** but **does not prescribe a specific timeframe**. Governors have exploited this ambiguity to sit on Bills indefinitely without returning them to the state legislature.

3. **Alleged Partisan Behaviour:** Governors have been accused of acting as agents of the Centre and not as an independent Constitutional Office.

What are the issues with Governors withholding assent to Bills?

4. **Undermines the Democratic Process:** The Governor, who is appointed by the Centre, can delay or reject Bills passed by state assemblies for political reasons. This undermines the democratic process, since the Governors are not elected officials.

5. **Undermines Federal Nature of Indian Polity:** The Governor's alleged partisan actions to reject legislations passed by States at the behest of the Centre undermine federalism, which is a basic feature of our constitution (Keshavananda Bharati Case, 1973).

6. **Lack of Accountability:** When the Governor withholds assent, he/she does not have to provide any reason for the decision.

7. **Abuse of Power:** The grant of assent is a routine function of the titular head of state, and the exceptional power to withhold it is not meant to be exercised unreasonably.

8. **Delay in Decision-Making and Implementation of Policies:** This affects the effective functioning of the state government. For instance, due to the delay in approving proposals for the appointment of Tamil Nadu Public Service Commission (TNPSC) members, it currently has several posts vacant.

9. **Negative Public Perception:** The public often views pending Bills as a sign of inefficiency or even corruption in the state government, which can damage the government's reputation.

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What are the recommendations of various Committees on this issue?

Sarkaria Commission:
10. Apart from exceptional cases where bills are outright unconstitutional, the Governor must discharge his functions under Article 200 as per the advice of ministers.
11. The Governor should be a detached figure without intense political links or should not have taken part in politics in the recent past. Besides, he should not be a member of the ruling party.

Punchhi Commission:
12. It recommended that the Governor should take a decision with respect to a Bill presented for their assent within a **period of 6 months.**
13. It also called for providing a procedure for the Governor's removal by the process of impeachment (similar to that of the President) by the State Legislature.
14. A committee with the respective Chief Minister as a member should choose the Governor.

National Commission to Review the Working of the Constitution (NCRWC):
15. NCRWC proposed a **four-month time limit** for the Governor to decide on a bill's fate.
16. It also suggested the removal of the Governor's power to withhold assent except in cases explicitly stipulated in the Constitution.

2nd Administrative Reforms Commission:
17. The **Inter-State Council** should formulate guidelines on how governors should exercise discretionary power.

Rajamannar Committee on Centre-State relations:
18. It emphasised that the Governor should not consider himself as an agent of the centre but play his role as the constitutional head of the State.

What are the observations of the Supreme Court on this issue?

Rameshwar Prasad Case: SC ruled that Article 361 (which grants Governors complete immunity from court proceedings for any actions taken in the exercise of their powers) does not prevent the Court from examining the validity of the action, including on the grounds of malicious intent. If the grounds for refusal reveal malicious intent, the Governor's decision to refuse assent could be deemed unconstitutional.

Shamsher Singh Case: The Court held that the expression "in his discretion" is used only in those Articles of the Constitution that confer special responsibilities on the Governor and does not extend to Article 200. It held the view that the principle of Cabinet responsibility is firmly entrenched in our constitutional democracy.

Nabam Rebia & Bamang Felix Case 2016: The SC clarified that a Governor's discretion under Article 200 is limited to deciding whether a bill should be reserved for the President's consideration. The Court emphasized that actions by the Governor regarding bill assent can be subject to judicial review.

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SC's Observations in the petition filed by the State of Telangana: While referring to the first proviso to Article 200 of the Constitution, the SC mentioned that **Governors should not act slowly on Bills sent to them for assent**. The Bench held that the phrase **'as soon as possible' in Article 200** has a significant content and must be borne in mind by constitutional authorities.

What are the various solutions to prevent this issue?

19. **Ensuring Accountability for the Decision:** The Governor must provide a valid reason for such refusal. They cannot act arbitrarily.
20. **Maintaining a Neutral Constitutional Stand:** The Governor is supposed to be an independent, non-partisan person. It is important that the governor must act judiciously and impartially while exercising his discretion.
21. **Framing a Code of Conduct:** There is a need to devise a 'Code of Conduct' that should define certain 'norms and principles' that should guide the Governor's actions.
22. **Careful Use of Discretionary Powers:** Governors should use the pocket veto judiciously.
23. **Respecting the Federal Nature of Indian Polity:** Federalism is a basic feature of our Constitution, and the Governor's office should not undermine the powers of elected governments at the States.
24. **Following International Best Practices:** The practice followed in the United Kingdom can be replicated, where the veto could only be exercised on ministerial advice. The refusal of royal assent on controversial grounds is considered unconstitutional.
25. **Committee Recommendations:** The recommendations of Sarkaria Commission, Punchhi Commission and NCRWC, as mentioned above, must be implemented.
26. **Authoritative Supreme court decision-** The SC decision must address the grey areas of Art 200 which the Governors misuse for with holding the Bill. It must also prescribe a time limit for which the governor can with hold the Bill.

[Yojana November 2023] Circular Economy- Explained Pointwise

Introduction

The concept of Circular economy has gained momentum in recent times and is here to stay. With the environment and climate at the verge of catastrophes, 'circular economy' has already earned the status of a powerful antidote for preventing the worst from happening, or at least for lessening the negative impacts.

This concept has entered the scientific debate and the jargon of politicians, entrepreneurs and civil society. It has become an important policy priority. India recognised the need for it and launched the Resource Efficiency and Circular Economy Industry Coalition (RECEIC) under its G20 presidency.

Read More- Resource Efficiency Circular Economy Industry Coalition

What is Circular economy? How is it different from the other economic production-consumption models?

Circular Economy- It is an economic model of production and consumption, which involves sharing, leasing, reusing, repairing, refurbishing and recycling existing materials and products for as long as possible. This in turn extends the life cycle of the product.

Three economic production-consumption models- Compared

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Linear Economy	Recycling Economy	Circular Economy
It is a 'take-make-consume-waste' model. There is no focus on either recycling or reduction. The model relies on large quantities of cheap, easily accessible materials and energy.	It is a 'take-make-consume-waste-recycle' model. The model focuses on recycling of the end products for reuse. This model was an advancement over the linear economy model with the introduction of recycling.	It is a 'reduce-reuse-recycle-refurbishment-recover-repair' model. The model focuses on reduction of waste in the first place and minimisation of the need for recycling. For ex- Use of microbial biodegradable polymers produced from agri-food waste for packaging of food items. This will eliminate use of plastics and the need of recycling.
Source-European Parliament	Source-European Parliament	Source-European Parliament

What are the benefits of Circular Economy?

1. **Transformation of the Current Throwaway economic model-** According to the Circularity Gap Report 2020, the global economy is only 8.6% circular. This means that over 90% of the 100 billion tonnes of resources that enter the economy per year are wasted. Adoption of Circular economic model eliminates wastage and increases the circulation of resources.

2. **Increase in employment opportunities-** Circular Economy fosters the development of a new, more inventive, and competitive industrial model. This can result in higher economic growth and more employment opportunities. **For ex-** According to NITI Aayog, in the next 5–7 years, this circular economic model has the potential to produce 1.4 crore employment and lakhs of new businesses like waste to energy.

3. **Reduced reliance on imports-** Reuse of local resources reduces reliance on imported raw materials and helps in achieving self-sufficiency. This fulfils our vision of Aatmanirbhar Bharat. **For Ex-** Used newspapers for making plates and use of earthen lamps in place of electric lights.

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4. **Protection of the environment-**

a. Circular economy benefits the environment by consuming fewer natural resources and reducing the generation of waste. **For ex-** According to the Central Pollution Control Board (CPCB), India generates over 62 million tonnes of waste every year. Most of this waste is disposed of in landfills or dumped in open spaces, leading to environmental degradation and health hazards.

b. It helps in preservation of biodiversity and reduces the pressure on natural resources like forests. For Ex- Decreased mining in forest areas.

5. **Achieving the sustainable Development goals-** Adoption of this economic model leads to the adoption of responsible production and consumption patterns (SDG 12).

What steps have been taken to promote circular economy?

The Government of India is putting special emphasis on the importance of the circular economy, resource efficiency, and sustainable consumption and production.
Mission LiFE, launched by India in October 2022, seeks to promote circular economy by reshaping demand, rethinking supply and developing a responsive ecosystem.
Some of the other key initiatives taken by India, to promote the circular economic model are mentioned below:

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1. **National Resource Efficiency Policy (NREP)-** The NREP was launched in 2019 with the objective of promoting sustainable production and consumption patterns, enhancing resource efficiency, and reducing the environmental impact of economic activities. Steel scrap recycling policy and Vehicle scrapping policy have also been launched with the same objectives.

2. **Extended Producer Responsibility (EPR)-** EPR is a regulatory framework that makes manufacturers and producers responsible for the post-consumer waste generated by their products. The Government has notified various rules, such as the Plastic Waste Management Rules, e-Waste Management Rules, Construction and Demolition Waste Management Rules, Metals Recycling Policy.

3. **Bio-Economy and Biofuels-** Pradhan Mantri JI-VAN Yojana, Galvanizing Organic Bio-Agro Resources (GOBAR) Dhan scheme and Sustainable Alternative Towards Affordable Transportation (SATAT) Scheme, promote circular economy in the agricultural sector by converting agri-waste into ethanol and compressed Bio-gas (CBG).

4. **Initiatives of NITI Aayog-** NITI Aayog has taken initiatives to address the challenges in the utilization of waste as resource. **For ex-** Promotion of the usage of fly ash and slag produced in the steel industry in other sectors.

Other international initiatives and Case Studies for Circular Economy

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1. **China, Germany and Japan-** China has enacted the Circular Economy Promotion Law. Germany and Japan have used this model as a binding principle for reorganising their economies.

2. **Global Alliance on Circular economy and Resource Efficiency (GACERE)-** It was launched in 2021 and is supported by UNEP and UNIDO. India is a member of GACERE. It advocates for a global circular economy transition.

3. **Resource Efficiency and Circular Economy Industry Coalition (RECEIC)-** Mentioned above.

What are the Challenges in achieving Circular Economy ?

1. **Unclear Vision for Circular Economy-** Currently the efforts for promotion of this economic model are being made at the very end of value chains at the recycling stage. This has resulted in suboptimal economic and environmental outcomes.

2. **Reluctance of Industries-** The Industries have been reluctant in adopting this model due to supply chain limitations, complex recycling processes and lack of incentives in investments for circular economy.

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3. **Infrastructure Challenges-** Currently, India's infrastructure is not well-suited to support a circular economy. **For ex-** there is lack of adequate recycling facilities, which makes it difficult to recycle and reuse materials.

4. **Cultural Challenges-** There is a cultural resistance to the idea of reusing and recycling products in India, making it difficult to change consumer behaviour and shift towards a circular economy. For Ex- Discarding the clothes of deads, in India, contributes to increase in lifestyle related pollution.

5. **Growth of consumerism and materialism-** The growth of consumerism and materialism has increased the resource extraction and wastages. For ex- Discarding iPhones every year for a new iPhone.

Conclusion and Way forward

1. **Develop a comprehensive circular economy policy-** India needs to create a comprehensive policy framework that outlines the goals, strategies and mechanisms to transition towards a circular economy.

2. **Increase the investment in innovation and technology-** India should invest in innovation and technology to develop new circular solutions, such as advance recycling technologies, sustainable materials and renewable energy sources.

3. **Shift of focus of our efforts for Circular economy-** The focus of Indian Government has been more on recycling till now. Now, the focus of the circular economic model, must shift to the design and manufacturing stage.

4. **Encourage sustainable production and consumption-** Government should encourage the production and consumption of sustainable products and services through tax incentives, product labelling and awareness campaigns.

5. **Promote waste reduction and management-** Government needs to focus on reducing waste generation and managing waste more efficiently. These can include measures such as promotion of recycling, composting, and waste-to-energy conversion. This would in turn benefit the local community.

India must take proactive steps to accelerate the transition to a circular economy, including investing in infrastructure, encouraging innovation and technology development, and building public awareness and support for a circular economy.

> **Read More-** The economic Times
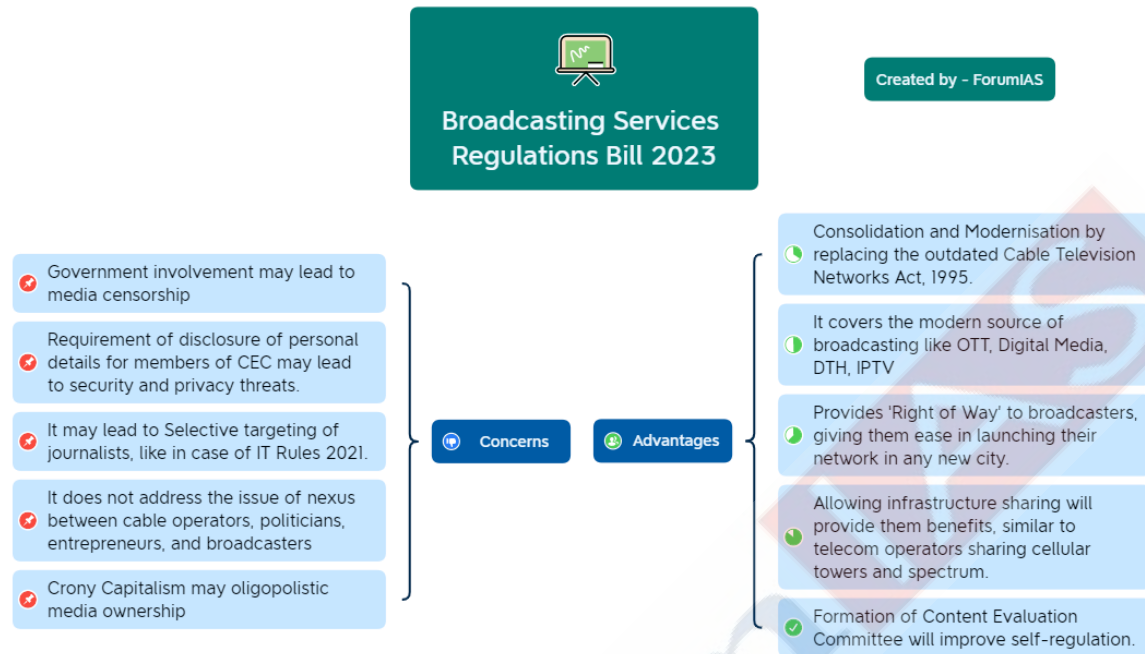> **UPSC Syllabus- GS III-** Conservation, Environment Pollution and Degradation

Broadcasting Services Regulation Bill 2023- Explained Pointwise

Recently, the draft Broadcasting Services Regulation Bill 2023 has been released by the Ministry of Information and Broadcasting for public consultation. The Bill aims to provide for a consolidated framework to regulate the broadcasting services in the country. However, concerns have been raised by experts regarding some provisions of the bill.

What are the key features of the Broadcasting Services Regulation Bill 2023?

Some of the Key Features of the Broadcasting Services Regulation Bill 2023 are mentioned below:

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Unified Regulatory Framework for Broadcasting	The bill aims to replace the Cable Television Networks Act of 1995. It also extends the regulatory purview to cover broadcasting of the over-the-top (OTT) content and digital news and current affairs, currently regulated through IT Act, 2000.
Contemporary Definitions and Future-Ready Provisions	The bill introduces comprehensive definitions for contemporary broadcasting terms. It incorporates provisions for emerging broadcasting technologies, to keep pace with the evolving technologies and services.
Strengthens self-regulation mechanism	1) The Bill establishes 'Content Evaluation Committees' for self-regulation. 2) The Bill Introduces a 'Broadcast Advisory Council' to advise the central government on violations of program and advertisement codes.
Differentiates Programme Code and Advertisement Code	The Bill allows for a differentiated approach to Programme and Advertisement Codes across various services.
Accessibility for Persons with Disabilities	1) The Bill promotes the use of subtitles, audio descriptors, and sign language for persons with disabilities. 2) The Bill provides for the appointment of Disability Grievance Officer.
Penalties	1) Prescribes penalties such as advisory, warning, censure, or monetary penalties for operators and broadcasters. 2) Reserves imprisonment and/or fines for severe offences, like obtaining registration with a false affidavit.
Equitable Penalties	The Bill links monetary penalties and fines to the financial capacity of the entity. It takes into consideration, the entities turnover and investment for fairness and equity.
Infrastructure sharing provisions	The Bill introduces provisions for infrastructure sharing among broadcasting network operators.
Dispute resolution	The Bill establishes a structured dispute resolution mechanism.
Read More- Draft Broadcasting Services (Regulation) Bill, 2023	

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What are the advantages of the Broadcasting Services Regulations Bill 2023?

1. **Consolidation and Modernisation-** The Bill replaces outdated Cable Television Networks Act, 1995. The Bill adopts a unified, future-focused approach by adapting to the dynamic world of OTT, Digital Media, DTH, IPTV.

2. **Promotes 'ease of doing business'** The bill seeks to promote 'ease of doing business' by incorporating provisions for Dispute Resolution mechanism in the broadcasting domain.

3. **Further Push to 'Digital India'-** The bill seeks to promotes technological advancement and service evolution in the broadcasting domain, which will give a further push to our goal 'digital India'.

4. **Provides for 'Right of Way'-** The Bill provides for 'Right of Way' which would enable cable operators to easily obtain permissions from various local agencies to roll out their network in a new city.

5. **Promotes infrastructure sharing-** The broadcasters would be benefit from the infrastructure sharing, in the same way as the telecom operators benefited from sharing cellular towers and spectrum.

6. **Empowers Broadcasters by providing for self-regulation mechanisms-** The Bill provides provisions for the establishment of Content Evaluation Committees which would be a self-certification body of the broadcasters. This would provide autonomy to the broadcasting industry in matters of obtaining certification.

7. **Promotes 'ease of living'-** The bill promotes 'ease of living' by enhancing the accessibility of broadcasting services for persons with disabilities by promoting the use of subtitles, audio descriptors and sign language.

What are the Concerns with the Broadcasting Services Regulations Bill 2023?

1. **Threat of Censorship-** The government-prescribed programming and advertising codes might stifle creativity, artistic freedom, debate, and discourse, which are the lifeblood of a healthy democracy. Also, the Bill allows

government officers to prohibit broadcasts they deem inappropriate. Hence, there are fears of misuse of the Bill, which may be used to impose undue restrictions and censorship.

2. **Issues with the Content Evaluation Committees (CEC)-**
a. The government will prescribe the criteria for the constitution of CEC, which raises questions of its independence.
b. The requirement of disclosure of personal details of the members of the CEC to the government and public, is against the Right to Privacy. It also contradicts the provisions of the Digital Personal Data protection legislation.
c. Disclosure of personal details also puts them at risk of physical or online harassment, for approving a content which may offend an individual or a group.

3. **Issues with the Broadcast Advisory Council (BAC)-** All the members of the proposed Broadcast Advisory Council (BAC) will be nominated by the Centre. Since the BAC will have a final say on censoring content across all broadcasting mediums, government may push for content censorship through BAC.

4. **Selective targeting of Journalists-** Critics fear that the bill may be misused to selectively target the journalists by the govt, like the IT Rules 2021 are being misused to arrest media personnel.

5. **Potential Impact on Minority Communities-** There are concerns of misuse of the vague language in the bill for erasure or selective representation of Indian minority communities and promotion of a universal majority identity of India.

6. **Conflict of Interest –** The bill does not address the conflict of Interest and opaque issues in media regulation, such as the unholy nexus involving cable operators, politicians, entrepreneurs, and broadcasters.

7. **Oligopoly in Media Ownership –** The unbridled power provided to government officials in the broadcast media regulation may lead to collusion between the government and media houses to create oligopolistic media ownership.

8. **Reduced autonomy of OTT platforms-** Application of the stringent rules and codes of cable or radio to "OTT" broadcasting services, may increase the financial and compliance burden for OTT broadcasters. This will end up negatively impacting the user experience, choice, and costs borne by the users.

Conclusion and Way Forward

We must also seek to explore these ways for addressing the challenges of the Bill and for better media regulation-

1. **Stakeholder Consultation-** Extensive Consultations with industry experts, content creators, broadcasters, and the public can give extensive feedback to the government regarding their concerns on the Bill.

2. **Promotion of Media Literacy-** Investment in media literacy programs to educate the public about responsible media consumption like Singapore and Australia.

3. **Responsible Media-** The media must uphold it's duty of being the 4th pillar of the Indian democracy and ensure that journalistic ethics are not compromised.

4. **Ensuring the independence of the CEC and BAC-** The government must nominate members from the broadcast industry and from civil society to keep the CEC and BAC independent and impartial.

The Broadcasting Services (Regulation) Bill, 2023, seeks to usher in a modern the regulatory framework, but it must be implemented with caution and careful consideration. As India navigates the ever-changing landscape of broadcasting, striking a balance between regulation and freedom of expression is important.

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> **Read More**- Business Standard
> **UPSC Syllabus- GS Paper 2 Indian Polity** – Government policies and interventions for development in **various sectors and issues arising out of their design and implementation.**

Local Reservation in Private Sector- Explained Pointwise

Recently, the Punjab and Haryana High Court quashed the Haryana State government legislation providing 75% local reservation in private sector jobs with a monthly salary of less than ₹30,000. This judgement has also raised a question on the constitutionality of laws providing local reservation in private sector which have been enacted by other states, such as Jharkhand, Maharashtra, Karnataka, Andhra Pradesh and Madhya Pradesh.
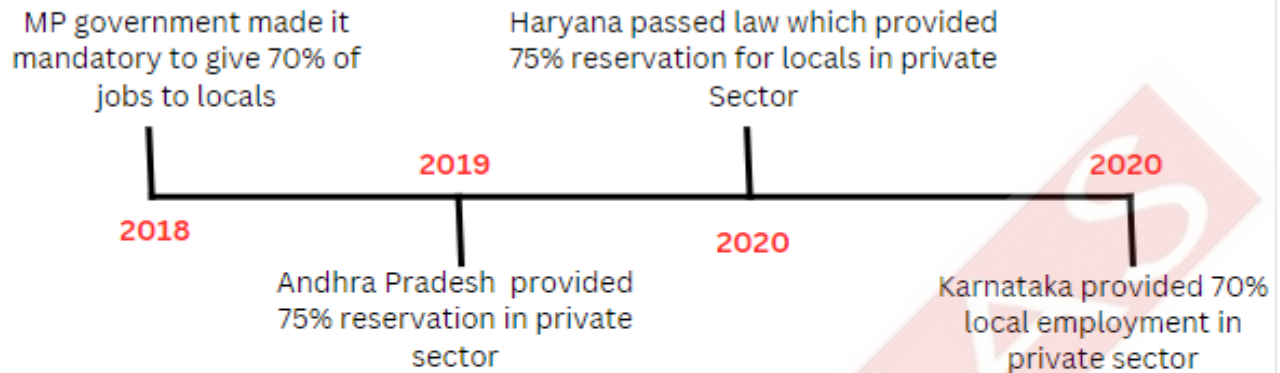
Snippet of the HC Judgement on Haryana's Law on Local Reservation in Private Sector

Arguments in Favour of the Legislation	Arguments against the Legislation
1. **Protection of Right to livelihood-** The State government contended that the local reservation law intends to protect the right to livelihood of people domiciled in the State. 2. **Solving the rising unemployment problem-** The legislation aims to solve the rising unemployment in Haryana. 3. **Mandate of Article 16(4)-** The government contended that it is empowered to provide local reservation under Article 16(4) of the Constitution. Art 16(4) stipulates that the right to equality in public employment does not prevent the State from making reservation for any backward class of citizens which are not adequately represented.	1. **Violation of provisions of Article 19 of the Constitution-** The reservation law violated the Right to freedom to reside and settle in any part of the Indian territory and practise any profession, business or trade. 2. **Infringement of Article 14 and 15-** The law was an infringement of Article 14 (equality before the law) and Article 15 (prohibition of discrimination on grounds of place of birth). 3. **Contravention of common citizenship-**The local reservation law creates a wedge between persons domiciled in different States and is contrary to the concept of common citizenship envisaged in the Constitution.
High Court's Judgement	
1. **Local Reservation Law is unconstitutional-** The law is in contravention with the Article 19(1)(g) of the Constitution, which provides the freedom to carry on occupation, trade or business in any part of the country. 2. **Legislative overreach by state legislature-** Article 16(3) provides the power to prescribe local residence as a pre-criterion for employment only to the parliament. 3. **Local Reservation law creates 'artificial walls'-** The law discriminates against individuals who do not belong to a certain State by putting up artificial walls of local residence requirement. 4. **Certain provisions of the Law amount to 'Inspector Raj'-** Certain sections, like section 6 and section 8 of the act which mandated the firms to submit quarterly reports on the status of implementation of local reservation in their firms, amounts to 'Inspector Raj'.	

Historical Timeline of Laws granting Local Reservation in private sector

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What arguments are provided in support of Local Reservation in private sector?

In addition to the 3 arguments made above in the table in favour of local reservation, the following arguments also support such a move –

1. **Empowerment of local youth-** The objective of local reservation is to empower the local youth by giving them employment. For ex- Haryana, has one of the highest rates of unemployment (9%) as per PLFS 2021-22.

2. **Addresses Local Resentment –** The local reservation addresses the resentment of locals against migrant workers taking up their jobs.

3. **Legitimate right of the State-** The proponents of local reservation argue that the states have a legitimate right to ask private sectors to adhere to the local reservation policy as the private sector utilizes public sector infrastructures.

4. **Social Equality-** Local Reservation in private sector jobs is needed to achieve substantial social equality, as the proportion of public sector jobs is very low as compared to private sector jobs.

5. **Ends private sector's exploitation of migrant workers-** Private employers often exploit the migrant labour market as such workers tend to work long hours for low wages with little or no social protection and benefits.

6. **In line with global practices-** US (The US Civil Rights Act of 1964) and Canada (The Employment Equity Act) provide for reservation in private jobs.

What are the arguments against Local reservation in private sector jobs?

In addition to the 3 arguments made above in the table against local reservation, the following arguments also counter such a move-

1. **Negative effect on the Economy-** Local reservation in private sector jobs decreases inter-state mobility of skilled and unskilled labour. This shortage of qualified workers in a state may impact business units and thus the economy of the entire country. For ex- Flight of firms from Gurugram to Noida.

2. **Discourages Investment-** 'Compulsory and restricted' employment choices decreases the competitiveness of companies. It also discourages investment potential in a state by creating compliance burden. For Ex- Haryana's quarterly compliance report to be submitted by the companies appraising local reservation implementation.

3. **Hampers Inclusive Growth-** Developed States imposing 'domicile based employment restrictions' reduces the job opportunities of workers from the underdeveloped states like Bihar and UP. For Ex- Increases in the Human development Index (HDI) gap.

4. **Threat to National Unity-** Local reservation fuels the growth of 'Sons of Soil' feeling and breeds antagonistic regionalism. It also increases friction among locals and non-locals, negatively impacting the social fabric of the nation. For ex- Attack on Bihari workers in Maharashtra.

5. **Against the reservation ceiling-** The provision of 75% reservation goes against the Supreme court's mandated ceiling of 50% reservation as enunciated in the Indira Sawhney Judgement.

Read More- On Domicile-based Private Sector Reservation – Parochial law

Conclusion and Way Forward

The following must be explored to douse the contentious issue-

1. **States must Uphold Uniform Labour Rights-** States should ensure that migrant workers enjoy basic labour rights and create a level playing field for both the migrant and local workers. This will also protect the migrant labours from exploitation.

2. **Shift of focus from Reservation to Development-** The State government must focus on Ease of Doing Business Reforms to attract industries, Skill Development Programs, Infrastructure Development, Education Reforms and Rural Development. It will help solving in the unemployment problem in the long term.

3. **Supreme court must lay down the guidelines-** As the supreme court laid down the ceiling of reservation in public sector jobs in the Indira Sawhney judgement, it must also give its guidelines on the local reservation in private sector.

4. **Promotion of the spirit of 'Ek Bharat Shrestha Bharat'-** The narrow parochial views of regionalism which is propagated by these local reservation must be countered by actively promoting interstate cultural interactions through the 'Ek Bharat Shrestha Bharat' Scheme.

Read More- The Hindu
Syllabus- GS Paper 2 Indian Polity – Indian Constitution. GS Paper 1 Indian Society – Regionalism.

Common But Differentiated Responsibilities- Explained Pointwise

Common but differentiated responsibilities (CBDR) principle is back in focus, as the members of United Nations Framework Convention on Climate Change (UNFCCC) assemble for the Conference of Parties (COP 28) meeting in Dubai, UAE. The principle of CBDR was first introduced in the 1992 UNFCCC in Rio De Jenario. The CBDR concept has

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evolved into CBDR-RC with the addition of Respective Capacities term to it, in the Paris Accord. CBDR-RC principle, has since then been a key element in international environmental agreements involving climate change.

What is the Common but differentiated responsibilities (CBDR) principle?

Common but differentiated responsibilities respective capacities- The concept of CBDR-RC has evolved from the notion of the 'common heritage of mankind'. The principle recognizes historical differences in the contributions of developed and developing States to the creation of global environmental problems like climate change, global warming. At the same time, the principle also recognizes the differences in the economic and technical capacities of developed and developing countries to tackle these problems.

Key Elements of CBDR-RC explained in detail

Common Responsibilities	All countries share a common responsibility to address global challenges, such as climate change. This implies a recognition that collective action is necessary to address issues that transcend national borders.
Differentiated Responsibilities	Developed countries, which historically have contributed more to environmental issues, have used up the major share of global carbon budget. As such, they are expected to take on more significant commitments and actions compared to developing countries.
Respective Capacities	The principle considers the varying capacities of countries to deal with environmental challenges. Developing countries may require support, both in terms of financial assistance and technology transfer, to effectively participate in global efforts to address environmental issues.

Infograph for quick read

Common But Differentiated Responsibilities   © Forum IAS

Common but differentiated responsibilities (CBDR) establishes that all states have shared obligation to address global environmental destruction, but are not equally responsible. Developed countries which have been historical polluters have greater responsibility in addressing the climate change problem

Advantages

1. CBDR mandates the developed nation's financial aid to developing countries like Green Climate Fund

2. Paris Agreement reaffirmed the importance of CBDR principles to achieve the climate action goal.

3. CBDR introduces principles of loss and damage and adaptation measures for least developing countries.

4. CBDR institutionalises bottom-up and democratic approach to climate action

5. CBDR ensures climate justice for the vulnerable communities of Small Island nations

Challenges

1. Lack of application of the CBDR principle in new climate change negotiations like Loss and Damage.

2. Continued over-exploitation of Global Carbon Budget by Developed countries goes against CBDR

3. Backtracking on commitments by developed countries on climate finance of $100 bn.

4. Developed countries demands from developing countries like India to shoulder more responsibility.

5. Developed countries avoiding binding targets, as seen in the case of INDCs.

Way Forward

1. Fair allocation of Global Carbon Budget to every nation.

2. Binding targets of emission reduction for developed nations

3. Predictable and assured Climate Finance Regime.

4. Climate Finance must be augmented by technology transfer mechanisms like Clean Development Mechanism

5. United voice of global south in climate change negotiations by using forums like Voice of Global South summit for concesus building

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What is the advantage of Common But Differentiated responsibilities (CBDR) principle?

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1. **Economic benefits to developing countries-** CBDR-RC mandates the developed nations to offer technological and financial aid to developing countries in addressing climate challenges. Simultaneously, it alleviates developing countries from the expenses associated with adhering to stringent carbon reduction regulations, indirectly contributing to their economic development and narrowing the gap with developed nations. **For Ex-** Green Climate Fund, Adaptation Fund etc.

2. **Achievement of Climate action goals-** The Paris Agreement reaffirmed the importance of CBDR-RC principles to achieve the climate action goal of limiting the rise in global temperature to below 2 degree celsius.

3. **Introduction of principle of Equity-** CBDR-RC prioritizes equity over equality, ensuring that no country or group is disadvantaged. Instead, it seeks a balanced approach that benefits everyone involved. **For Ex-** CBDR-RC introduces principles of loss and damage and adaptation measures for developing countries.

4. **Bottom-up and Democratic Approach-** According to the principle of CBDR-RC, nations have been mandated to formulate Intended Nationally Determined Contributions (INDCs) at the central, state, and grassroots levels. This process involves multiple stakeholders and is fundamentally democratic in its approach and emphasizing a bottom-up methodology. **For Ex-** Tribals and PVTGs, opinions are taken to draft the action plan for INDCs.

5. **Ensures Climate Justice-** CBDR-RC ensures climate justice for the vulnerable communities of Small Island nations and least developing countries, who have paid the price without even polluting the environment.

What are the challenges in the application of Common But Differentiated Responsibilities Principles?

1. **Application in new climate change negotiations-** The present day international climate regime is facing a major challenge in the application of the CBDR-RC principle in new climate change negotiations. **For ex-** The developed countries' rejection of the references to the CBDR-RC Loss and Damage fund's draft.

Read More- Loss and Damage Fund

2. **Continued over-exploitation of Global Carbon Budget-** The developed countries, which have already used 4/5th of global carbon budget, continue their overexploitation of the remaining budget. This reduces the share of developing nations in the carbon budget and goes against CBDR-RC principles.

Global Carbon Budget- It refers to the maximum cumulative global anthropogenic CO_2 emissions from the pre-industrial era to when such emissions reach net-zero. The remaining carbon budget indicates how much CO_2 could still be emitted, from a specified time after the pre-industrial period, while keeping temperature rise to the specified limit.

3. **Backtracking on Commitments-** Developed countries have been violating the CBDR-RC principles by backtracking on their net-zero targets, climate finance pledges, climate related actions. **For Ex-** Reopening coal plants across Europe after the Russia-Ukraine war created an energy crisis, failure of the developed countries to provide US $100 billion dollars a year (agreed at COP-15), overstretched net-zero reduction targets (US must achieve net-zero by 2025 instead of 2050 to achieve Paris goals).

4. **Attempt at Dilution-** The developed countries are attempting to reduce their responsibilities by demanding developing countries like India to shoulder the responsibility of emission reduction. The per capita CO2-FFI (fossil fuel and industry) emissions of South Asia is just 1.7 tonnes CO2-equivalent per capita, which is significantly lower than the world average of 6.6 tonnes CO2-eq. per capita.

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5. **Avoidance of Binding Targets-** Developed countries by avoiding binding targets in the new negotiations have reneged on their responsibility owing to historical contributions. **For ex-** The Nationally Determined Contributions (NDCs) under the Paris Agreement are voluntary in nature & non legally binding, unlike the Kyoto protocol targets.

Conclusion and Way Forward

1. **Fair allocation of global Carbon Budget-** The developing and underdeveloped countries must be provided a fair share in the global carbon budget. This will ensure equity as per the CBDR-RC principles.

2. **Binding targets of emission reduction-** Developed countries, recognizing their historical responsibility, must take binding targets in reducing their emissions. Developed countries must bring forward their net-zero target dates.

3. **United Voice of Global South in Climate Change Negotiations-** A United voice of global south in climate change negotiations must be built by using forums like Voice of Global South summit for consensus building

4. **Predictable and assured Climate Finance-** There must be binding targets on developed countries to provide funding to vulnerable countries to ensure adequate compensation for them. **For ex-** Institution of Loss and Damage Fund (L&D Fund).

5. **Technology transfer-** Climate Finance must be augmented by technology transfer to the developing nations to help accelerate their transition to low-carbon economies. **For ex-** Mechanisms like the Clean Development Mechanism.

Every stakeholder- Developed, developing and least developed countries-must realize that the CBDR-RC is still a potent tool to achieve collective viable climate change solutions. COP-28 must be driven by the CBDR-RC principles.

> **Read More- The Hindu**
> **UPSC Syllabus- GS III,** Conservation, Environmental Pollution and Degradation

[Yojana November 2023] Energy Transition In India- Explained Pointwise + Infographic

Energy Transition in India, from conventional to renewable sources of electricity generation, has been a transformative journey. This energy transition journey marks a monumental step towards a sustainable energy future. The Government's unwavering commitment to ambitious renewable energy targets, coupled with innovative policies and incentives, has set the stage for a greener energy landscape.

Energy Transition in India Info graph for Quick Read

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Energy Transition In India

Energy Transition refers to the transformation of the energy sector from fossil-based systems of energy production and consumption to renewable energy sources. It involves a shift in the energy mix to reduce the carbon emissions.
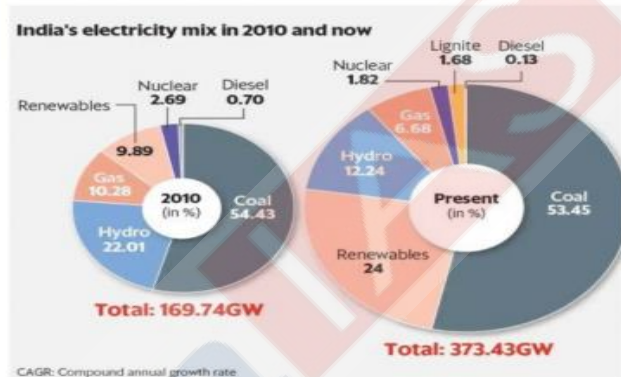
Need

» **Mitigating the negative impacts of climate change** like rise in global temperatures, glacial melting, sea level rise.

» **Ensuring India's Energy Security** as India is vulnerable to oil price volatility due to geopolitical instability like Russia-Ukraine war.

» **Improving India's Air Quality** as Fossil fuel combustion produces harmful air pollutants that contribute to respiratory illnesses, premature death

» **Adding new age employment opportunities** in sectors such as renewable energy development and electric vehicle production.

» **Fulfilling India's commitment** of Paris agreement and India's INDC

India's electricity mix in 2010 and now

2010 (in %): Renewables 9.89, Nuclear 2.69, Diesel 0.70, Gas 10.28, Hydro 22.01, Coal 54.43
Total: 169.74GW

Present (in %): Lignite 1.68, Diesel 0.13, Nuclear 1.82, Gas 6.68, Hydro 12.24, Renewables 24, Coal 53.45
Total: 373.43GW

CAGR: Compound annual growth rate

Challenges

» **Job losses** in the Fossil fuel dependent industries like Coal industry, thermal power plants

» **High initial cost of development** of renewable energy infrastructure

» **Constrained financial capacity** of the government to spend in renewable energy sector due to high social welfare programme expenditure

» **Lack of robust transmission network** capable of handling intermittent and decentralised energy sources

Way Forward

» **Systematic Identification of States' Potential** like Geo-thermal energy exploration in Ladakh

» **Increased private investment in R&D** in renewable sector for the development of cost effective storage technology

» **Use of fora** like ISA, Global Biofuel alliance for International Support and global Cooperation in just energy transition

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What is Energy Transition and what is the status of Energy Transition in India?

Energy Transition refers to the transformation of the energy sector from fossil-based systems of energy production and consumption to renewable energy sources. It involves a shift in the energy mix to reduce the carbon emissions.

Energy Transition Status of India

Target of renewable energy installation (by 2022)	175 GW
Installed renewable energy capacity (Till FY 22)	172 GW

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Percentage increase in RE capacity from FY 2014 to FY 2023	17.2% (2014) 22.5% (2023)
India's Global Rank in installed RE capacity	4th

New Energy Transition Targets for India

Panchamrit- Five Nector of India's climate action
1. Reach 500GW Non-fossil energy capacity by 2030.
2. 50 per cent of India's energy requirements to be met by renewable energy by 2030.
3. Reduction of total projected carbon emissions by one billion tonnes from now to 2030.
4. Reduction of the carbon intensity of the economy by 45 per cent by 2030, over 2005 levels.
5. Achieving the target of net zero emissions by 2070.
Read More- India's New Climate Targets (INDCs) – Explained, pointwise

What is the need for energy transition in India?

1. **Mitigating the negative impacts of climate change-** Fossil fuel driven energy sector has resulted in increase in industrial emissions, causing threats of extreme climate change events like rise in global temperatures, glacial melting, sea level rise, heatwaves, cyclones and floods.

2. **Energy Security-** The reliance on fossil fuels has made India vulnerable to price volatility and geopolitical instability. **For ex-** Oil prices increase due to Russia-Ukraine war, Gulf war.

3. **Improving Air Quality-** Fossil fuel combustion produces harmful air pollutants that contribute to respiratory illnesses, premature death, and environmental damage.

4. **Economic Opportunities-** Energy transition in India has added new age employment opportunities and spurred economic growth in sectors such as renewable energy development, energy efficiency and electric vehicle production.

5. **Fulfilment of India's commitment-** Energy transition measures help in fulfilment of India's commitment at Paris Agreement.

What steps have been taken by India towards Energy Transition?

The Government of India has taken several measures for India's energy transition. Some of them are mentioned below-

Energy Conservation (Amendment) Act 2022	Energy Conservation Amendment Act, 2022 aims to mandate the use of non-fossil fuel sources including green hydrogen, green ammonia, biomass and ethanol for energy and feedstock in industries.
Renewable Purchase Obligations (RPO)	All electricity distribution licensees should purchase or produce a minimum specified quantity of their requirements from Renewable Energy Sources.
National Solar Mission	An initiative of the Government of India and State Governments to promote solar power in India with the target of target of 100 GW of solar power by 2022.
National Policy on Biofuels	The policy's objective is to reduce the import of petroleum products by fostering domestic biofuel production.
National Green Hydrogen Mission	National Green Hydrogen Mission was launched to make India a leading producer and supplier of Green Hydrogen in the world.

What are the challenges to Energy Transition ?

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1. **Fossil-Dependent Jobs-** The shift away from fossil fuels may result in job losses, which can be disruptive for affected communities and workers. **For ex-** Job losses in the coal production sector.

2. **Cost and Infrastructure-** The initial cost of transitioning to renewable energy is very high. The availability of land for renewable projects has also been one of the major challenges in India's energy transition.

3. **State's expenditure on Welfare Programmes-** Government's focus on welfare programmes such as healthcare, education, and housing assistance, etc has limited its capacity to invest in new energy infrastructure and technology.

4. **Energy Storage-** Power generated through solar and wind energy is intermittent and poses challenges in grid stability and load balancing. India lack's the storage technology like stro for renewable energy.

5. **Transmission Networks-** India lacks a robust transmission network capable of handling intermittent and decentralised energy sources, which is crucial to maintaining grid stability and reliability.

Conclusion and Way Forward

1. **Systematic Identification of States' Potential-** States with the potential of contributing to RE installations and the 2030 clean energy transition goal need to be identified and leveraged systematically. For ex- Geothermal energy being explored in Ladakh.

2. **Increased private investment in R&D in renewable sector-** India should draft policies to attract more FDI in renewable energy sector, which will help in the development of better storage cells and transmission sector.

3. **International Support and global Cooperation-** India must use fora like ISA, Global Biofuel alliance to mobilise international capital and technical expertise for the renewable energy sector.

4. **Alternate Livelihood Opportunities-** People employed in fossil fuel based energy systems (coal mines, power plants etc.) will be losing their jobs as a result of energy transition. They will need to be retrained and provided with new employment opportunities as quickly as possible.

5. **Proper planning and monitoring-** Realistic transmission and Renewable Energy project planning coupled with regular monitoring and remedial actions are needed to achieve the targets.

Energy Transition is the most vital aspect of shift towards green and sustainable economic systems. However, there are several challenges that may derail the transition. There is a need for greater efforts in terms of financial support and technology sharing to ensure that the process of energy transition is equitable and least disruptive.

> **Source-** The Hindu
> **Syllabus- GS III Infrastructure**: Energy; GS III, Conservation.

Development distances among Indian states- Explained Pointwise

Large development distances among Indian states has been a major challenge for inclusive development in India. While the 1991 structural reforms addressed the policy and regulatory framework at the national level, India needs another set of structural reforms at the state level to reduce the large development gap among the states.

What is the status of Development Distance among Indian states?

Development Distance- There are very large differences in levels of development across Indian states. These differences are larger than those among different countries of Europe. **For example-** Haryana's per capita income is

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five times that of Bihar. Life expectancy in Kerala at 75 years, is ten years longer than 65 years in Uttar Pradesh (UP). Enrolment in higher education is over 51% in Tamil Nadu, compared to less than 15% in Bihar.

What are the factors behind the large Development Distance among Indian states?

1. Historical Factors- The British government and industrialists concentrated their development efforts on regions with significant potential for thriving manufacturing and trade. Thus, the coastal states which included port cities like Bombay, Calcutta and Madras, witnessed disproportionate development as compared to hinterland states.

2. Geographical Factors- The challenging landscape characterized by flood-prone areas, hilly terrain, rivers, and dense forests results in elevated administrative and developmental project costs. Hence, the Himalayan states such as Himachal Pradesh, Northern Kashmir, Uttarakhand, and the North-Eastern states have predominantly lagged behind in development due to their inaccessibility and other inherent challenges.

3. Location Specific Advantages- Due to some locational advantages like availability of irrigation, raw materials, market, port facilities, some regions get special favour in respect of site selections of various developmental projects. **For ex-** Location of oil refineries in states like Maharashtra, Gujarat.

4. Early Mover Advantage- New investment in private sector has a general tendency to concentrate much on regions with basic infrastructural facilities. Term-lending institutions and commercial banks tend to concentrate investments in the relatively more developed States.

5. **Failure of Planning Mechanism-** The one size fits all approach, poor implementation of plans, lack of planning capacity at state level have increased the development distance among the states.

6. Restricted Success of Green Revolution- The benefits of the Green revolution was restricted mainly to the states of Punjab and Haryana. The states of Bihar and UP could not reap its benefits.

7. Law and Order Problem- Extremist violence, law and order problem, have all obstructed the flow of investments into backward regions. These have also led to the flight of capital from backward states.

Why is the Development Distance a challenge?

1. Increasing development distance- The development gap between the southern and western states (Tamil Nadu, Karnataka, Kerala) and the BIMARU states (Bihar, Jharkhand, Madhya Pradesh, Chhattisgarh, Rajasthan, UP and Uttarakhand) is diverging instead of converging, presenting a challenge to inclusive growth.

2. Challenge to the National Unity- The BIMARU states hold a significant demographic sway, accounting for more than 40% of India's population. This demographic strength translates into a substantial representation of Members of Parliament (MP) in the Lok Sabha, creating a notable political influence. The increasing divide between the economic influence of the developed states and the political influence of the BIMARU states, can lead to the political fragmentation of the country.

Read More- North-South Divide- Explained Pointwise

3. Social Inequality- Economic disparities contribute to social inequalities, leading to issues such as unequal access to education, healthcare, and basic amenities. Unequal opportunities can exacerbate social divisions based on caste, class, and gender, hindering social harmony.

4. **Environmental Concerns-** In an effort to catch up, lagging states often undertake unsustainable developmental projects that are not aligned with the carrying capacity of the region. For ex- Hydropower plants and road infrastructure in the ecologically sensitive hilly areas.

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How can the Development Distance be turned into an opportunity?

1. **Applying the 'flying geese' paradigm-** Flying geese paradigm refers to the situation where geese following in line learn lessons from the geese ahead in line, culminating in a single leading goose. Hence, the lagging states must learn their lessons from the leader states to culminate India into a single leading goose.

2. **Different reform priorities for different states-** States need to prioritize reforms in areas where they are lagging. The reforms undertaken must not be prioritized in some overarching sense, but at the level of individual sectors or services, based on comparative advantage.

3. **Adoption of location specific targeted action-** Location specific targeted action is required in less prosperous regions to ensure a minimum acceptable level of prosperity. **For ex-** Drought Area Development Programme, Hilly Areas Development Programme.

4. **Invigoration of Civil Society-** Collaboration with civil society organisations/ NGOs in backward regions to develop social and human capital can also help reduce the development distance between the states.

Large development differences across Indian states pose challenges as well as opportunities. The opportunities must be leveraged to overcome the challenges. State level political leaderships must develop the necessary vision and humility to learn reform lessons from other states.

Read More- Livemint
UPSC Syllabus- GS III- Indian Economy- Inclusive growth and issues arising out of it

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Social Audit in MGNREGA & MGNREGA Challenges- Explained Pointwise+ Infographic

Social Audit in MGNREGA is a crucial element for ensuring success of the programme. Currently, its implementation is monitored by the Management Information System (MIS) on Social Audit, maintained by the Ministry of Rural Development (MoRD). The recently released data by the MIS on Social Audit sheds light on the progress and challenges of social audit in MGNREGA.

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Social Audit in MGNERGA

Social Audit in MGNREGA- Social audit is the inbuilt anti-corruption mechanism in the MGNREGA Act, 2005. Section 17 of MGNREGA mandates the Gram Sabha to monitor the execution of works under MGNREGA. It empowers the citizens and helps in ensuring accountability and enhancing transparency in the implementation of the scheme.

Status of Social Audit

» Kerala is the only state to achieve 100% social audit status

» Only 6 states(Kerala, Bihar, Gujarat,J&K, Odisha &UP) have conducted social audits in more than 50% their Gram Panchayats

Audited panchayats

Kerala is the only State that has completed social audits of all activities done under MGNREGS in each of its Gram Sabhas

Map shows % of gram panchayats audited nationally for MGNREGS activities in FY24

Odisha

- 0-20%   20-40%
- 40-60%   60-80%
- 80-100%

Kerala

Source: Union Ministry of Rural Development (as of November 10, 2023)
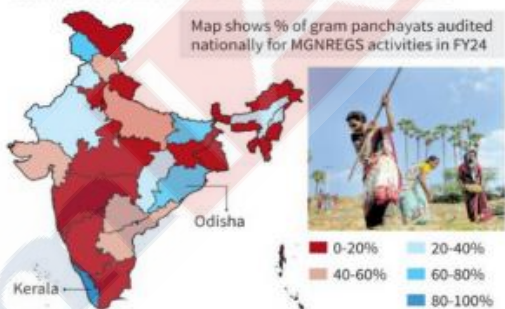
Social Audit Challenges

» Limited financial resources hinder the ability of Social Audit Units (SAUs) to carry out effetive Social Audit.

» Lack of proper protection and support mechanism for Whistleblowers and social auditors.

» Lack of proper coordination and follow-up action between the implementing agencies and Social Audit Units (SAUs).

Way Forward

» Increase the guaranteed days of work under MGNREGA from 100 days to 150 days

» Ensuring proper social audits and placing the audit reports in the public domain every year.

» Consultation with the local stakeholders to include local area-specific works as per the local needs.

» Increase in the MGNREGA wage rates commensurate with inflation

» Compensation to the beneficiaries in case of delays in wage payments

Challenges to MGNREGA

» Insufficient Fund allocation and delay in devolution of Funds to the States

» Gender based Discrimination like delays in the issue of Job Cards to women

» Regular delays in wage transfer and no provision for compensation for delayed wages

» Over centralisation and neglect of local area specific infrastructure needs

For More Detailed Reading - 7 PM Article Link

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What is MGNREGA? What is Social Audit in MGNREGA?

MGNREGA- The Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) is the legal framework that enables the implementation of the Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS).

MGNREGS- The MGNREGS, launched in 2005 by the Ministry of Rural Development, is one of the largest work guarantee programmes in the world. It gives the right to work to the rural poor. Under MGNREGS a total of 11.37 Crore households availed employment and a total of 289.24 crore person-days employment has been generated (till 15th December 2022).

Objectives of MGNREGS

> 1. Providing at least 100 days of guaranteed wage employment in a financial year to rural households whose adult members volunteer to do unskilled manual work.
> 2. Strengthening the livelihood resource base of the poor.
> 3. Proactively ensuring social inclusion
> 4. Strengthening Panchayati Raj Institutions (PRIs)
> Read More- MGNREGA

Social Audit in MGNREGA- Social audit is the inbuilt anti-corruption mechanism in the MGNREGA Act, 2005. Social Audit is the examination and assessment of a programme/scheme conducted with the active involvement of people and comparing official records with actual ground realities.

Significance of Social Audit in MGNREGA
1. Quality checks of infrastructure created under the MGNREGA.
2. Checks on the financial misappropriation in wages.
3. Checks on procedural deviations.
4. Empowerment of the local communities by involving them in the audit process.

Legal Framework of Social Audit in MGNREGA

> 1. **Legal Basis-** Section 17 of the Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) mandates the Gram Sabha to monitor the execution of works, providing a legal basis for social audits.
> 2. **Social Audit Rules-** Mahatma Gandhi National Rural Employment Guarantee Audit of Schemes Rules, 2011, were developed by the Ministry of Rural Development in collaboration with the Comptroller and Auditor General (CAG) of India. These rules outline the procedures for social audits and the duties of various entities, including the Social Audit Unit (SAU), state government, and field workers of MGNREGA, to be followed nationwide.
> 3. **Autonomy Provisions-** Social audit units operate independently of the implementing authorities, ensuring an unbiased evaluation of the programs. To ensure the autonomy of Social Audit Units, they are entitled to funds equivalent to 0.5% of the MGNREGA expenditure incurred by the state in the previous year.
> 4. **Penalty-** The Centre has the authority to withhold funds allocated under MGNREGS, in cases where states fail to conduct regular social audits.

Progress of Social Audits in MGNREGA according to MIS Data on Social Audit
1. **Only 6 states have surpassed the 50% mark** in completing social audits of works done under MGNREGS in gram panchayats.

2. **Kerala** is the only state to have achieved 100% coverage of gram panchayats in social audits.

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3. Five other states, apart from Kerala which have surpassed the 50% mark in social audit coverage are **Bihar (64.4%)**, **Gujarat (58.8%)**, **Jammu and Kashmir (64.1%)**, **Odisha (60.42%)**, and **Uttar Pradesh (54.97%)**.

What are the Challenges in Implementation of Social Audit in MGNREGA?

1. **Limited Financial Resources-** Social Audit Units (SAU's) ability to carry out thorough and effective audits has been compromised due to limited financial resources.

2. **Political Influence-** The intrusion of political influence has hindered the impartiality of social audits. This has impacted the authenticity and objectivity of the evaluation process.

3. **Limited Awareness-** Limited awareness of the legal framework for social audits among local communities has impeded their active involvement in the process.

4. **Lack of cooperation-** Social audit process has been impeded by the lack of cooperation and coordination between the implementing authorities and the social audit units.

5. **Lack of Follow-up action-** The findings and recommendations of the social audit reports are kept in abeyance, with no follow-up action to implement the recommendations.

6. **Lack of protection and support-** The social auditors and the Whistle Blowers face threats and harassment from vested interests due to lack of protection and support mechanism.

What are the benefits of MGNREGA?

1. **Increase in rural income-** The act provides a guarantee for 100 days of employment. This adds to the rural income of the households during the lean periods when no agricultural works are required in the field. **For ex-** In Barmani village of Madhya Pradesh, MGNREGA has given a boost to rural income agrarian income.

2. **Curtailment of Distress Migration-** The scheme provides support in times of agrarian and economic distress so that the individuals are not forced to migrate into cities. **For ex-** In Bandlapalli village in Andhra Pradesh, effective implementation of MNREGA has reduced the distress migration and made the village drought proof.

3. **Women Empowerment-** MGNREGA mandates that 33% of the labour workforce must be women. The Direct Benefit Transfer (DBT) of wages into women's account has further led to their empowerment. **For ex-** In Pookkottukavu village of Kerala, MGNREGA has led to the formation of the country's largest group of trained women well-diggers.

4. **Battling Economic uncertainties like COVID-** MGNREGA has proved its vitality in providing relief to the migrants during the COVID distress. It ensured income support to the vulnerable during the pandemic. **For Ex-** During the COVID pandemic, MGNREGA worker numbers crossed the 11-crore mark in a year for the first time since the launch of the scheme in 2006-07.

5. **Revival of community assets-** The community assets of traditional water conservation structures have been revived due to MGNREGA. These have helped to mitigate water stress to an extent. **For Ex-** Revival of Johads (percolation ponds) which remained abandoned for several years in many villages of Haryana.

What are the challenges with the working of MGNREGA?

1. **Insufficient Fund allocation-** The government has not been duly allocating the budget in commensuration with the demands. **For ex-** Allocated budget of Rs. 73,000 in FY 2021-22 was 34.5% lower than the revised estimate of Rs. 1,11,500 cr.

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Further, there has been delays in the devolution of funds to the states by the centre during the peak demand period.

2. **Insufficient support mechanism-** The guarantee of the scheme to provide 100 days of employment is insufficient with unemployment rates reaching a 45-year high.

3. **Gender based Discrimination-** Various cases of discrimination against women have been reported in the implementation of MGNREGA like delays in the issue of Job Cards and less number of job cards being issued to women.

4. **Delay in wage payments-** There are regular delays in wage payments as the MoRD withholds wage payments for workers of States that do not meet administrative requirements like previous financial year's audited fund statements, utilisation certificates, bank reconciliation certificates etc. It is workers who end up being penalised for administrative lapses. Also, there is no provision for compensation in case of delay in payment despite the Supreme Court mandating it in its order.

5. **Deletion of Job Cards-** The huge administrative pressure to meet 100% DBT implementation targets in MGNREGA has led to the deletion of genuine job cards. **For ex-** In Jharkhand, there were examples of deletion of genuine job cards, which were later issued due to the intervention by civil society.

6. **Over-Centralisation and neglect of local needs-** A real-time MIS-based implementation and a centralised payment system has reduced the role and diminished the accountability of the representatives of the Panchayati Raj Institutions in implementation, monitoring and grievance redress of MGNREGA schemes. The role of Gram Sabha in recommending works, has also decreased as a result of standardisation and over-centralisation.

7. **Issues with the Online Attendance-** The National Mobile Monitoring Software (NMMS) App for real-time attendance and geo-tagged photographs of workers has been a challenge for the workers due to digital illiteracy, poor internet connectivity, limited access to smartphones etc.

What steps can be taken to improve working of MGNREGA?

1. **Implementation of the recommendations of the Parliamentary Standing Committee on Rural Development and Panchayati Raj on MGNREGA-**
a. Increasing the guaranteed days of work under the scheme from 100 days to 150 days.
b. Regular consultation with the local stakeholders to include local area-specific works as per the local needs.
c. Increase in the wage rates commensurate with inflation and linking the MGNREGA wages to Consumer Price Index (CPI)-Rural as opposed to CPI-Agricultural Labour as recommended by Dr. Nagesh Singh Committee.
d. Compensation to the beneficiaries in case of delays in wage payments, at the rate of 0.05% of unpaid wages per day for the duration of delay.
e. Ensuring proper social audits and placing the audit reports in the public domain every year.
f. State governments must comply with appointment of ombudsmen for each district who will receive grievances, conduct enquiries, and pass awards in matters of MGNREGA.

2. **Greater allocation of Funds-** The World Bank recommends allocation of 1.7% of the GDP for optimal functioning of MGNREGA. The current allocation is around 0.5% of the GDP.

3. **Involving the civil society organisations-** Civil society organisations can become developmental partners in the implementation of the scheme. **For Ex-** Support of civil society organisations like the Paani Foundation for constant monitoring and maintenance of water work under MGNREGA.

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Read More- The Hindu
UPSC Syllabus- GS II- Government policies and interventions for development in various sectors and issues arising out of their design and implementation.

Patent Regime In India- Explained Pointwise + Infographic

In recent years, significant process reforms have been implemented in patent regime in India. The reform processes mainly targeted to remove the 'capacity constraint' of the Patent regime in India in issuing patents. The government has tried to address this by providing Indian Patent Offices with adequate 'funds' and 'functionaries', thereby bolstering their capacity. As a result of these reforms, in 2022-23, India recorded 82,805 patent applications and 34,153 grants, which has been a substantial increase from 45,444 patent applications and 9,847 grants in 2016-17.

However, as the country progresses in its ability to grant patents efficiently, there are fears that a quality challenge might emerge. The focus should now shift towards ensuring that each patent granted represents a genuine and significant innovation. India needs to shift its focus from quantity to quality of the patents, to avoid the 'patent paradox' situation like China.

Patent Paradox- It is a situation, where the prevalence of low-quality patents perpetuates a cycle under which patentees are incentivized to continue filing low-quality patents. Firms engage in high volume, low-quality patenting strategies to maximize potential benefits or minimize losses from the patent system, despite the negative cash value of most patents.

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Patent Regime In India

Patent Regime in India- A patent is a form of intellectual property granted by the government to inventors. It provides the owner with the legal right to prevent others from making, using, or selling an invention for a specific period. In India, patents are governed by the Patents Act, 1970.

Advantages

>> Robust patent regime attracts greater FDI inflows from the MNCs like in the case of China

>> Helps in development of niche technologies which can be used to increase exports. Ex-COVISHIELD vaccine technology.

>> Fulfils India's obligations of implementing the international conventions like TRIPS, Berne convention and Budapest treaty

>> Promotes a culture of research and grassroot innovation like the Low cost menstrual pad manufacturing machine in India.

>> Helps in solving the contemporary social issues of climate change, poverty, hunger. Ex- Patents in the CCUS technology to solve global warming.

Challenges

>> Fear of misuse of the provision of compulsory licensing has been a major deterrent in patent development in India. Ex- Compulsory licence used by India in case of Naxavar drug developed by Bayer

>> The provisions against evergreening of patents has been a concern especially for pharma industry. Ex- Novartis drug was prohibited from patent in India on account of ever greening.

>> The abolition of Intellectual Property Appellate Board (IPAB), has created a void in the early resolution of patent dispute cases

>> Low expenditure of private sector in India on quality patent development and low commercialisation of academic patents

>> Poor implementation of the patent laws that results in patent thefts, patent violations.

Way Forward

>> Focus on improving the quality of patents, rather than quantity by learning from China's failure. Focus on reducing junk patents, developing triadic patents and avoiding the patent paradox

>> Carry out a post-facto analysis of patent quality under the aegis of the Office of Principal Scientific Adviser

>> Re-establish IPAB and empower it with more structural autonomy and infrastructure for early disposal of patent violation cases

>> Create public awareness about the economic, social and cultural benefits of patents

For detailed Reading- 7 PM Link

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What is Patent Regime in India?

Patent- A patent is a form of intellectual property granted by the government to inventors. It provides the owner with the legal right to prevent others from making, using, or selling an invention for a specific period.

Patent Regime in India- In India, patents are governed by the Patents Act, 1970.
Under the act, patents are granted if the invention fulfils the following criteria:
(a) It should be novel;
(b) It should have inventive step/s, or it must be non-obvious;
(c) It should be capable of industrial application; and
(d) It should not attract the provisions of section 3 (what cannot be qualified as patents) and section 4 (inventions related to atomic energy) of the Patents Act 1970.

Indian Patent Act of 1970 was amended to align with the Trade-Related Aspects of Intellectual Property Rights (TRIPS) Agreement of WTO. The Amended Indian Patent Act of 2005, introduced patents for pharmaceutical products.

The patent regime in India also aims to fulfil India's obligation of various conventions to which it is a signatory:

1. **Berne Convention-** Patents for Copyright
2. **Budapest Treaty-** Patents in Microorganisms
3. **Paris Convention-** Protection of Industrial Property
4. **Patent Cooperation Treaty (PCT)-** International filing of patents which grants simultaneous protection of patents across countries.
5. **Doha Declaration-** Compulsory licensing provisions in public health crisis.

What are the advantages of robust patent regime in India?

1. **Promotes a culture of research and grassroot innovation-** A robust patent regime is a basic requirement for creating a culture of research and designing innovative products suited to the local needs and demands. **For ex-** Low cost menstrual pad manufacturing machine in India.

2. **Greater foreign investment-** Robust patent regime attracts greater FDI inflows from the MNCs. **For ex-** China's patent protection regime attracted manufacturing sector FDI.

3. **Promotes exports-** Strong patent regime helps in development of niche technologies which can be used to increase exports from India. **For ex-** COVISHIELD and COVAXIN in vaccine technology.

4. **Social benefits-** Patents play a pivotal role in solving the contemporary social issues of climate change, poverty, hunger. **For ex-** Patents in the Carbon Capture, Use and Storage technologies to solve global warming.

5. **Fulfilment of India's obligations-** A strong and robust IPR regime fulfils India's obligations in implementing the international conventions of which it is a signatory, like TRIPS, Berne convention and Budapest treaty etc. It enhances India's global image.

What are the challenges in the development of a strong patent regime in India?

1. **Low expenditure by the private sector in patent development-** India spends around 0.7% of its GDP on R&D, with most of the expenditure borne by the government. Other developed countries, spend more on the R&D for product development like US (2.8% of GDP), China (2.1% of GDP), with most of their expenditure coming from the private sector.

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2. **Provisions of Compulsory licensing-** Compulsory Licensing is the grant of permission by the government to entities to use, manufacture, import or sell a patented invention without the patent-owner's consent. The fear of misuse of the provision of compulsory licensing has been a major deterrent in patent development in India. **For ex-** Compulsory licence used by India in case of Naxavar, a crucial drug for kidney and liver cancer sold by Bayer.

3. **Provisions against evergreening of patents-** Evergreening of patents is a corporate, legal, business, and technological strategy for extending / elongating the term of a granted patent in a jurisdiction that is about to expire, in order to retain royalties from them, by taking out new patents. Section 3(d) of the Indian Patent Act 1970, does not allow evergreening of patents. This issue has been a concern, especially for pharma industry, which usually relies on such strategies. **For ex-** Novartis vs. Union of India case where Novartis drug was prohibited from patent on account of evergreening.

4. **Abolition of the Intellectual Property Appellate Board (IPAB)-** The IPAB was abolished in 2021 and its functions were assigned to the country's Commercial Courts and High Courts. This has made dispute resolution cumbersome and increased the pendency of cases in the commercial and HC.

5. **Poor implementation of patent laws & poor enforcement mechanisms for patent violation-** Recent U.S. Trade Representative's Special 301 report has criticized India for having stricter patent laws along with poor implementation that discourages patent filing. India lacks strong enforcement mechanism for violation of the patents. **For ex-** Pharma sector.

6. **Infrastructure and Human resources issues-** Due to poor infrastructure and limited resources, Indian patent offices are working at suboptimal levels, leading to delays in filing and grant of patents. **For ex-** India has far less number of patent officers than US.

7. **Protection of generic medicines in India-** India has been reluctant in giving patents to foreign pharma industries to protect its generic pharma industries.

> Read More- Special 301 Report 2022: India among most challenging economies, says USTR

What should be the way ahead in developing a strong patent regime in India?

1. **Incorporating learnings from China's failure to improve the quality of patents-**
a. India must aim to reduce the number of 'junk patents' which have been on a rise in China. (Junk patents- Which do not contribute to substantial innovation)
b. India must aim for development of triadic patents, which can be filed in major tech markets of Japan, the US and Europe. Chinese patents lack the triadic filing quality.
c. India must ensure that the academic patents are commercially used. In China just 8.4% of academic patents were used commercially, contrasting with 40-50% in the US.
d. India should not subsidise patent development, like China does.

2. **Post-facto analysis of patent quality-** India should carry out a post-facto analysis of patent quality, under the aegis of the Office of Principal Scientific Adviser. It could assess a patent's value by the volume of subsequent citations it receives.

3. **Robust Intellectual property regime-** India must focus on making its Intellectual Property Rights regime even more robust, which in turn will incentivize more firms and research institutions to file high-quality patents.

4. **Re-establishment of Intellectual Property Appellate Board (IPAB)-** There is a need to re-establish IPAB and empower it with more structural autonomy, infrastructural, and administrative reforms for early disposal of patent violation cases.

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5. **Public awareness-** Public awareness should be created about the economic, social and cultural benefits of IPRs among all sections of society.

Read More- Livemint
UPSC Syllabus- GS 3- Issues relating to Intellectual Property Rights

Uttarakhand Tunnel Rescue Mission- Explained Pointwise + Infographic

The Uttarakhand Tunnel Rescue mission has been the longest rescue operation conducted in India. 41 workers were trapped inside the collapsed Silkyara tunnel since November 12, 2023. The rescue operation lasted for almost 17 days. It was a test of grit and perseverance – for men on both sides of the 57 metres of debris – as the rescue operation suffered one setback after another. Finally, the mission ended in a success with the safe evacuation of all 41 workers.

Uttarakhand Tunnel Rescue Mission

Uttarakhand Tunnel Rescue Mission- The Uttarakhand Tunnel Rescue mission has been the longest rescue operation conducted in India. 41 workers were trapped inside the collapsed tunnel since November 12, 2023. The rescue operation lasted for more than 400 hours. Finally, the mission ended in a success with the safe evacuation of all 41 workers.

Process Followed

» First Attempt- Heavy earth-moving machines were used to remove the rubble, but the attempt was unsuccessful

» Second Attempt- Auger drilling machine was operationalised. However, it kept breaking down as the rubble consisted of metal rods, pipes and girders from the tunnel roof.

» Final Attempt- Auger machine failed, with 10 metres of rubble to be cleared. Finally, rat-hole mining technique was employed to clear the rubble and reach to the other end of the tunnel. The trapped workers were then pulled out by the NDRF personnel.

Way Forward

» Detailed geotechnical studies like the petrographic analysis needs to be conducted and incorporated in the design and the construction of the tunnel project

» Regular site visits of an independent specialist geologist must be conducted to check for probable failures and to determine the rock's stand-up time.

» Supports of the tunnel like shotcrete, rock bolt, steel ribs and tunnel pipe umbrella need to be properly tested for its adequacy to prevent tunnel collapse.

» Deployment of NDRF personnel, proper safety equipments to ensure safe evacuation and detailed EIA studies must be conducted before taking up the infra projects in the fragile Himalayan region.

Lessons

» India's jugaad capabilities were demonstrated with the involvement of the most marginalised and deprived rat hole miners playing a crucial part in the mission.

» Co-opting Indigenous expertise in Disaster Management like the rat-hole miners in this case.

» Thrown the spotlight on the safety of the invisible migrant workers after COVID-19.

» Attention on the huge environmental risks that the government has been taking by building poorly engineered infrastructure in the fragile Himalayan ecology

» Effective inter-agency co-ordination which can serve as a blueprint for future disaster management missions.

For detailed Reading- 7 PM Link

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How did the Uttarakhand Tunnel Rescue Mission Unfold?

While efforts for rescuing the trapped workers continued, a system of supply of food and water through a pipe was set up for them. A communication system was also established to keep the spirits of the trapped workers high.

Sequence of Attempts of the Uttarakhand Tunnel Rescue Mission

1. First Attempt	The use of Heavy earth-moving machines to remove the rubble was unsuccessful.
2. Second Attempt	An Auger drilling machine was operationalised. The first low-power Auger was replaced with one that had a higher capacity, which was airlifted to the site by the Air Force. However, the auger kept breaking down, as the rubble being drilled was littered with metal rods, girders and pipes from the tunnel roof that had collapsed from the cave-in
Simultaneous Planning of other methods	Five more plans were put in place -two sites for vertical drilling, an additional site for a horizontal tunnel, a drift inside the tunnel and opening the tunnel from the Barkot end. All these options, were carefully calibrated and sequenced, to not sabotage the functioning of the auger machine boring.
3. Third Attempt	The Auger machine failed, with 10 metres of rubble to be cleared. Finally, the task was entrusted to the rat-hole miners, who toiled non-stop for 27 hours, in claustrophobic confined spaces to emerge at the other end.
4. Final leg	The final leg of the rescue operation, which involves taking the men out one by one, was handled by personnel of the National Disaster Relief Force, with their state counterparts providing support.

Effective Coordination between different agencies- 652 government employees were deployed in the rescue operation that lasted 17 days. Seven government agencies including the Prime Minister's Office, ONGC, National Disaster Management Authority (NDMA) and armed forces were all involved in the rescue mission. This mission involved a range of experts, from international experts to the rat-hole miners, who proved to be crucial in the mission.

> **Read More-** Uttarakhand Tunnel Collapse- Explained Pointwise
> Rat-hole mining

What lessons can we derive from the Tunnel Rescue Mission?

1. **Example of India's jugaad capabilities-** Unlike the highly paid and trained British, Australian and Irish divers who played the lead role in the Thai cave rescue, the hazardous last-mile operation at Silkyara was carried out by the most marginalised and poorest workers in the Indian labour chain.

2. **Co-opting Indigenous expertise in Disaster Management-** The capabilities demonstrated by rat-hole miners at Silkyara has made a case for their co-option into the standing institutions of state disaster management.

3. **Spotlight on the safety of the invisible migrant workers –** The Uttarakhand tunnel rescue mission has once again turned the spotlight on the plight of the invisible migrant workers. The last time they drew the nation's attention was because of their travails during the lockdown in the pandemic.

4. **Need to protect the fragile Himalayan ecosystem-** The Uttarakhand rescue mission has refocussed our attention on the huge environmental risks that the Centre and state governments have been taking in indiscriminately building largely unneeded and poorly engineered infrastructure in the fragile Himalayan ecology.

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5. **Inter-agency co-ordination-** The rescue mission involved multiple agencies like the NDRF, ONGC, armed forces, state agencies, which showed remarkable inter-agency co-ordination under the aegis of the PMO. This effective co-ordination can serve as a blueprint for further disaster management missions.

What should be the way forward to ensure safe tunnel construction?

1. **Detailed geotechnical studies-** Currently, in India the design and construction of a tunnel project is done simultaneously. More detailed geotechnical studies like the petrographic analysis (geological analysis of the rock structure and strength), needs to be done to incorporate in the design and the construction of the tunnel project.

2. **Regular monitoring by specialist geologist-** Regular site visits of an independent specialist geologist must be conducted to check for probable failures and to determine the rock's stand-up time. (Rock-stand up time- It is the duration for which a rock can remain stable without any support. Support is given to the rock within its stand-up time.)

3. **Supports provided to the tunnel must be tested for adequacy-** Supports of the tunnel like shotcrete (sprayed concrete that works as a membrane to prevent parts of the rock from falling), rock bolt (a long anchor bolt for stabilising rock excavations), steel ribs and tunnel pipe umbrella need to be properly tested for its adequacy to prevent tunnel collapse.

4. **Arrangements for safe evacuation in case of collapse-** There must be deployment of NDRF personnel & proper safety equipments to ensure safe evacuation in case of any mishap. The construction companies must submit a safety plan along with the bid for the projects.

5. **Detailed EIA studies-** Detailed EIA studies must be conducted before taking any major infrastructural projects in the fragile Himalayan region. The 10-year-old notification waiving environmental impact assessments for projects of less than 100 km must be reconsidered, as this waiver of EIA can be misused by breaking up bigger projects into smaller ones.

Read More- The Indian Express 1, The Indian Express 2
Syllabus- GS Paper 3 Disaster and Disaster Management

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