

Forum IAS

7 PM COMPILATION

16th to 31st May, 2022

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**
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Battery Swapping Policy: Provisions, Benefits and Challenges – Explained, pointwise

Introduction

NITI Aayog has released draft battery swapping policy, keeping all the inputs provided by relevant stakeholders in consideration. This comes after the Finance minister had announced in the Union Budget 2022-23 that the government will be introducing a battery swapping policy. The policy has been formulated with the aim to promote adoption of EVs (Electric Vehicles) by enabling an effective, safe and reliable battery swapping ecosystem across India.

What is the background?

India is on the cusp of an e-mobility revolution led by the two-wheeler (2W) and three-wheeler (3W) vehicle segments. 2Ws account for 70-80% of all private vehicles, and 3Ws play a critical role for public transit, freight transport and last mile connectivity in cities. While the upfront costs of EVs are typically higher than internal combustion engine (ICE) counterparts, operation and maintenance costs over their lifetime tend to be lower. Government has launched several supporting initiatives such as the Faster Adoption and Manufacturing of (Hybrid &) Electric Vehicles in India (**FAME**) I and II to promote EVs.

Further, there is a **National Programme on Advanced Chemistry Cell (ACC) Battery Storage (NPACC)** to boost indigenous battery manufacturing capacity.

EVs are **traditionally purchased with “fixed” batteries** which can only be charged using the power supply while housed within the EV. Several bottlenecks related to charging of batteries act as a hurdle in adoption of EVs.

Challenges to Adoption of EVs

Certain critical challenges are limiting the adoption of EVs. Control had undertaken a global survey to estimate the ‘tipping point’ the threshold where the consumer will **shift their preference** from Internal Combustion Engine (ICE) based vehicles to EVs.

1 Cost

- 62% consumers feel EVs are out of their budget.
- In India, the ‘tipping point’ of cost is **₹55,38,000** i.e., the consumers will shift to EVs when their price falls below this threshold.
- The Global ‘tipping point’ is **₹53,26,000**.

2 Charge Time

- ICE vehicles can be refueled in matter of minutes.
- 88% consumers say ‘charging time’ is important buying parameter. Current systems can take hours to charge.
- In India, the ‘tipping point’ for charge time is **25 minutes** while global average is 21 minutes.
- New generation chargers that can charge within 30 minutes are becoming more affordable.

3 Range

- 73% consumers say the distance EV can travel between successive charges (range) is an important factor.
- In India, the ‘tipping point’ for range is **400 kms**. The Global average is 469 kms.
- Present range of most EVs is ~350 kms.

4 Charging Infrastructure

- 64% consumers say they’ll shift to EVs if there is charging infrastructure to meet their driving habits.
- Charging infrastructure might emerge as the most critical bottleneck. High charge time would mean longer waiting time, which will reduce adoption.

What is Battery Swapping and its advantages?

Battery swapping is an alternative which involves exchanging discharged batteries for charged ones and provides flexibility to charge them separately. (Battery-as-a-Service model).

Cost Benefits: While battery swapping involves a greater number of batteries than conventional batteries, each **swappable battery can be smaller in capacity** (kWh) which reduces the cost.

Reduces Charging Time: With existing technologies for e-2Ws and e-3Ws, regular charging takes at least 3 to 4 hours, adding to inconvenience and creating range anxiety. Whereas, **battery swapping is done in minutes**, as the batteries are pre-charged in swapping stations.

Less Space: Charging stations require more space, since vehicles need to be parked next to the chargers during the charging process. Battery swapping is a relatively quicker exercise and swapping stations will **require limited parking**. This would address space constraints in urban areas.

What are the key provisions of the draft Battery Swapping Policy?

General Requirements: This Policy stipulates the **minimum technical and operational requirements** that battery swapping ecosystems would need to fulfil.

Incentives: It highlights the possible ways through which various government agencies may provide **direct and indirect financial support** to Battery Providers (for the cost of batteries) and EV users (for the upfront cost of purchasing EVs). It proposes the development of a subsidy disbursement platform that will act as a seamless mechanism.

Battery Reuse and Recycling: BIS or other relevant organizations shall develop regulations for the minimum battery performance and durability parameters. BIS shall also develop standards for re-use or re-purposing of the batteries, keeping safety, reusability and sustainability of the business model into consideration.

Vehicle Registration: It mentioned that the registration of vehicles with swappable batteries **should exclude any battery details** in order to ensure the validity of registration when using a certified battery.

Implementation: The implementation of the battery swapping policy is proposed to take place in two phases: **(a)** The first phase will come into effect in all major metropolitans with more than 4 million population; **(b)** Major cities, State Capitals and Union Territories will be covered under the second phase, given the importance of E-2-wheelers and E-3-wheelers in such growing cities.

The Bureau of Energy Efficiency (BEE) will be responsible for the rollout of the battery swapping networks nationwide. The Central Nodal Agency is also responsible for the implementation of EV public charging infrastructure.

Other provisions: It emphasizes enabling innovation in adoption of possible business models, and de-risking the investment in required infrastructure. It also lays the groundwork to **create unique battery codes** for ACC (Advanced Chemistry Cells) batteries falling under this Policy.

What is the need for a battery swapping policy?

First, the policy will create a framework for **greater interoperability and safeguard the innovation potential** for the EV battery ecosystem.

Second, the policy will **boost the adoption of EVs in India**. This will reduce the demand of fossil fuel driven vehicles eventually reducing the import bill on oil.

Third, the policy will also help in **fulfilling India's national and international commitments** for tackling climate change as EV adoption will decarbonize the transport sector in the country.

Fourth, this policy will **encourage private sector participation in the EV sector** and boost the inflow of foreign investment in India.

What are the challenges associated with battery swapping?

First, most companies offering EVs for personal buyers have **already moved to the fixed battery model**. Any changes would require the vehicle to be re-engineered significantly, thereby entailing more investment.

Second, batteries and battery technology are the biggest cost components of a vehicle, and a key differentiators for automakers. **Standardization** of batteries will eliminate this advantage and **disincentivize automakers**.

Third, passenger vehicles are not amenable to swapping as batteries weighing 250 kg or more would be placed under a chassis that would need robotic arms and special tools. It is an exercise demanding precision, and fraught with huge investments and risks.

Fourth, battery as a service, even for E2Ws and E3Ws, faces **financing hurdles**. Autos and bikes are typically financed but when the auto frame and battery are separated to make the sale, financiers would be reluctant to fund the shell (without battery). The frame and motor still account for half of a vehicle cost but are useless without the battery, and banks cannot dispose of a repossessed frame in case of a default.

Fifth, skewed tax structures also stifle battery as a service. The GST on battery that comes with vehicle is 5%. It is 18% on batteries sold separately. This puts battery swapping operators at a disadvantage as they not only absorb half of the vehicle cost but also face a very high tax burden, thus making the business unviable.

Sixth, Many consumers in India are skeptical about battery-swapping. They fear that they might get sub-standard battery on exchange instead of company-guaranteed battery that comes with the vehicle. A survey by Deloitte found that 76% of Indians prefer charging at home. Hence, many auto sector analysts fear that adoption of battery-swapping option may remain low.

What lies ahead?

First, the GST Council should consider reducing the differential across the tax rates on Lithium-ion batteries and Electric Vehicle Supply Equipment (EVSE). This will aid in boosting EV adoption in the country.

Second, transport departments of states and UTs should establish procedures to streamline the registration of EVs at respective RTOs once the policy comes into force.

Third, Electricity consumption will be the major operating expenditure for battery charging stations (BCS) and battery swapping stations (BSS). Thus, the government should provide subsidies and concessions in this domain.

Conclusion

The policy, by and large, shows direction but due to nascent market dynamics, it lacks a constructive fixed roadmap for setting up Battery as a Service or BaaS infrastructure. However, in time, there can be further amendments to ensure a better level playing field and options for setting up an interoperable EV ecosystem with regulated tariff.

Source: [Business Standard](#), [Times of India](#), [Economic Times](#), [Down to Earth](#)

The Debate on Uniform Civil Code – Explained, pointwise

Introduction

Uniform Civil Code (UCC) is the proposal to replace the personal laws with a common law for property, marriage, divorce, inheritance and succession for all religions. Article 44 of the Constitution of India mentions that the State shall endeavour to secure for the citizens a uniform civil code throughout the territory of India. Both the Union and State Governments have the power to enact laws on issues related to marriage, divorce, inheritance and adoption etc. under the Item 5 of the Concurrent List (Seventh Schedule). The Governments of several States are contemplating on the enactment of UCC in their respective States.

What is Uniform Civil Code?

At present, several aspects of personal lives like marriage, divorce, inheritance, adoption and maintenance are governed by the personal laws. The personal laws are based on scriptures and customs of the religions and are separate for different religious communities.

Uniform Civil Code (UCC) will replace these personal laws and will bring in a uniform civil law. The uniform law will be **applicable to all the citizens** irrespective of the religion.

The demand for a Uniform Civil Code was first put forward by women activists in the beginning of the twentieth century, with the objective of women's rights, equality and secularism. The Constituent Assembly had put the UCC under the Directive Principles of State Policy (DPSP) having considered the **UCC as desirable but voluntary**.

What is the status of UCC in India?

In furtherance of the constitutional goal, Parliament enacted the **Special Marriage Act, 1954**; a civil marriage law. It didn't replace any community-specific law. It was made available to all citizens as a secular alternative. Any man and woman, whether professing the same or different religions, could opt for a civil marriage. Existing religious marriages could also be voluntarily converted into civil marriages by registration under the Act. Section 21 of the Act laid down that all couples married under its provisions and their descendants will, in regard to their properties, be governed by **the religion-neutral chapter on inheritance** in the **Indian Succession Act of 1925**. The Special Marriage Act and the Indian Succession Act together constitute a **UCC of an optional nature** for all Indians alike.

When **Goa, Daman and Diu** were liberated from Portuguese rule in the early 1960s, a Parliamentary law had provided for continued application of the Portuguese Civil Code of 1867 in those territories. Similarly, in **Puducherry**, a sizable section of citizens called Renoncants (Indians whose ancestors had during the French rule abandoned personal law) are still governed by the 218-year old French Civil Code of 1804.

However, most aspects continue to be governed by personal laws e.g., presently, there is a Hindu Marriage Act (1955), a Muslim Personal Law (Shariat) Application Act (1937), a Christian Marriage Act (1872) and a Parsee Marriage and Divorce Act (1937). Hindu Marriage Act applies to any person who is a Hindu, Buddhist, Jain or Sikh by religion.

What are the advantages of implementing the UCC?

Equality: India is a secular democracy. A common civil and personal law in India would ensure equality among all its citizens, irrespective of their religion, class, caste, gender etc..

Reduce gender discrimination: Personal laws of almost all religions are discriminatory towards women. Men are usually granted upper status in personal laws. Uniform civil code will bring both men and women at par and would reduce discrimination against women. It will promote gender equality and welfare of women.

Societal reforms: Existing personal laws are mainly based on the patriarchal notions of the society in all religions. UCC will remove such patriarchal notions by destroying their sanctity.

Simplify legal matters: UCC will simplify the cumbersome legal matters governed by personal laws. It will also help in speedy disposal of cases and reduce burden on the judiciary.

National integration: A Uniform Civil Code will eliminate the scope of politicisation of issues of perceived discrimination or concessions/special privileges enjoyed by communities on the basis of their religious personal laws.

What are the challenges in implementing the UCC?

Diverse personal laws and customary practices: There is huge diversity in the customary practices among communities across India. This makes uniformity very difficult to achieve. Further, a vast portion of personal laws lacks codification. Enforcing uniformity will interfere

with these practices. For example, Special Marriage Act, 1954 (A Secular Law) prohibits marriage between first cousins. This a common practice in some communities in India. Similarly, marriage between second cousins is more acceptable and prevalent among communities in Southern India compared to the North.

False perceptions: There are still false perceptions about the UCC among the communities. This makes a rational debate on its implementation quite difficult.

Violation of Fundamental Rights: There is an apprehension that the uniform civil code may be in conflict with the fundamental rights of freedom of conscience of free profession, practice and propagation of religions (Article 25), and the freedom to manage religious affairs (Article 26).

Political willpower: The Judiciary has asked the Government multiple times to enact a UCC. The government lacks the will to face the consequences of abolishing the personal laws of the religions and to convince the people about the benefits of UCC.

What is the Judicial view on UCC?

Mohd. Ahmed Khan v. Shah Bano Begum and Ors (1985): The Supreme Court directed the Government to enact a UCC. The SC observed that UCC will help the cause of national integration.

Sarla Mudgal v. Union of India (1995): The Supreme Court directed the Government to reflect the steps taken towards securing a UCC for the citizens of India.

Pannalal Bansilal Patil v. State of Andhra Pradesh (1996): The Supreme Court observed that while a uniform law is desirable, its enactment in one go might be counter-productive to the unity and integrity of the nation. Gradual progressive change should be brought about.

John Vallamattom and Ors. v. Union of India (2003): The Supreme Court of India held that there is no necessary connection between religious and personal law in a civilized society. Matters of secular character like marriage cannot be brought within the guarantee enshrined under Article 25 and 26.

What should be the approach going ahead?

First, major awareness efforts are needed to reform current personal laws. This should be initiated and undertaken by the communities themselves. Legal intervention should be undertaken only if a practice violates fundamental rights of citizens (especially women).

Second, the social transformation from diverse civil code to uniformity should be **gradual**. Therefore, the government must adopt a piecemeal approach and restrain implementing all aspects in single legislation. Matters related to marriage, divorce, inheritance, etc. can be dealt separately taking up one issue/matter at a time

Third, there should be an in-depth study and wider consultation involving all stakeholders including academia, constitutional experts, religious and political leadership. This will ensure better formulation and greater acceptability.

Fourth, the **Law Commission's recommendations** should be adopted.

Law Commission on Uniform Civil Code

Law Commission had released a consultation paper in August 2018 on the UCC

- a. The paper pointed out that the prevailing personal laws place **women at a disadvantage** because of discrimination.
- b. It described **dowry, triple talaq** (since declared illegal by The Muslim Women (Protection of Rights on Marriage) Act, 2019) and **child marriage** as '**social evils**'. Several of these have taken refuge as religious customs.
- c. These practices **do not conform with the basic tenets of human rights** nor are they essential to religion. Being essential to religion should not be a reason for a practice to continue if it is discriminatory.
- d. The paper called for **codification of all personal laws** by bringing in amendments.
- e. The Commission **didn't recommend a Uniform Civil Code**. The paper said, "*This commission has dealt with laws that are discriminatory rather than providing a uniform civil code which is **neither necessary nor desirable at this stage***".
- f. The Commission has recommended **harmony between Religion and Constitutionalism** in a way that no citizen is left disadvantaged on account of their religion and at the same time every citizen's right to freedom of religion is equally protected. Legislatures should consider guaranteeing **equality within communities between men and women** instead of equality between communities.

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Conclusion

UCC in its true spirit, must be brought about by making gradual changes. As recommended by the Law Commission, the focus should be on ending discriminatory practices against women, rather than enforcing uniformity. However, until that is done, the better course would be to bring about small reforms, correcting some inherent irrationality in some of the personal laws, and make them suitable for modern times. This will lay the foundation of implementing a UCC at a later date.

Source: [Indian Express](#), [Indian Express](#), [The Hindu](#), [The Leaflet](#)

[Yojana May Summary] Sustainable Economic Growth – Explained, pointwise

Introduction

Climate change has emerged as the major challenge on the developmental aspect. It negatively impacts every process of growth. As part of the efforts to achieve environmentally sustainable economic growth, the Governments must be **committed to reducing the effects of climate change**. Countries of South Asia are particularly vulnerable to changes in the climate. As per the Global Climate Risk Index', published by a global environmental think-tank, India is **amongst the top 10 most vulnerable countries** to climate change. Therefore significant measures are required to reduce greenhouse gas emissions and prevent the planet from warming much more rapidly than the predicted level.

What is the status of Climate Change as per the recent IPCC report?

The report states that human activity is 'unambiguously' to blame for more severe climate events such as heatwaves, floods, and droughts. Further attaining net-zero greenhouse gas emissions by 2050 is a must. Under all emission scenarios, the climate-critical 1.5°C temperature increase is likely to arrive a decade earlier than IPCC predicted three years ago.

The report has also predicted that **Southeast Asia** is one of the planet's most vulnerable regions to climate change. **Sea levels are rising fast**, and shorelines are retreating in coastal areas where 450 million people reside, even though Southeast Asia is expected to warm slightly less than the global average.

Read More: [The IPCC Sixth Assessment Report \(Part 2\) – Explained, pointwise](#)

What is the magnitude of vulnerability faced by India?

According to the Climate Vulnerability Index (CVO) – Assam, Andhra Pradesh, Maharashtra, Karnataka, and Bihar are highly vulnerable to extreme climate events such as floods, droughts, and cyclones. It also says that more than 80% of India's population lives in districts highly vulnerable to extreme hydro-met disasters

What are the threats posed by Climate Change?

Economic Loss: Rising seas are expected to cost **Asia's largest cities billions of dollars of damage** this decade. Changing rainfall patterns combined with rising temperatures may cause soil moisture and water retention capacity to deteriorate, affecting home and industrial water supplies and reducing agriculture production. Climate Change is a direct challenge to sustainable economic growth.

Threatening Energy Generation: Higher temperatures and the risks posed by extreme weather events, such as increased sedimentation from flooding could harm hydropower generation. This necessitates measures to deal with rising peak electrical demands.

Aggravate Vulnerability: Climate threats such as sea-level rise, rising temperatures, and extreme weather events will aggravate South Asian cities' susceptibility. The megacities of Delhi, Dhaka, Kolkata, and Mumbai will be the most affected.

Climate Refugees: The wrath of climate change may induce many people to migrate from their native lands to new countries. Thereby enhancing conflicts and igniting a global refugee crisis.

What are the challenges in tackling climate change?

Growing Demand of Heavy Industries: Heavy industries such as iron and steel, chemicals, and cement are among the highest emitters, and demand for their products is growing due to rapid urbanization and economic growth.

No Dedicated Ministry/Department: In many countries there is no dedicated department or ministry to tackle climate change. For instance, there is **no single ministry accountable** for moving India towards net-zero emissions and holistically tackling climate change. Further, many South Asian governments **lack carbon reduction policies** that would effectively decrease the severity of climate hazards.

High Dependence on Fossil Fuels: Due to its strong reliance on coal, India has emerged as one of the top greenhouse gas emitters in absolute terms. Coal will continue to dominate power generation in India for the foreseeable future.

Financial Constraints: Many nations don't have enough financial resources to do considerable investment in critical sectors such as urban infrastructure and prepare social safety nets for the most vulnerable populations.

What steps have been taken so far?

National

NAPCCC: To counter the emerging threats from climate change, India released its National Action Plan to Combat Climate Change (NAPCC). It has 8 sub missions including National Solar Mission, National Water Mission etc..

India Cooling Action Plan: It provides an integrated approach towards cooling and related areas including reduction in the cooling demand. This would help reduce emissions thereby combating global warming.

Read More: [India Cooling Action Plan](#)



Source: Ministry of New and Renewable Energy

Global

Paris Agreement: It seeks to keep the rise in global temperatures “well below” 2°C from pre-industrial times, while “pursuing efforts” to limit it to 1.5°C.

UN SDGs: These are 17 broad goals for achieving sustainable development in the society. Amongst them Goal 13 exclusively focuses on tackling climate change.

Glasgow Pact: It was adopted by 197 parties on 13 November 2021 during the COP26 negotiations. It has emphasized that stronger action in the current decade was most critical to achieving the 1.5-degree target.

Over 400 financial institutions with a combined asset value of over USD 130 trillion (through the **Glasgow Financial Alliance for Net Zero** or GFANZ) have pledged to align their portfolios to net-zero by 2030.

What further steps can be taken for mitigating Climate Change?

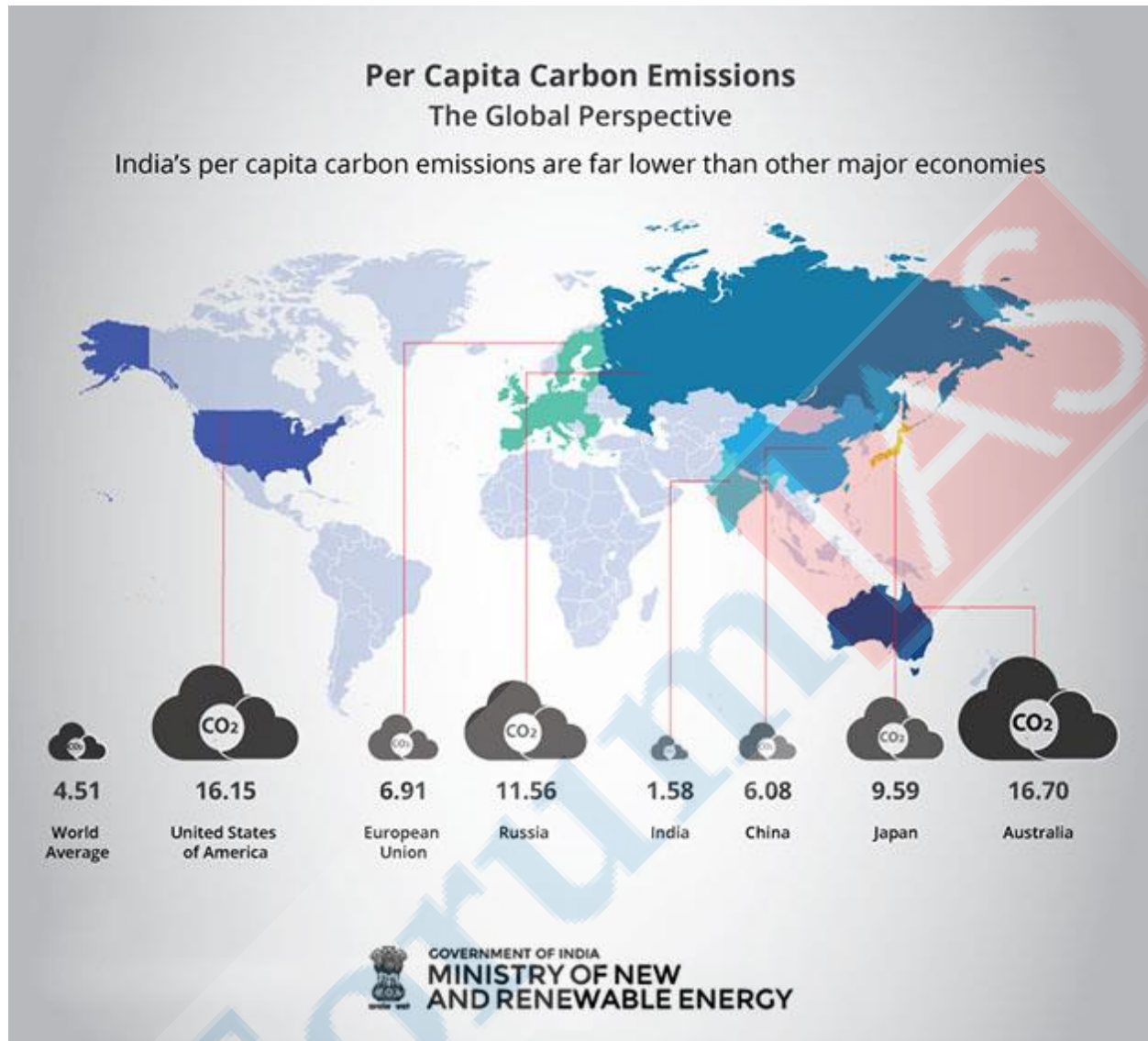
First, emissions-intensive **industries must be decarbonised**. They should be incentivized to adopt cleaner technologies like electrostatic precipitators, Coal Gasification etc. to reduce emissions. This will be the most potent step in ensuring sustainable economic growth.

Second, there is a need for more ‘**carbon sinks,**’ or **carbon-storing ecosystems** like ecosystems such as forests, oceans, and wetlands. Local communities, many of which live in harmony with the environment and rely on natural resources for livelihood, will play a critical part in this.

Third, the countries should focus on new areas like **sustainable fintech solutions**. The merging of three areas— climate, finance, and technology, is known as **sustainable fintech**. These are digital innovations, applications, and platforms that assist organizations and individuals in saving, spending, and investing in environmentally friendly ways. They also provide firms with greater tools for monitoring, measuring, and mitigating their environmental impact.

Fourth, to **lower the carbon intensity of the electricity sector**, energy efficiency must be combined with technical improvements. Parallel to this, **renewable energy production and regional energy trading** must be augmented.

Fifth, developed countries must reclaim trust by delivering the **\$100 billion promised since 2009** and committing to increasing climate finance over the next decade. They must substantially reduce their emissions to allow rising emissions by developing countries in the future years.



Source: Ministry of New and Renewable Energy

What should be the action plan for India?

First, the action plan of India should involve **more investments to raise the share of renewable energy** in power generation. Further, there should be electrification of fossil-fuel-dependent businesses, commercial production of green hydrogen, and promotion of electric vehicles.

Second, the country has to use **biofuels and do carbon sequestration**, deploy lower carbon energy, and make itself more sustainable in its energy production process. This strategy would not only open up enormous employment opportunities but also make the country leap forward on a **sustainable development path**.

Third, a **district-by-district climate action plan** is essential because most Indian districts are vulnerable to extreme weather occurrences. Further, according to the Council on Energy, Environment and Water (CEEW) report, only 63% of Indian districts have a District Disaster Management Plan.

Fourth, India must collaborate with other countries to **establish a Global Resilience Reserve Fund**, which could function as a form of climate insurance.

Conclusion

There is a need to re-orient short, medium, and long-term environmental targets in order to duly tackle climate change and achieve sustainable economic growth. In case of India, the Ministries of New and Renewable energy (MNRE), Environment, Forest and Climate Change (MoEFCC), and the Ministry of Heavy Industries will be the nation's driving engine to ensure an uninterrupted growth trajectory.

Source: Yojana May 2022

Preparing for the Next Pandemic – Explained, pointwise

Introduction

Several experts and leaders like Bill Gates have announced that the threat of COVID-19 has receded. However, others, including the Center for Forecasting and Outbreak Analytics in the US, have warned that the world will see another pandemic—only that the pathogen will be different. In such a scenario every country should take proactive measures to develop a high degree of resilience against a future pandemic. Failure to do so would increase the vulnerability of the whole world to a pandemic similar to COVID-19.

Why is it imperative to be prepared for the next pandemic?

In recent history, and noticeably after the **Second World War, pandemics have surfaced regularly** almost every 10 years like the Asian flu, the Hong Kong flu, cholera, Severe Acute Respiratory Syndrome (SARS), HIV/AIDS, swine flu, middle east respiratory syndrome (MERS), ebola and then the deadly COVID-19. Given the **frequency and the almost predictable return of strange new pathogens**, pandemics have been fairly regular events (and not rare events). Therefore, the health systems must be prepared for the next pandemic.

Similarly, the recent outbreaks in Shanghai and a suspected case of a new variant in Mumbai are concerning events. Thus, it is important for us to keep track of the 'variants of interest' and the 'variants of concern'.

What have been the learnings from the COVID-19 Pandemic?

First, developing **herd immunity is crucial** for duly tackling the pandemic. There is a need of upwards of 70%, preferably 80%, of the population to be fully vaccinated for herd immunity to set in.

Second, shortage of doctors, along with stock-outs and lack of hospital beds led to the **enormous loss of life across the country**. The WHO stated that India accounted for over 31% of all 'excess deaths' globally in the two covid-19 years of 2020 and 2021.

Third, countries also learnt that **wide-spread lockdowns can never be the solution**. They are draconian and only provide a feel-good factor by flattening the curve for a while. The number flares up eventually and become unmanageable. Lockdowns also cause enormous economic hardships, reverse migration, and stock-outs of essential drugs, including lifesaving oxygen cylinders.

Fourth, **animal to human transmission is now seen as a major threat**. It is estimated that 75% of new infections come from animals and that there are upwards of 5 lakh animal viruses lurking around. Only 250 of those have yet made the lethal jump to human populations.

What are the vulnerabilities faced by India in tackling the next pandemic?

Poor Vaccine Coverage: India has only managed to fully vaccinate just under 63% of its population. The speed of vaccination has decreased considerably. The sense of urgency seems to be missing in the Government as well as the public. Raising the coverage to 70% seems difficult and therefore the vulnerability to another wave remains high. Further, the world wide average

for those who have taken a booster shot is 24%. However, in India, not even 2% of the population has been given a booster shot.

Vaccine hesitancy is also one of the prominent reasons behind low vaccine coverage in India.

Broken Healthcare Systems: The World Health Organization (WHO) has recommended 44.5 skilled healthcare workers per 10,000 people. India's health workforce is less than 11 per 10,000. Further, there is shortage of hospitals and medicines in many parts of the country.

Even after opening all the 157 medical colleges and 50 nursing colleges that the government has promised, experts believe that there will be a woeful shortage of the healthcare workers in 2030.

Data Discrepancies: The Medical Council of India says that India has close to 1.2 million doctors. However, the Periodic Labor Force Survey data (2018-19) released by Government shows that there are only 9 lakh doctors, including the Ayurveda and Unani practitioners. Similarly, the Nursing Council of India claims that there are 2.3 million nurses and midwives. However, PLFS puts this figure to 8 Lakh only.

The lack of data has also resulted in the recent controversy related to the actual number of deaths due to COVID-19 in India. Lack of surveillance and quality data is major bottleneck in predicting the onset of a next pandemic.

Why is India facing a shortage of Healthcare personnel?

First, not all medical graduates join the workforce. Some graduates go on to study further, while some just drop out to pursue other careers.

Second, a large number of women medical graduates opt out in a **patriarchal society** because of the difficulty in juggling between careers and responsibilities at home. More than 50% of students in medical colleges today are women, but only about 17% of practicing allopathic doctors are female.

Third, a significant number of Indian graduates find their way to **other markets**, both in the developing and the developed parts of the world.

What should be the approach going ahead?

First, Governments, everywhere, and at all levels, must enable **data registers and notifications** that can quickly aggregate information and send to central databases.






Second, countries should focus on **developing robust surveillance, testing, distancing and quarantining facilities** to contain the virus spread. For instance, constant tracking, tracing and surveillance allowed Wuhan to contain the COVID-19 spread within 100 days in 2019-2020.

Third, the health gap i.e the differential access to health care between the rich and the poor must be reduced. With the enormous attention that health systems have received during the last two years, it is very much possible for **states and governments to ramp up expenditure** on healthcare.

Fourth, comparing genome sequences from across continents should be facilitated. Active and passive surveillance must be carried out, especially in border settlements where human beings come in contact with animals from the wild. WHO has for long been maintaining and encouraging cross border cooperation in this regard.

Fifth, governments need to work diligently on **communication programmes that educate the public** on the need for sanitation, distancing and hygiene. The importance of heeding warnings and alarms when they are sounded needs to be stressed as well.

Sixth, there is need for **enhanced global cooperation** in tackling the pandemic. The politics over TRIPS waiver has resulted in huge vaccination gap, which makes the whole world vulnerable to a future outbreak.

PANDEMIC PREPAREDNESS CHECKLIST FOR APEC				
Planning actions	Description	Essential	Desirable	
 Preparing for a health emergency	Economy-specific pandemic response plan	Contains an overview of the economy's health system capacity to manage the pandemic and core capacities to manage risks to health and food security; identifies the main implementing authority and supporting agencies/networks, and defines implementing processes and procedures during a disease outbreak	✓	
	Coordination mechanism	Establishes a dedicated committee in-charge of managing pandemics; employs a multi-sectoral and multidisciplinary approach with active involvement of government authorities, health practitioners, scientists, researchers, private organizations and the local community	✓	
	Communication process	Follows a communication flowchart with timelines, from notification of an outbreak to political decision-making, communication to the general public and the measures and period of implementation	✓	
	Public health resources	Government commitment to allocate resources to address any pandemic and associated costs; emergency equipment that could be readily deployed to investigate, assess and provide essential services at every stage of the pandemic	✓	
	Legal and ethical issues	Establishes legal and ethics committee to address issues related to enforcement of containment measures and travel restrictions, disclosure of personal health and travel data, etc.		✓
 Investigating and monitoring potential outbreak	Laboratory protocols	Institutes quality protocols and provides capacity building for staff; establishes a laboratory data management system	✓	
	Surveillance	Establishes timely and systematic information exchange between animal and human health surveillance units; identifies a trigger criteria to investigate zoonotic or non-zoonotic infections	✓	
	Investigation	Forms an investigation body to identify cases, source of infection, symptoms and characteristics, and clinical impact; ensures that investigation personnel have proper training and equipment; establishes protocols on infection prevention and control	✓	
	Medical provisions for members of pandemic-related committees	Maintains a supply of anti-viral drugs, vaccines, personal protective equipment, facemasks, and other medical supplies to give to committee members, particularly the investigation body, at the onset of the outbreak		✓
	Baseline data on pandemic	Manages and maintains a baseline data on pandemics, including different phases and characteristics and rate of infection via a health system capacity; measures impact of pandemic on health and economic systems, school and labor participation, etc.		✓
 Sustaining health services	Health service business continuity plan	Specifies public and private referral hospitals; establishes communication and information exchange system; identifies capacity of facilities and number of health personnel as well as supplies of medical goods and equipment; ensures continuation of health services amid a pandemic	✓	
	Management of healthcare staff	Provides appropriate and updated training to frontlines to be able to identify, manage and isolate suspected cases; develops coordination procedures that allow transfer of healthcare staff to overseas hospitals		✓
	Control spread of infection in healthcare settings	Advocates isolation and critical care units in both public and private hospitals	✓	
 Preventing further waves of outbreak	Extension of containment measures	Implements, enforces measures that support households and businesses	✓	
	Vaccination policy	Institutes a vaccination policy, informed by data and stakeholder consultations to develop a vaccination program that ensures wide access to vaccines	✓	
	Pandemic research and development, monitoring and evaluation program	Continuous research and monitoring of zoonotic and non-zoonotic diseases; establishing at least one laboratory testing site dedicated to the development of testing kits, therapeutics and vaccines		✓
	Role of community	Strengthens community prevention and mitigation through public service messages on improving personal hygiene, maintaining a healthy lifestyle, and coordinating with community-level representatives to report and/or gain information on the onset of possible infections	✓	
 Preparing for recovery	Collaboration of all sectors	Develops recovery plans and support systems; requires collaborative efforts from all levels of governments, all business across different industries, and the general public	✓	
	Support to affected sectors and vulnerable groups	Provides immediate and substantial support to affected sectors and vulnerable groups for a specified period	✓	
	Regular revision of pandemic preparedness plan	Defines a time period to regularly review and refine plans, incorporating lessons from recent pandemics and best responses; updates data on health system's capacity		✓

Source: Asia Pacific Economic Cooperation

What are India specific steps?

First, it is important to keep a ready account of the dead and the causes of their deaths. **Real time data** would enable government to bring in masking and distancing norms. If the threat becomes bigger, testing and quarantining can be made mandatory.

Second, coordination across States is essential to ease out the burden on hospital beds and intensive care units (ICUs).

Third, Imports and procurement orders for life saving equipment and vaccines must be streamlined in anticipation of a possible fourth wave.

Fourth, the Government must also provide immediate data on vaccine efficacy, new outbreaks, number of vacant ICU beds, and guide people on when to get booster doses.

Fifth, public awareness need to be enhanced to ensure that there is **no stigma attached to getting infected**. It is also necessary to ensure that adequate care taken for a large number of people who have suffered on account of mental health issues.

Conclusion

A fourth wave looks unlikely as the new strains and variants after Delta have been benign. The mortality levels of new variants have been low. However, the possibility of a new different pandemic is very real. In fact, some experts have predicted the next major pandemic within next one and half decade. Therefore, India should be duly prepared to mitigate the impact of the next pandemic.

Source: [Mint](#)

Improving Total Factor Productivity: Challenges and Way Forward – Explained, pointwise**Introduction**

India's Total Factor Productivity (TFP) growth has seen a moderate decline compared to the global experience, though it remains above that of emerging markets and developing economies. The back-to-back setbacks of the pandemic and the Russia-Ukraine war led to supply chain disruptions which has increased costs of production. It is also anticipated that there will be increase of capital outflow from India as the US Federal Reserve is expected to increase the interest rates. In such a situation, there is a need to focus on improving the TFP to reduce the costs, as well as to attract greater investment.

Understanding Key Terms

- Productivity levels measure the relationship between total products or output, and inputs or factors of production employed.
- **Labor productivity** is a measure of total output divided by the units of labor employed in the process of production
- **Total Factor Productivity** is a measure of total output divided by a weighted average of inputs; i.e. labor and capital. It measures the productive efficiency of economy as it measures how much output can be produced from a certain amount of inputs.

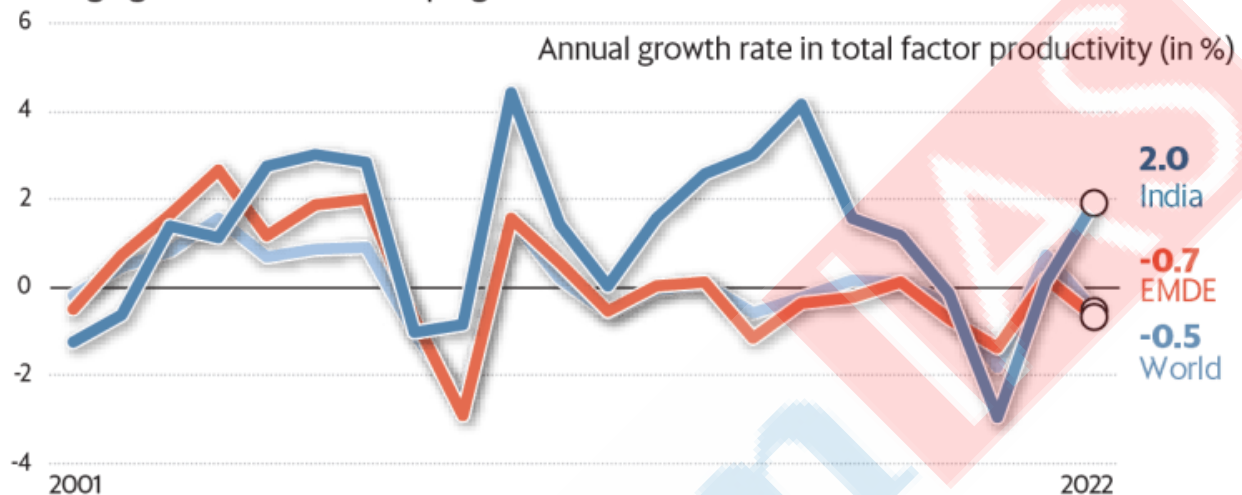
What is the trend of Total Factor Productivity (TFP) growth in India and the World?

A recent Reserve Bank of India (RBI) report points to a moderate decline in TFP growth compared to the global experience. TFP growth rate for India during the **2010-2019 period was approximately 2.2%**, as against -0.3% for emerging markets and developing economies. However, as indicated by the graph underneath, the TFP growth has been erratic, having fallen below 0% on multiple occasions.

During the pandemic, the TFP for India declined by 2.9% in 2020 and marginally improved by 0.1% in 2021. In 2022, TFP growth rate is projected to increase to 2%.

Mixed results

TFP growth rate for India for the period 2010-2019 was approx. 2.2%, better than emerging market and developing economies.



EMDE: Emerging markets and developing economies
2022 numbers are projections.

Source: Total Economy Database

Source: Live Mint

Global productivity growth has witnessed a prolonged slowdown since 2010, with the deceleration sharper in emerging and developing economies. This is ascribed to a weakening investment climate, and lower employment growth levels in developed economies, among others. TFP growth for the world economy was **0.7% in 2021** and may shrink by 0.5% in 2022.

What are the Structural Determinants of TFP Growth in India?

According to an RBI Report, Total Factor Productivity (TFP) growth can be explained through the sensitivity of the economy to **four factors**:

Capital deepening: It is represented by growth in the stock of fixed capital. Fixed capital are **assets used in the productive process**. These include Property, Plants, and Equipment. Increase in fixed capital enhances productive capacity of the economy. Greater the investments in fixed capital, greater the increase in stock, and consequently higher the increase in productivity.

Capital composition: It is represented by the average **rental price of capital** across 3 major types viz. construction, machinery and transport equipment. Capital composition has a negative relationship with TFP growth. An increase in cost of capital, such as machinery, without any significant improvement in its productive capabilities **may restrict firms from expanding its scale of operations** and technological upgradation, limiting its TFP growth. (Firms may not be ready to invest if the cost of capital is high. Lack of investments keep the scale low, and scale economies may not be realized.)

Labour quality: It is represented by an index of the composition of the labour force under five broad education categories (below primary, primary, middle, secondary & higher secondary and above higher secondary) weighted by their average annual earnings. It is expected the higher the

education levels, higher the skills of labor. A high proportion of educated, skilled labour will enhance the TFP.

Input use intensity: It is measured by the input growth. It also shows a positive association with TFP growth.

What is the need to enhance the TFP?

Optimum Utilization of Resources: Improvements in TFP shows a country is able to extract the best out of its factor inputs that results in maximization of output with minimum input i.e., less resources are used to get more output. This also enhances sustainability and reduces pressure on resource base.

Attracts Investment: TFP growth reduces the cost of production. It allows a country to attract domestic as well as foreign private investment towards it.

Improves Standard of Living: Improved TFP minimizes per-unit cost facilitating the horizontal expansion of consumption demand, thereby improving the standard of living.

Contribution to GDP: It plays a pivotal role in determining economic growth of a nation. Growth can happen by increasing resource inputs or by enhancing productivity. According to RBI estimates, TFP growth contributed to 30% of India's GDP growth during 2010-2018.

What steps have been taken to improve productivity in India?

Skilling initiatives: The Government has launched many initiatives to upskill the population which include the National Apprenticeship Training scheme, PM Kaushal Vikas Yojana etc.

New Education Policy, 2020: NEP, 2020 lays emphasis on reforms in education at all levels from pre primary to higher education. It aims to bring transformation in the education system of India in line with contemporary needs.

Labour Codes: In 2019, the Ministry of Labour introduced four labour bills to consolidate the existing 29 labour laws. These bills relate to (1) industrial relations; (2) minimum wages; (3) social security; and (4) occupational safety, health and working conditions. The labor code will address the structural impediments in India's labor market and improve labor productivity.

Infrastructure: Union Budget 2022-23 has an increased outlay for creating public infrastructure. PM Gati Shakti has been launched to streamline the process of infrastructure creation. This will remove infrastructure bottlenecks and improve productivity of the economy.

Read More: [PM Gati Shakti – National Infrastructure Master Plan – Explained, pointwise](#)

PLI Schemes: The Government has also launched PLI Schemes have the potential to create an additional production of Rs. 30 lakh crore. Incentives under PLI are expected to bring in foreign investment and technology which will boost productivity. Union Budget 2022-23 plans to create 60 lakh new jobs under the PLI schemes in 14 sectors.

Read More: [Production-Linked Incentive or PLI Schemes and its challenges – Explained, pointwise](#)

What are the challenges in improving TFP in India?

Insufficient Allocation: Various experts, committees and reports have recommended that India should allocate 6% and 2.5% of GDP to education and health respectively. However, actual allocation has been much lower.

Underutilization of Land: Agriculture has a disproportionately high share in land available for use in economic activity, despite being the least productive. Further, the 2013 Land Acquisition Act has been questioned by several stakeholders, stating that it may stall land acquisition by making the cost of land prohibitive for industry and the procedures more cumbersome.

Red Tapism and Corruption: Excessive paperwork and corruption creates delays and push up the total cost of projects thereby reducing productivity. According to the Ministry of Statistics and Programme Implementation data, the number of stalled projects has increased sharply since 2018 for projects above INR 150 crore of investment. The average cost overrun per project shows an increasing trend, touching a high of 31% of the original cost in 2020 .

Labour Issues: India has one of the lowest Labour Force Participation Rate (LFPR) among the major economies, partly due to **very low female LFPR (22%)** (WDI, World Bank), especially among poorer states. Further, there is a prevalence of **high informal employment** under which workers work on meagre wages with little or no social security. Similarly, 28% of the population is illiterate and another 26% have received only primary school education (PLFS, 2019-20). Only 9% of the population possesses a graduate/post graduate degree in India.

What steps should be taken going forward?

First, there is a need to focus on **boosting innovation and research**. Though India's ranking in the Global Innovation Index, 2021 has improved to 46, investment in R&D has remained low (<0.7% of GDP). This must be enhanced.

Second, employers are acknowledging the fact that manpower is an essential component in profit earnings and have shifted their focus on **retaining talent**. This positive transformation seen after the pandemic needs to be extended further.

Third, to combat the issue of underutilization of land, the **states should formulate their respective laws to ease the acquisition process**. Gujarat, Rajasthan, Maharashtra, Jharkhand, and Telangana have already enacted new laws. Further, for parity and distributional justice, there is a need to explore avenues for **land pooling**.

Fourth, focus should be on **raising the quality of labour** through large scale expansion of public expenditure on education, health and the skilling.

Conclusion

In a nutshell, it can be said that quality education, better healthcare, nurturing of innovation, introduction of efficient technology and processes in domestic companies and reduction in misallocation of resources can help improve TFP levels in India.

Source: [Mint](#), [RBI](#)

Amendments to the National Policy on Biofuels – Explained, pointwise

Introduction

Ethanol, or ethyl alcohol, is a hydrocarbon that when burnt can generate heat and power engines. Since two decades, India has been moving towards putting in place an ecosystem to have more ethanol blended into petrol for use in vehicles, particularly 2- and 4-wheelers. Government records suggest about 75% of India's 220 million vehicles are 2-wheelers and 12% are 4-wheelers. Another proactive step in this regard has been taken by the government by amending the National Policy on Biofuels, 2018. The amendment has advanced the date by which fuel companies have to increase the percentage of ethanol in petrol to 20%, from 2030 to 2025. The policy of introducing 20% ethanol is expected to take effect from April 1, 2023.

What has been the history of ethanol blending in India?

Since 2001, India has tested the feasibility of ethanol-blended petrol whereby 5% ethanol blended petrol or E5 (95% petrol-5% ethanol) was supplied to retail outlets. In 2002, India **launched the Ethanol Blended Petrol (EBP) Programme** and began selling 5% ethanol blended petrol in nine States and four Union Territories. It was extended to twenty States and four UTs in 2006.

In 2015, the Ministry of Road Transport and Highways notified that E5 petrol and the rubber and plastic components used in gasoline vehicles produced since 2008 be compatible with the **E10 fuel**. Since 2020, India has been announcing its intent to achieve 10% blending by the end of 2022 and 20% blending by 2030. The Centre has also targeted 5% blending of biodiesel with diesel by 2030.

What is the current status of Ethanol Blending?

According to the Ministry of Petroleum and Natural Gas, the all India average blending stands at 9.90 (as of May 2022). Letters of Intent for supply of 468.56 crore litres of ethanol were issued at the start of this Ethanol Supply Year, out of which 415.88 crore litres has been contracted and 186.21 crore litres supplied so far.

Ethanol derived from **sugarcane juice/sugar syrup** and from **C heavy molasses** forms the bulk of this supply, with that from **surplus rice and damaged food grains** being a distant second. Around 16 lakh tonnes of sugar was subsumed to produce this ethanol.

India's current ethanol production capacity consists of 426 crore litres from molasses-based distilleries, and 258 crore litres from grain-based distilleries.

What has been the international experience?

Flex Fuel Engine technology (FFE), or vehicles that run entirely on ethanol, are popular in Brazil and comprise nearly 80% of the total number of new vehicles sold in 2019. The global production of fuel ethanol touched 110 billion litres in 2019, or about an average growth of 4% year per year during the last decade.

The U.S. and Brazil make up 92 billion litres, or 84% of the global share, followed by the European Union (EU), China, India, Canada and Thailand.

What are the salient features of National Biofuel Policy 2018?

Introduced in 2018, the National Biofuel Policy is aimed at reducing dependence on imports by encouraging fuel blending.

The Policy categorizes biofuels as – **(a) “Basic Biofuels”** viz. First Generation (1G) bioethanol & biodiesel and **(b) “Advanced Biofuels”** – Second Generation (2G) ethanol, Municipal Solid Waste (MSW) to drop-in fuels, Third Generation (3G) biofuels, bio-CNG etc..

The Policy expands the scope of raw material for ethanol production by allowing use of – **(a)** Sugarcane Juice, Sugar containing materials like Sugar Beet, Sweet Sorghum; **(b)** Starch containing materials like Corn, Cassava; **(c)** Damaged food grains like wheat, broken rice, Rotten Potatoes, unfit for human consumption for ethanol production.

With a thrust on Advanced Biofuels, the National Policy on Biofuels indicates a viability gap funding scheme for 2G ethanol Bio refineries of INR 5,000 crore in 6 years. The Policy encourages setting up of supply chain mechanisms for biodiesel production from non-edible oilseeds, used cooking oil, and short gestation crops. The **National Biofuel Coordination Committee (NBCC)**, with the Union Minister for Petroleum and Natural Gas as its head, is the agency to coordinate this blending programme.

What are the recent amendments to the National Policy on Biofuels?

The most important amendment has been **advancing the 20% blending date by five years** from Ethanol Supply Year (ESY) 2030 to 2025-26.

There has been an **introduction of more feedstock for production of biofuels**. Further, production of biofuels under the 'Make in India' programme in Special Economic Zones (SEZs), Export Oriented Units (EOUs); and permission to allow export of biofuels in specific cases are some other changes. Apart from addition of new members to the NBCC, the Committee has now been given the permission to change the policy which it earlier lacked.

What is the significance of adopting Ethanol Blending of Fuel?

Reduce Import Bill: As per a NITI Aayog Committee report of June 2021, India's net import of petroleum was 185 million tons at a cost of US\$ 55 billion in 2020-21. Most of the petroleum is used by vehicles. A successful 20% ethanol blending programme could save the country US\$4 billion per annum, or about INR 30,000 crore.

Environment Benefits: Ethanol burns more completely than petrol, it avoids emissions such as carbon monoxide. One crore liters of E-10 saves around 20,000 ton of CO₂ emissions.

Health benefits: Prolonged reuse of Cooking Oil for preparing food, particularly in deep-frying is a potential health hazard and can lead to many diseases. Used Cooking Oil is a potential feedstock for biodiesel and its use for making biodiesel will prevent diversion of used cooking oil in the food industry.

MSW Management: It is estimated that, annually 62 MMT of Municipal Solid Waste gets generated in India. There are technologies available which can convert waste/plastic, MSW to drop-in fuels. One ton of such waste has the potential to provide around 20% of drop-in fuels. (Drop-in fuels are the fuels that can be used without major change in infrastructure. Ethanol blended petrol is a drop-in fuel).

What are the challenges associated with Ethanol blending?

Efficiency: It takes much more ethanol to power a vehicle's engine than petrol, therefore blending leads to a loss of efficiency. For instance, when using E20, there is an estimated loss of 6-7% fuel efficiency for 4-wheelers which are originally designed for E0 and calibrated for E10, 3-4% for 2-wheelers designed for E0 and calibrated for E10.

Harmful Residual Products: It also leaves residual by-products that can corrode and damage the vehicle.

Environmental concerns: On average, a ton of sugarcane can produce 100 kg of sugar and 70 litres of ethanol but that would mean 1,600 to 2,000 litres of water to produce 1 kg of sugar. This implies that a litre of ethanol from sugar requires about 2,860 litres of water.

Further, tests conducted in India have shown that there is no reduction in nitrous oxides, one of the major environmental pollutants.

Is the new target achievable?**Arguments in Favor:**

First, the committee report estimates that adoption of electric vehicles should partially offset demand for ethanol leading to a lesser requirement of 722-921 crore litres in 2025.

Second, the test vehicles using E20 fuel worked well in trials as per the committee report. There was not much reduction in performance and capability which should encourage its adoption.

Arguments against:

Poor Implementation: The 5% blending was started in 2002 and considerably expanded to various states and UTs in 2006. However, the proportion has remained low. e.g., the proportion of blending was 1.5% in 2013-14.

High Prices: The prices of ethanol produced in India are higher compared to the U.S. and Brazil, because of the minimum support prices that the government provides. The cost of flex fuel vehicles (4-wheelers) could cost about ₹17,000 to ₹25,000 more than the current generation of vehicles. The 2-wheeled flex fuel vehicles would be costlier by ₹5,000 to ₹12,000 compared to regular petrol vehicles.

Lack of Supply: Various experts have said that in order to achieve 20% blending, India would require a consistent supply of 1,500 crores litres of ethanol annually. This is way beyond the current production capacity.

Fund Crunch: Many cooperative sugar mills have complained about a fund crunch as banks are reluctant to finance them given their weak balance-sheets.

What lies ahead?

First, vehicles that run on ethanol need to be tuned accordingly so that they don't compromise on efficiency and usability.

Second, to compensate the consumers for a drop in efficiency from ethanol blended fuels, tax incentives on E10 and E20 fuel may be considered.

Third, a report by the Institute for Energy Economics and Financial Analysis (IEEFA) says that for India to meet its target, it will need to bring in additional 30,000 sq. km of land **under maize cultivation**. Further, half of this land can be used to produce **clean electricity from solar energy**.

Fourth, in order to tackle the fund crunch, mills have asked for tripartite agreements between Oil Marketing Companies (OMCs), banks and cane suppliers to clear payments within 21 days.

Conclusion

The amended policy is expected to yield economic as well as environmental benefits. However, to realize the benefits, the policy must be implemented effectively and the prevailing bottlenecks should be removed.

Source: [Indian Express](#), [The Hindu](#)

The State of Global Climate Report – Explained, pointwise

Introduction

According to the World Meteorological Organization (WMO's) State of Global Climate Report, 4 key climate change indicators – greenhouse gas concentrations, sea level rise, ocean heat and ocean acidification – have set new records in 2021. This is yet another clear sign that human activities are causing planetary scale changes on land, in the ocean, and in the atmosphere, with harmful and long-lasting ramifications for sustainable development and ecosystems.

About the World Meteorological Organization (WMO)

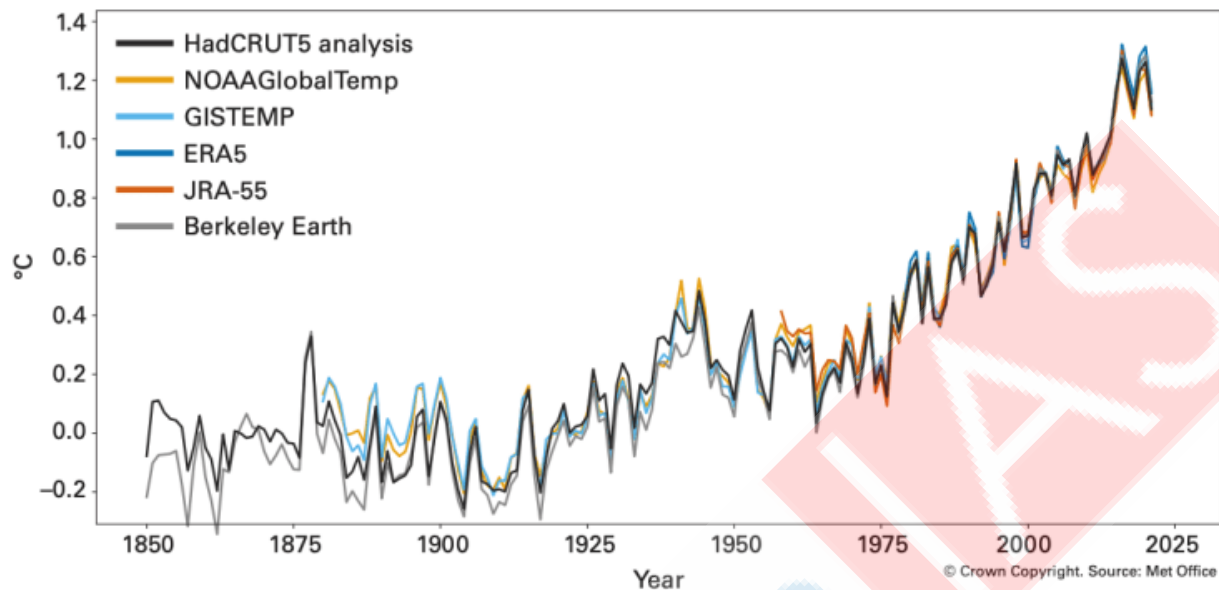
The World Meteorological Organization (WMO) is an intergovernmental organization with a membership of 193 Member States and Territories.

It originated from the International Meteorological Organization (IMO), the roots of which were planted at the 1873 Vienna International Meteorological Congress.

It is a specialized agency of the UN and headquartered in Geneva. It is responsible for promoting international cooperation on atmospheric science, climatology, hydrology and geophysics. It facilitates the 'free and unrestricted' exchange of data, information, and research between the respective meteorological and hydrological institutions of its members

What are the key findings of the State of Global Climate Report?

Average global temperature: It was about 1.11 (\pm 0.13) °C above the pre-industrial level in 2021. The report observed that the past seven years have been the warmest seven years on record.



Source: WMO

State of Global Climate Report. The image depicts 6 different global temperature data sets. It can be observed from the image that all data sets indicate global mean temperatures have risen about 1.4°C above pre-industrial condition.

Greenhouse gas concentrations: It has reached a new global high in 2020. The concentration of carbon dioxide (CO₂) reached 413.2 parts per million (ppm) globally, or 149% of the pre-industrial level.

Ocean heat: The upper 2000m depth of the ocean continued to warm in 2021 and it is expected that it will continue to warm in the future.

Ocean acidification: The oceans absorb around 23% of the annual emissions of anthropogenic CO₂ to the atmosphere. This reacts with seawater and leads to ocean acidification. As per report, there is a persistent rise in ocean acidification.

Global mean sea level: It also reached a new record high in 2021, after increasing at an average 4.5 mm per year over the period 2013 -2021. This is more than double the rate of between 1993 and 2002 and is mainly due to the accelerated loss of ice mass from the ice sheets.

Cryosphere: Although the glaciological year 2020-2021 saw less melting than in recent years, there is a clear trend towards an acceleration of mass loss on multi-decadal timescales. On average, the world's reference glaciers have thinned by 33.5 meters (ice-equivalent) since 1950, with 76% of this thinning since 1980.

Ozone Hole: The ozone hole over the Antarctic was unusually large and deep, reaching its maximum area of 24.8 million km. square (the size of Africa). The size increased as a result of a strong and stable polar vortex and colder than average conditions in the lower stratosphere.

What are the adverse impacts of rapid climate change?

According to the State of Global Climate Report, rapid climate change is going to have several adverse impacts:

First, it will **enhance the magnitude of disasters and extreme events**. Most recent cases include the drought emergency in the Horn of Africa, the deadly flooding in South Africa and the extreme heat in India and Pakistan. These extreme events inflict severe economic losses apart from taking the pristine human lives. For instance, Flooding induced economic losses of US\$ 17.7 billion in Henan province of China.

Second, some **glaciers have reached the point of no return** and this will have long-term repercussions in a world in which more than 2 billion people already experience **water stress**.

Third, **ecosystems** including terrestrial, freshwater, coastal and marine ecosystems and the services they provide, are affected by the changing climate. For instance, Coral Reefs are projected to lose between 70 and 90% of their former coverage area at 1.5°C of warming and over 99% at 2°C.

Fourth, rising sea levels have major implications for hundreds of millions of coastal dwellers and **increases vulnerability to tropical cyclones**. It also threatens the survival of coastal cities like Mumbai by **enhancing the probability of submergence**.

Fifth, it is making the **monsoon more and more erratic in nature**. This will threaten food security of India. Further, the **heat wave has scorched crops like wheat** which will directly impact the productivity of food crops.

Sixth, Hydro Meteorological hazards contribute to **internal displacement**. The countries with the highest numbers of displacements recorded as of October 2021 were China (more than 1.4 million), the Philippines (more than 386 000) and Viet Nam (more than 664 000).

What steps have been taken to tackle climate change?

National

NAPCCC: To counter the emerging threats from climate change, India released its National Action Plan to Combat Climate Change (NAPCC). It has 8 sub missions including National Solar Mission, National Water Mission etc..

India Cooling Action Plan: It provides an integrated approach towards cooling and related areas including reduction in the cooling demand. This would help reduce emissions thereby combating global warming.

Global

Paris Agreement: It seeks to keep the rise in global temperatures “well below” 2°C from pre-industrial times, while “pursuing efforts” to limit it to 1.5°C.

UN SDGs: These are 17 broad goals for achieving sustainable development in the society. Amongst them Goal 13 exclusively focuses on tackling climate change.

Glasgow Pact: It was finally adopted by 197 parties on 13 November 2021 during the COP26 negotiations. It has emphasized that stronger action in the current decade was most critical for achieving the 1.5-degree target.

What are challenges in tackling climate change?

Rising Industrialization and Urbanization: Developing countries are pushing for industrialization and urbanization as steps towards strengthening their economy. However, this also involves clearing large tracts of forests which reduces the carbon sinks.

Dearth of Early Warning Systems: Early Warning Systems are critically required for climate adaptation, and yet these are only available in less than half of WMO’s Members.

High Dependence on Fossil Fuels: Fossil fuels continue to dominate the energy mix of most countries, especially the developing countries. The situation is not expected to change any sooner, as they lack access to technologies and finance to enable green energy transition.

Financial Constraints: Many nations don't have enough financial resources to do considerable investment in critical sectors such as urban infrastructure and prepare social safety nets for the most vulnerable populations.

Lack of Political Will: Climate Change is not an electoral agenda in most countries. There is no public pressure on the leadership to undertake tangible steps to address climate change.

Opposition from Fossil Fuel Companies: Oil and Gas companies continue to aggressively lobby against strict climate action. One such instance is the Keystone Pipeline controversy in the US. The pressure has prevented governments from drafting stringent climate policies.

What should be the approach going forward?

First, the countries should **transform their energy systems** and move towards renewable energy production. There should be: **(a)** Greater access to renewable energy technology and supplies; **(b)** A tripling of private and public investments in renewables; **(c)** An end to subsidies on fossil fuels which amount to roughly \$11 million per minute.

Second, the WMO State of the Global Climate report will be used as an official document for the UN Climate Change negotiations known as COP27. More ambitious targets can be adopted at the summit especially by developed countries in the spirit of common but differentiated responsibilities principle.

Third, masses should be sensitized towards climate change by taking support of the NGOs. This would also help in creation of **Climate Change based Political Parties**.

Fourth, countries must switch to **Green GDP or Green Accounting** in order to decrease damage to the environment.

Conclusion

The State of Global Climate Report shows that there is a need to focus the efforts on bold policies and solutions that can quickly transform the way the resources are produced and consumed. People and partnerships have to be the central approach, whether it is to create new jobs, provide more access and affordability for everyone and to build a cleaner and greener living environment.

Source: [World Meteorological Organization](#), [The Times of India](#), [Frontline](#)

Drought in Numbers Report – Explained, pointwise

Introduction






The UN Convention to Combat Desertification (UNCCD) has released the Drought in Numbers report. It is a collection of data on the effects of droughts the ecosystem. The Report notes down the areas that are most vulnerable to the droughts. Some regions of India are part of this list. The Report observes that droughts are not sudden like earthquakes or cyclones and do not leave behind similar trail of damage, destruction and debris. Hence they do not receive the news or policy priority like other disasters. However they are silent killers and their impact is much more damaging in the long term. It is time that mitigating the impacts of drought be a high priority for the Governments. The report has recommendations on how the impact of droughts can be mitigated through efficient planning for the future.

What are droughts?

According to the National Oceanic and Atmospheric Administration (NOAA), Drought is generally defined as “a deficiency of precipitation over an extended period of time (usually a season or more), resulting in a water shortage.”

The NOAA notes that Drought is the ‘**absence of precipitation**’, rather than the presence of an event such as a hurricane, tornado, or fire. It’s often described as a ‘**creeping phenomenon**’ because it slowly impacts many sectors of the economy and operates on many different timescales. It is also difficult to predict and monitor—particularly when marking the beginning and end of a period of drought.

Scientists generally define 5 kinds of droughts:

FIVE TYPES OF DROUGHT	
1 METEOROLOGICAL drought refers to an extended period of dry weather patterns.	
2 HYDROLOGICAL drought refers to low water supply in our rivers, lakes, aquifers, and other reservoirs that often follows meteorological drought.	
3 AGRICULTURAL drought occurs when a water shortage significantly damages or destroys agricultural crops.	
4 ECOLOGICAL drought is the most recently defined type of drought and refers to widespread ecological damage caused by the lack of soil moisture.	
5 SOCIOECONOMIC drought refers to when a water shortage affects the supply and demand of drought commodities, such as water, food grains, and fish.	

Source: NOAA

These 5 kinds of droughts generally proceed sequentially e.g., a prolonged meteorological drought can lead to hydrological drought. A hydrological drought can lead to agricultural drought eventually transforming to socioeconomic drought in the absence of any policy action.

What are the findings of the Drought in Numbers Report?

Anthropogenic Origins: There is a strong evidence that **human induced climate change** has increased the risk of droughts. The number and duration of droughts around the world has increased by an alarming 29% since 2000.

Widespread Impact: An estimated 55 million people globally are directly affected by droughts every year. Africa was the worst hit, with 134 drought events between 2000-2019, of which 70 occurred in East Africa. The report notes that by 2050, between 4.8 to 5.7 billion people will live in areas that are water-scarce for at least one month each year, up from 3.6 billion today.

Between 2020 and 2022, 23 countries have faced drought emergencies. These are Afghanistan, Angola, Brazil, Burkina Faso, Chile, Ethiopia, Iraq, Iran, Kazakhstan, Kenya, Lesotho, Mali,

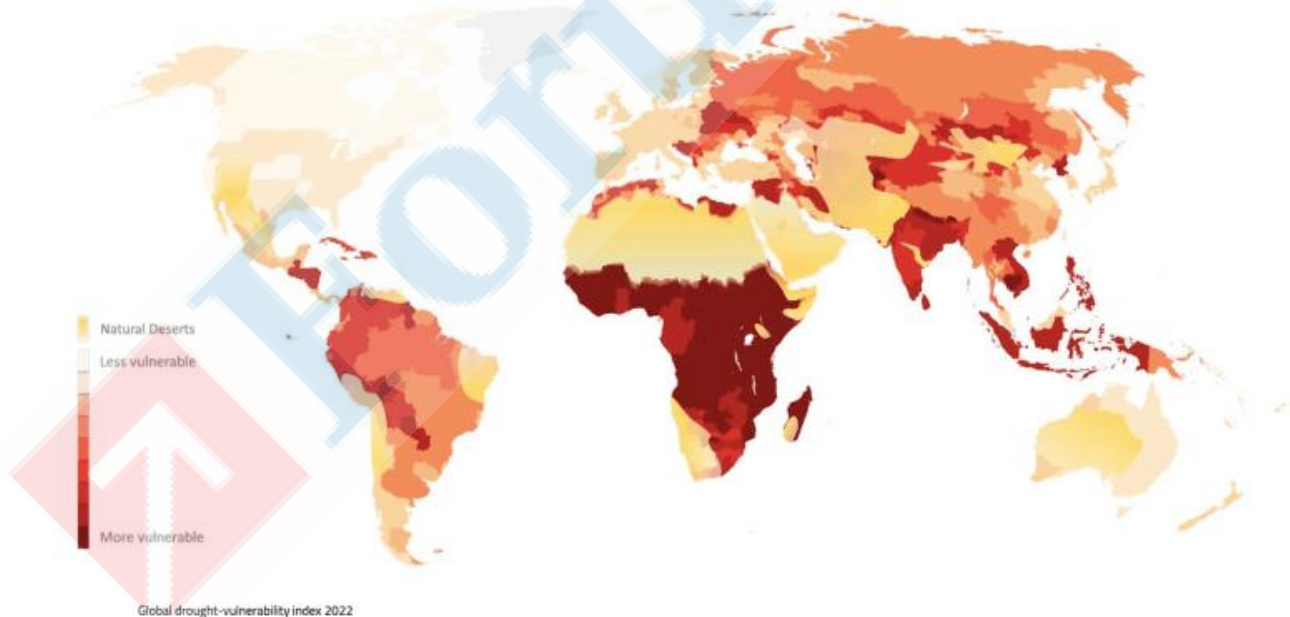
Mauritania, Madagascar, Malawi, Mozambique, Niger, Somalia, South Sudan, Syria, Pakistan, the U.S., and Zambia.



Source: UNCCD.

The image depicts regions impacted by Droughts in the last 2 years. Large parts of Western and Central India have been hit by droughts.

The report says that **climate change alone will cause 129 countries to experience an increase in drought exposure** in the next few decades.



Source: UNCCD.

The image depicts the regions vulnerable to droughts. The alarming aspect is the high vulnerability of regions in the African equatorial rainforests which normally receive heavy precipitation. In India, Kerala also has high vulnerability index which is a cause of concern.

Loss of Life: More than 10 million people lost their lives due to major drought events in the past century. From 1970 to 2019, drought was one of the deadliest hazard that led to the largest human losses, with a total of approximately 650,000 deaths. More than 90% of climate-related deaths occurred in developing countries. More than a billion people around the world were affected by drought in 2000-19, making it the second-worst disaster after flooding.

Loss of Biodiversity: The percentage of plants affected by droughts has more than doubled in the last 40 years. About 12 million hectares of land was lost each year due to drought and desertification. **14% of all wetlands critical for migratory species**, as listed by Ramsar, are located in drought-prone regions. Australia's 'megadrought' in 2019-2020 contributed to 'megafires' resulting in one of the most extensive losses of habitat for threatened species. **About three billion animals were killed or displaced** in the Australian wildfires. On a related note, 84% of all terrestrial ecosystems are threatened by **changing and intensifying wildfires**.

What are the harmful impacts of Droughts?

The Report observes that droughts have deep, widespread and underestimated impacts on societies, ecosystems, and economies, with only a portion of the actual losses accounted for.

Productivity: Drought can reduce the water availability and quality necessary for productive farms. It can also contribute to insect outbreaks, increases in wildfire, and altered rates of carbon, nutrient, and water cycling—impacting agricultural production. Drought is a major driver of crop yield volatility. The recent 2021-22 drought in Brazil, Argentina and Paraguay has resulted in loss of 20 million tonnes of soy. Canada's Canola production fell 28% last year due to severe drought.

Economic Losses: The report observes that in the E.U. and U.K., annual losses from drought are currently estimated to be around EUR 9 billion. The losses are projected to rise to more than EUR 65 billion without meaningful climate action. In the U.S., crop failures and other economic losses due to drought have been estimated to be ~US\$ 250 billion alone since 1980.

The report also stated that India's Gross Domestic Product (GDP) reduced by 2 to 5% between 1998 and 2017 due to severe droughts in the country.

The report further observes that if predictions are correct and global warming causes temperatures to rise by 3°C by 2100, drought losses could be five times higher than today's levels.

Migration: The World Bank estimates that up to 216 million people could be forced to migrate by 2050, largely due to droughts. Climate induced migration is going to create humanitarian crisis in future, with severe economic and political implications.

Impact on Ecosystems: ~33% of global carbon dioxide emissions are offset by the carbon uptake of terrestrial ecosystems. However, their capacity to sequester carbon is highly sensitive to drought events. The **loss of biodiversity leads to loss of carbon sinks**. Droughts will turn large proportion of terrestrial ecosystems from being carbon sinks to carbon sources. **Photosynthesis in European ecosystems was reduced by 30% during the summer drought of 2003, which resulted in an estimated net carbon release of 0.5 gigatons.**

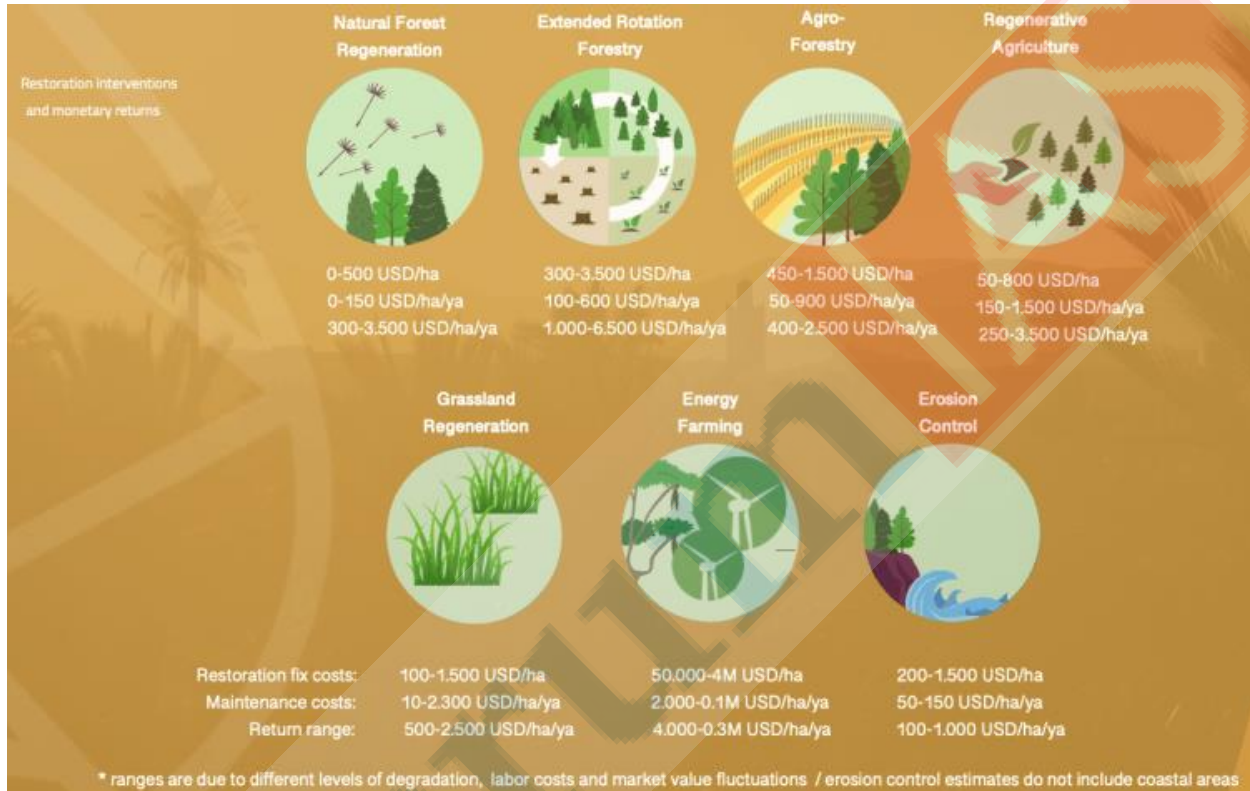
Gender Impact: The impact of drought is not uniform across genders. Research shows that women and girls in emerging and developing countries suffer more in terms of education levels, nutrition, health, sanitation, and safety as a result of droughts. The burden of water collection also disproportionately falls on women (72%) and girls (9%). The report notes that women may spend up to 40% of their caloric intake fetching water.

What suggestions have been given in the report to mitigate impacts of droughts?

Shift in Approach: The report advocates a paradigm shift from 'reactive' and 'crisis-based' approaches to 'proactive' and 'risk-based' drought management approaches.

Land Management and Ecosystem Restoration: Proactive measures are required to reduce risks and increase resilience of ecosystems and communities. This can be achieved through sustainable land management and ecosystem restoration policies e.g., In Niger, farmers have substantially reduced drought risks by **creating new agroforestry systems** on 5 million hectares over 20 years, with average costs below US\$ 20 per hectare.

The report lists several initiatives like **natural forest regeneration, rotation forestry, regenerative agriculture** etc. with some initial investments and relatively large returns.



Source: UNCCD

Sustainable Water Management: Water Management practices need to be adapted to ensure resilience against drought events e.g., The **Integrated Resources Plan (IRP)**, adopted by the Southern California Metropolitan's Board of Directors, ensures **supply reliability under various drought conditions** through **23 local projects and 200 conservation programs** that will yield more than 197 million cubic meters of water per year.

Similarly, adopting **drip irrigation** and other sustainable water use practices can increase water use efficiency and the yield. This was evidenced in Vietnam where small-scale farmers helped improve water-use efficiency by up to 43% and yield by 8-15%.

Information Technology and Indigenous Knowledge with Intelligence (ITIKI) is a drought **early warning system** that **integrates Indigenous knowledge and drought forecasting** to help small-scale farmers make more informed decisions, for example, on when and how to plant which crops. Trials of forecast models based on this in Kenya and South Africa has shown accuracy of 70% to 98% for up to 4 years.

Education and Readiness: Through a program of ecological restoration-based education, farmers in the Colombian Amazon set up 71 novel nursery gardens, producing 400,000 seedlings of 21 native forest species.

Use Media to create awareness: A dedicated media campaign to create awareness about judicious use of water and minimizing wastage can bring behavioural change in masses. A case study of California in 2017 shows that an increase of about 100 drought stories over two months was associated with a reduction of 11-18% in typical household water-use.

Mitigation and Climate Action: Limiting global warming to 1.5 degrees Celsius, along with regenerative land and improved water management practices, is expected to substantially reduce the probability of extreme drought events.

What lies ahead?

The Drought in Numbers report has formed the basis of negotiations surrounding key decisions by the UNCCD's 15th Conference of Parties (COP15). COP15 was held recently in Abidjan, Côte d'Ivoire. During the Conference, global consensus emerged on boosting drought resilience by identifying the expansion of drylands, improving national policies and early warning. The Conference concluded with a global pledge to invest in land restoration for future prosperity. While these developments are welcome, a persistent and concerted global effort is required to combat the threat posed by droughts.

Source: [The Hindu](#), [UNCCD](#), [NOAA](#)

State of Inequality in India Report – Explained, pointwise

Introduction

The 'State of Inequality in India' report has been released by the **Institute for Competitiveness**. The report demonstrates the wide gap between the top and bottom earners which is getting wider. The report further states that income deprivation can increase the probability of descent into poverty. However, a **multidimensional understanding** is important to assess the degree of deprivation in terms of lack of basic necessities, such as quality education and healthcare. Apart from this, the report proposes multiple recommendations for reducing the inequality gap in the country.

Institute for Competitiveness, India is the Indian subsidiary of the global network of the **Institute for Strategy and Competitiveness of the Harvard Business School**.

What are Key findings of the report?

Income: An Indian earning a monthly wage of Rs 25,000 is among the top 10% of earners in the country.

Incomes of the top 1% earners grew 15% during 2017-18 to 2019-2020 while that of the bottom 10% declined 1%. According to the Periodic Labour Force Survey (PLFS) 2019-20, the top 1% earns almost thrice as much as the bottom 10%. It also states that the top 10% earn more than 30% of total income, while bottom 50% hold about 22% of the total income.

Labour Force: The Labour Force Participation Rate (LFPR) has risen from 49.8% in 2017-18 to 53.5% in 2019-20. The country's unemployment rate is 4.8% (2019-20), and the worker population ratio is 46.8%.

Education and Household Conditions: They have improved enormously due to targeted efforts through several social protection schemes, especially in the **area of water availability and sanitation**. It is emphasized that education and cognitive development from the foundational years is a long-term corrective measure for inequality.

By 2019-20, **95% of schools had functional toilet facilities** on the school premises. **80.16% of schools had functional electricity connections** with States like Goa and Tamil Nadu achieving universal (100%) coverage of functional electricity connections.

Health: In the area of health infrastructure, there has been a considerable improvement in increasing the infrastructural capacity with a targeted focus on rural areas. From 1,72,608 total health centres in India in 2005, total health centres in 2020 stand at 1,85,505. States and Union Territories like Rajasthan, Gujrat, Chandigarh etc. have significantly increased health centres (comprising Sub-Centres, Primary Health Centres, and Community Health Centres) between 2005 and 2020.

78% of women received postnatal care from a doctor or auxiliary nurse within two days of delivery, and 79.1% of children received postnatal care within two days of delivery.

What is the significance of the report?

First, it throws light on glaring inequalities in India and the situation faced by the masses at the bottom of the inequality pyramid.

Second, it presents an opportunity for the government to acknowledge the magnitude of inequality and take remedial steps.

Third, it testifies to the failure of the trickle-down approach to economic growth as seen by rising incomes of top 1% and falling incomes of bottom 10%.

Fourth, it also builds a case for Wealth Tax. Wealth is accumulated across generations through inheritance. This is the reason the rich section's wealth grows faster than poor, increasing the gap. World Inequality Report 2022 had noted that over 50% of India's population are without any significant wealth. Thus, there is a case for the need to take steps to redistribute the wealth.

What are the implications of rising inequality?

Higher Vulnerabilities to Extreme Events: Poor people have little to no savings or wealth which makes it very difficult for them to survive in extreme situations like Pandemic, Disasters etc.

Hampers progress of Future Generations: Lack of access to income and wealth hampers the ability of the poor to access the levers (like education) that enable upward mobility. Children born in poor families remain trapped in poverty, perpetually.

Undermines Dignity: People with less resources have to work day and night without any day off unlike the affluent section. They starve for food, clothing and other basic things which undermines their **right to a dignified life under Article 21.**

High Crime Rates: A study published in the journal 'Nature' showed that more unequal societies tend to have higher crime. Inequitable distribution of wealth leads to lower social trust.

Lower Investment Levels: Marginal propensity to save is high in upper income levels while marginal propensity to consume is more at the lower levels. One cannot spend beyond a limit. The surplus goes into savings, which, in turn, get transformed into increased investments for the economy through financial intermediaries.

What are the challenges in addressing inequality?

Low Female Labor Force Participation Rate: Female LFPR still remains low. The Report notes that India's FLFPR has increased from 23.3% in 2017-18 to 30% in 2019-20 (although PLFS survey has put this figure to 22.8% for 2019-20). Lack of Education, Early Marriage, household responsibilities etc. force women to opt out of jobs which reduces their income.

Poor Coverage of Schemes: A worrisome 85.9% of people from rural areas and 80% from urban areas are not covered under health schemes. The coverage is inadequate in other social sector schemes as well.

Global Uncertainties: The continuation of COVID-19 and Russia-Ukraine conflict have pushed the inflation levels in the country thereby creating more problems for the poor. A recent World

Bank estimate shows that 1% increase in the food price will push 10 million people into extreme poverty.

Health Lacunae: Nutritional deprivation in terms of overweight, underweight, and prevalence of anaemia (especially in children, adolescent girls and pregnant women) remains areas of huge concern requiring urgent attention, as per the report. Additionally, low health coverage, leading to high out-of-pocket expenditure, directly affects poverty incidences.

What steps have been taken to reduce inequality?

Financial Inclusion/Jan Dhan-Aadhar-Mobile Trinity (or JAM Trinity): It focuses on mobile numbers, Aadhar Card and post office accounts as alternative financial delivery mechanisms to ensure that benefits reach the poor households seamlessly.

Ayushman Bharat: It focuses on providing care through Health Wellness Centres (AB-HWC) covering child and maternal health services, non-communicable diseases, and free drugs and diagnostic services.

Samagra Shiksha Abhiyan: It is an Integrated Scheme for School Education. This programme subsumes the three erstwhile Centrally Sponsored Schemes of Sarva Shiksha Abhiyan (SSA), Rashtriya Madhyamik Shiksha Abhiyan (RMSA) and Teacher Education (TE).

Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA): It guarantees 100 days of work a year to every rural household with an aim to enhance the livelihood security of people.

What more steps are required?

First, the government should raise the minimum wage rate especially in the unorganized sector wherein people get very less social security benefits. Assurance of minimum wage can be done by proper implementation of MGNREGA and introduction of a similar scheme in urban areas.

Second, the debate on **Universal Basic Income** has been going on for quite some time. The Government can now shift to action mode and take steps for a speedy rollout that would give sufficient cushion to the masses.

Third, there should be higher allocation of money towards social services. India requires 6% of GDP in Education and 2.5% of GDP in Health to ensure equitable development.

Fourth, there should be greater focus on digitization and JAM usage in order to reduce inclusion and exclusion errors in schemes.

Conclusion

India stands out as a poor and unequal country with an affluent elite as per the recent report. The current inequality situation raises an alarm bell to take proactive steps and provide justice to the masses at the bottom of the inequality pyramid thereby **attaining SDG 10** (reducing inequalities).

Source: [Economic Times](#), [Down to Earth](#), [Institute for Competitiveness](#)

IPEF: Indo-Pacific Economic Framework – Explained, pointwise

Introduction

On May 23 2022, before the **Quad leaders' summit in Tokyo**, the United States launched the Indo-Pacific Economic Framework (IPEF). IPEF is being said to be the US' answer to the other trade pacts in the Indo-Pacific region: the Trans Pacific Partnership (TTP) and its successor agreement, the Comprehensive and Progressive Agreement for TTP (CPTPP), and the Regional Comprehensive Economic Partnership (RCEP). The US had pulled out from the TTP due to

enormous domestic backlash against the low/no tariff agreement in it and also did not join the China-led 15-country RCEP. The IPEF is being portrayed as a tool to enhance economic cooperation and establish a rule based order in the Indo-Pacific.

What are the proposed dimensions of IPEF?

The proposed economic bloc has 13 members so far and more countries are expected to join. Apart from the four Quad members, IPEF includes Brunei Darussalam, Indonesia, South Korea, Malaysia, New Zealand, the Philippines, Singapore, Thailand and Vietnam.



Source: Indian Express

The framework has 4 pillars

Trade: It will include digital economy and emerging technologies, labour commitments, environment, trade facilitation, transparency and good regulatory practices. It will also include corporate accountability, standards on cross-border data flows and data localisations.

Supply Chain Resilience: To develop 'a first-of-its-kind supply chain agreement' that would anticipate and prevent disruptions.

Clean energy and decarbonisation: It will include agreements on 'high-ambition commitments' such as renewable energy targets, carbon removal purchasing commitments, energy efficiency standards, and new measures to combat methane emissions.

Tax and anti-corruption: It includes commitments to enact and enforce 'effective tax, anti-money laundering, anti-bribery schemes in line with [American] values'.

The member countries do not plan to begin negotiations for a trade pact immediately. They only promised to launch 'collective discussions towards future negotiations' with the ambitious wish list.

What is QUAD?

- Quadrilateral Security Dialogue (QSD) or Quad is an informal strategic dialogue between India, the USA, Japan and Australia. It is the collaboration of like-minded democracies across the Indian and the Pacific Ocean. It aims to ensure and support a "free, open and prosperous" Indo-Pacific region.

- The idea was first mooted by Japanese Prime Minister Shinzō Abe in 2007. However, the idea couldn't move ahead after Australia pulled out of it, apparently due to Chinese pressure.
- The grouping regained momentum after 2017. The Quadrilateral coalition was refurbished as 'QUAD 2.0' in 2017 on the lines of the ASEAN Summit. Since then the Quad summit meetings are taking place on a biannual basis.

Read More: [Quadrilateral economic forum and India – Explained, pointwise](#)

What is the significance of IPEF?

First, it is a salient attempt to allow countries to **decouple from Chinese over-dependence**. The framework will strengthen the existing free and open rules-based global order, which China has been targeting to upend.

Second, it will help the **U.S regain its dominant position** in the geopolitics which it has been losing to China and Russia. The aim is to reclaim economic leadership in East Asia and the ASEAN region without giving away concessions that would anger domestic lobbies.

Third, it will help in **setting the rules of the road for the digital economy**, ensuring **secure and resilient supply chains**. It will also play a pivotal role in raising standards for transparency, fair taxation, and anti-corruption.

Fourth, it **complements the “Quad Plus” process**. It brings together seven critical countries of the Association of Southeast Asian Nations (ASEAN), all Quad states, and dialogue partners. This grouping solidifies a case for the “plus” characterisation of the Quad process.

Fifth, it will **counter the other regional groupings**; the TTP, the CPTPP and the RCEP. None of them had India or the U.S as participants.

Sixth, it will also improve mitigation and adaptation efforts towards **climate change** by helping in inducing major investments necessary in clean energy infrastructure and the clean energy transition.

Will IPEF be beneficial for India?

First, IPEF gives India an **opportunity to be part of the value chain** in the Asia-Pacific region after it exited the RCEP trade deal in 2019.

Second, it also **takes care of India's concern of China** being part of RCEP. The IPEF by design excludes China.

Third, it presents an opportunity to concretize India's position as **a responsible and robust economic power** in the world order.

What are the associated challenges?

Data Localization: As per U.S, India's proposed data localisation requirements will serve as a hurdle to digital trade between the two countries. It will act as market access barrier, especially for smaller firms. However, India strongly supports data localization for protection of personal data and upholding national security.

Environment and Labour standards: The IPEF imposes stricter environment and labour standards that are way above the prevailing norms in India. Such strict measures may hamper investment flows into India thereby limiting the benefits. Moreover, incorporation of such standards in Free Trade Agreements is against India's official stand.

Different Stance over Russia -Ukraine Conflict: India hasn't openly criticized Russia unlike Australia, U.S and Japan. Further, India has continued to purchase oil from Russia. This hasn't significantly impacted India's relations with the west until now. However, if the war persists for long, it might be difficult for India to hold on to the same position.

China's Discontent: China views the framework as a U.S led 'Anti China' tool. India's joining may antagonize China and may escalate border tensions along the Line of Actual Control (LAC).

What lies ahead?

First, the 13 countries are yet to begin negotiations. The US hopes it will draw in more members as a reasonable degree of flexibility is provided in the agreement. According to the US Congressional Research Service, countries would have to sign up to all components within a pillar, but do not have to participate in all pillars.

Second, IPEF is **likely to complement the other Indo-Pacific projects** like the Supply Chain Resilience Initiative that also seeks to build resilient and secure trade linkages by reducing dependence on China. Further, there must be inclusion of key players like Taiwan into SCRI and IPEF as Taiwan enjoys a critical hold over semiconductor supply chain networks.

Third, IPEF will now help to expedite the **discussion and deliberation of a 'QUAD Plus' grouping** and formally concretize the idea into reality. It is now incumbent on the Quad states to allow for the creation of a "corridor of communication" that ultimately leads to a "continental connect" to strengthen a rules-based order.

Fourth, states must envision a **broad, all-embracing, and comprehensive framework** that can stand as a pillar for regional security and stability, multilateralism, and defence of global institutionalism. Establishing a stronger regional economic framework that promotes a resilient and secured supply-chain connect is just the beginning.

Conclusion

India is committed to a free, open, and inclusive Indo-Pacific region. It is keen to collaborate with partner countries under the IPEF and work towards advancing regional connectivity and integration for continued growth, peace, and prosperity.

Source: [The Hindu](#), [Indian Express](#), [Indian Express](#), [Business Standard](#)

The Supreme Court's Judgment on GST – Explained, pointwise

Introduction

The Supreme Court in the adjudication of the *Union of India vs Mohit Minerals Pvt Ltd.* case, has ruled that the **recommendations of the GST Council are not binding on either the Union or the State Governments**. While the Union Government has said that the SC's Judgment on GST does not bring any change to the already existing framework, some Opposition-ruled States have stated that it would give them greater space to take decisions in the federal structure.

About the GST

The introduction of Goods and Services Tax (GST) meant one tax rate across the country on items covered under it. Under the GST regime, both the Union and State Governments had to surrender their tax autonomy on all goods and services when it came to force on July 1, 2017 (excluding taxes on fuel and alcohol for human consumption and electricity).

To ensure that every State could play a part in decisions involving GST rates, exemptions, thresholds, relaxations and procedural issues, the GST Council was formed to decide on all these matters.

About GST:

- Goods and Services Tax(GST) is a **comprehensive indirect tax** on the manufacture, sale, and consumption of goods and services throughout India. It replaced the existing taxes levied by the Union and State Governments. It is a **single indirect tax for the whole nation**, which made India one unified common market.

- It is a **destination-based tax** applied on goods and services at the place where final/actual consumption happens.
- GST is applied to all goods other than crude petroleum, motor spirit, diesel, aviation turbine fuel, and natural gas and alcohol for human consumption.
- There are **four slabs for taxes for both goods and services** – 5%, 12%, 18%, and 28%.
- Although GST aimed at levying a uniform tax rate on all products and services, four different tax slabs were introduced because daily necessities could not be subject to the same rate as luxury items.

About the GST Council:

- The GST Council is the most important part of India's GST regime. The Council is responsible for **recommending** rates of tax, period of levy of additional tax, principles of supply, the threshold for exemption, floor level and bands of taxation rate, special provisions to certain states, etc.
- **Article 279A** of the constitution enables the formation of the GST Council by the President to administer & govern GST.
- The Union Finance Minister of India is the Chairperson of the GST Council. Ministers nominated by the State Governments are members of the GST Council.
- The decisions in the GST Council are taken by the 3/4th majority. The Union Government has 1/3rd voting power and the States have 2/3rd. So far, most of the decisions have been taken through complete consensus.
- A mechanism for resolving disputes arising out of its recommendations is also decided by the Council itself.

What was the case before the Supreme Court?

Mohit Minerals had filed a writ petition before the Gujarat High Court. It challenged notification of the Union Government levying IGST on the ground that **customs duty** is levied on the component of ocean freight and the **levy of IGST** on the freight element in the course of transportation would amount to double taxation.

The Union Government argued before the High Court that although tax is being paid twice on the value of ocean freight, it is not unconstitutional. The tax paid was on **two different aspects of the transaction**, namely, the supply of service and import of goods.

In its order passed on January 23, 2020, Gujarat High Court had quashed the Central notification levying IGST on importers for ocean freight paid by a foreign seller to a foreign shipping line.

The SC dismissed the Revenue Department's Special Leave Petition challenging the Gujarat HC order that had gone in favour of taxpayers. It upheld the decision of the High Court.

What is the SC's Judgment on GST?

The Court pointed out that Article 246A **gives both Parliament and State legislatures** the power to make laws relating to GST. The Constitution **has not specifically mentioned that all GST Council decisions will become law**. If that was the intention, Article 279A would have included clarifications to this effect.

It concluded that the GST Council decisions are **only 'persuasive' and not binding**.

What is the significance of the Judgment on GST?

First, the order has **reminded the States that they can reject decisions** made by the GST Council and set different rates for goods and services in their jurisdiction. This can open a new avenue for State Governments to harness more revenue.

Second, the SC's Judgment on GST has increased the **bargaining power of the State Governments**. It will prevent the Union Government from disregarding the interests of States. Many Opposition-ruled States have been criticising the functioning of the GST Council, stating that the ruling party and its allies are not appropriately addressing their concerns.

What has been response of the Union and State Governments on the verdict?

Union Government: The Government says that the Court has not said anything new. This is because the GST law provides for recommendation and not a mandate. Article 279A(4) states that, *'The GST Council shall make recommendations to the Union and States on-...'*

States: Supreme Court judgment clarifies all confusion regarding the GST Council recommendations. It is a verdict that upholds the federal rights of States and the people.

Will SC's Judgment on GST disrupt the GST regime?

The ruling does open an avenue for the States to opt for different tax rates than those taken by the GST Council. However, it is doubtful if any State will decide to legislate a different tax rate for goods and services currently under GST as such a move will be myopic and **may be unfeasible**. There may be different scenarios:

One, a State remains in the GST system, but sets higher tax rates on few goods and services. This will mean that **taxpayers will be unable to claim the input tax credit** on the goods outside GST, increasing their tax incidence. Taxpayers' **compliance burden for return filing** will also get very troublesome. Also, higher tax rates will make the State a less preferred destination for domestic and foreign investments.

Two, if the State moves out of the GST system completely, there will be complete chaos. Other States will not want to share their GST revenue with the breakaway State, thus bringing down its revenue share from the Centre. **Inter-State business with the breakaway State will collapse** and **FDI will move away** from the State.

Third, differential rates may **hamper the vision of introducing GST i.e achieving one nation, one tax**.

Thus, it is unlikely that any State will breakaway from the GST regime.

What lies ahead?

First, the States and the Centre **need to keep the spirit of cooperative federalism going** so as to ensure that the GST system functions appropriately. The Union Government should pay heed to the problems faced by States and suggest corrective measures, whenever possible.

The States should also desist from making unreasonable demands without considering the challenges in Union Government finances.

Second, the decision would help the States **pressurize the Union Government for extending the period of compensation** for the loss of revenue. As the 5-year period of compensation gets over at the end of June 2022 and as the tax regime is yet to stabilise, States have been demanding the extension of the compensation period for another 2-3 years. This decision will now help the states to bargain hard for the extension.

Third, focus should also be placed on increasing the revenue productivity of the tax by reducing the list of exempted items, rationalizing the rates and taking administrative measures. This would help in reducing the tussle between Centre and States on GST.

Conclusion

The Supreme Court Judgment on GST sets the stage for a fundamental revision of GST implementation and functioning of the GST Council from the perspective of cooperative federalism. The Court's remarks open up the issues of federal flexibility in determining SGST rates and procedures.

Source: [Indian Express](#), [Indian Express](#), [Business Standard](#), [The Hindu Businessline](#)

The Supreme Court's Judgment on Pardoning Powers of the Governor – Explained, pointwise

Introduction

The Supreme Court recently ordered the release of A G Perarivalan, one of the seven convicts in the Rajiv Gandhi assassination case. The Supreme Court exercised its special powers under the **Article 142** of the Constitution to order the release. The order came 24 years after Perarivalan was sentenced to death in the case by a lower court. The case holds immense significance as it has given **more clarity on the scope of the pardoning powers of the Governor under Article 161** of the Indian Constitution.

What is the background of the issue?

Perarivalan was arrested in June 1991, weeks after former Prime Minister Rajiv Gandhi was killed in a suicide bomb attack at Sriperumbudur in Tamil Nadu on May 21, 1991. Perarivalan was sentenced to death by a lower court in January 1998 after being convicted under IPC section 302 (murder) read with section 120B (criminal conspiracy). The sentence was upheld by the Supreme Court in May 1999.

In 2014, the Supreme Court commuted the death sentence to life imprisonment citing **long pendency of the mercy petition**.

What was the case before the Supreme Court?

Subsequent to commutation, Perarivalan had **submitted a mercy petition to the Governor of Tamil Nadu** in 2015 seeking release under Article 161 of the Constitution. After failing to receive a response, he moved the Supreme Court.

In September 2018, the Tamil Nadu Cabinet recommended the release of all seven convicts, including Perarivalan. The Governor, however, didn't act on the recommendation. In July 2020, Madras High Court reminded the Governor that the **Constitution had not prescribed a time limit** for the Governor to make a decision only "*because of the faith and trust attached to the Constitutional post.*" The HC warned that it might be forced to intervene.

In February 2021, the Governor's office forwarded the State Government's recommendation to the President. Since then, the issue has been pending with the President.

The State government had granted parole to Perarivalan in May 2021 which was subsequently extended on "health grounds". The Supreme Court granted him bail on March 9, 2022.

The Union Government has contended that the only President had the exclusive power to grant remission in cases pertaining to Section 302 (murder) of the IPC.

About Article 161:

- Under this, the Governor is empowered to grant pardons, reprieves, respites or remissions of punishment or to suspend, remit or commute the sentence of any person convicted of any offence against any law which is under the executive power of the State.
- **Exceptions:**
 - The Governor cannot pardon the death sentence (the President has the power to do so).
 - The Governor cannot grant pardon, reprieve, respite, suspension, remission, or commutation in respect to punishment or sentence by a court-martial.

What did the Supreme Court rule?

Use of Power Under Article 142: The Supreme Court used its **special power under Article 142** of the Constitution and directed that the appellant **be deemed to have served the sentence** in connection with the crime. The Court granted him liberty with immediate effect.

Governor's Referral to the President: The Court also **disapproved the action of the Governor of Tamil Nadu** of sending the recommendation of the State Cabinet (*to remit the remaining part of the sentence*) to the President. **The SC deemed it unconstitutional.** The Court said where both the Union and State Governments had the power to make laws, the Union Government's power will take precedence. However, precedence will be given only when "**executive power had been expressly conferred on the Union under the Constitution or the law made by the Parliament, failing which the executive power of the State remained intact**".

The Court **refused to remand the matter back to the Governor for reconsideration.** The main reasons behind such a stance were: **(a)** Appellant's prolonged period of incarceration, his satisfactory conduct in jail as well as during parole; **(b)** Chronic ailments from his medical records, his educational qualifications acquired during incarceration; **(c)** The pendency of his petition under Article 161 for two-and-a-half years even after the recommendation of the remission by the State Cabinet.

About Article 142:

- The Supreme Court in the exercise of its jurisdiction may pass such decree or make such order as is necessary for doing complete justice in any cause or matter pending before it.
- Any decree so passed or order so made shall be enforceable throughout the territory of India.

Scope of Article 142:

- **Prem Chand Garg v. Excise Commissioner, U.P., Allahabad (1962):** An order passed under Article 142 must not only be consistent with the fundamental rights guaranteed by the Constitution, but it also cannot be inconsistent with the substantive provisions of the relevant statutory laws.
- **A.R. Antulay v. R.S. Nayak (1988):** The majority opinion upheld the court's opinion in 'Prem Chand Garg'.
- **Union Carbide Corporation v. Union of India (1991):** The power under Article 142 is at an entirely different level and of a different quality. Prohibitions or limitations on provisions contained in ordinary laws cannot act as prohibitions or limitations on the Constitutional powers under Article 142.
- **Supreme Court Bar Association v. Union of India (1998):** The Court ruled that its powers under Article 142 were supplementary in nature, and could not supplant substantive law and "build a new edifice where none existed earlier".

What is the significance of the Judgment?

First, the **decision will serve as a reminder** that although no time limit has been assigned by the Constitution for the Governor to decide on pardon under Article 161, the Court can intervene using their power under Article 142 to ensure complete justice.

Second, the decision **shows the enhanced scope of judicial review over the pardoning powers of the Governor under Article 161.** It clarified that non-exercise of the power under Article 161 is not immune from judicial review.

Third, the decision will prevent the Union Government from undermining the power of State government and help in the **maintenance of federal equilibrium** in the country.

Fourth, it will induce the Governors to **act in a non partisan way** in consonance with the spirit of Constitutional Morality rather than showing favoritism.

Conclusion

The Court's decision is yet another instance to show why the Supreme court is referred to as the custodian of constitution. The decision will serve as a reminder for all other constitutional authorities (including Union, States and Governor) that they must act as per the mandate of the Constitution.

Source: [Indian Express](#), [Indian Express](#), [The Hindu](#)

Rice Fortification: Benefits, Concerns and Guidelines – Explained, pointwise

Introduction

The Union Government has released a Standard Operating Procedure (SOP) for the smooth implementation of its rice fortification distribution scheme. The SOP was released days after a fact-finding team reported that the fortified rice being distributed in Jharkhand was having an adverse impact on the local tribal population. The Union Government had launched a pilot scheme in 2019 for fortified rice and its distribution under the Public Distribution System (PDS) for 3 years to deal with anaemia. Last month, the Union Cabinet gave its nod to distribute fortified rice under various government schemes to address widespread malnutrition, anaemia and micronutrient deficiencies.

What is fortification of food?

The Food Safety and Standards Authority of India (FSSAI) defines fortification as the addition of key vitamins and minerals such as iron, iodine, zinc, Vitamins A and D to staple foods such as rice, wheat, oil, milk and salt. It is done to **improve nutritional value** and provide a public health benefit with minimal risk to health.

FSSAI standards for rice fortification: It has notified the standards for fortified food including rice via the Food Safety Standards (Fortification of Foods) Regulation, 2018, and the Food Safety and Standards (Food Products Standards and Food Additives) Regulations, 2011. For rice fortification, **Iron, folic acid** and **vitamin B12** are added. Micronutrients **zinc** and **vitamins A, B1, B2, B3** and **B6** are also added in specific quantities.

Methods of Rice Fortification

At present, rice is fortified using three methods in India:

- **Coating:** The nutrient is mixed with wax or gum. This mixture is sprayed on and blended with the polished rice in a 1:100 ratio.
- **Dusting:** Micronutrients, in the form of fine particles, are blended with bulk rice. Dusting makes use of electrostatic forces between the surface of the rice and the micronutrients.
- **Extrusion (Fortified Rice Kernels):** This is the most common method in India. The milled rice is broken into finer particles. This **rice flour is mixed with vitamins, minerals and water**. The mixture is then passed through an 'extruder' machine which produces rice kernels. These kernels resemble rice grains in shape and size. The kernels are dried, blended with milled rice in the proportion of 1:50 to 1:200 and then packed.

Source: The Hindu Created by | ForumIAS®

What is the new rice fortification scheme?

Fortified rice will be supplied across the Targeted Public Distribution System (TPDS) under the National Food Security Act (NFSA). The supply will also be done under Integrated Child Development Services (ICDS), *Pradhan Mantri Poshan Shakti Nirman*-PM POSHAN and other welfare schemes in a phased manner by 2024.

The cost of rice fortification, estimated at around Rs 2,700 crore per annum, will be borne by the Union Government as part of a food subsidy.

The programme has been divided into **three phases**: **(a) Phase 1**: Distribution under ICDS and PM POSHAN in India by March 2022. The first phase, which started in October 2021, is presently under implementation; **(b) Phase 2**: TPDS and other welfare schemes in districts with a high number of children showing stunted growth (total 291) to be brought under the scheme by March 2023; **(c) Phase 3**: The remaining districts to be brought under the scheme by March 2024.

Any rice fortified with iron also needs to carry a note of caution advising that 'People with thalassemia may take it under medical supervision'.

What is the need of fortification?

Dismal Health Data: The recently released **National Family Health Survey 2019-2021 (NFHS-5)** has revealed that around 90% of children in the country aged between 6 and 23 months did not get an adequately nutritious diet. Over 67% of children above 6 months but below 5 years of age were found to be anaemic. While 25% of men from the ages of 5 to 49 were anaemic, the number rose to 57% for women in the same age group.

Hidden Hunger: Even seemingly healthy individuals may suffer from malnutrition due to the absence of appropriate nutrients in their food. This deficiency of micronutrients, also known as hidden hunger, poses a serious health risk.

Regaining the Lost Nutrients: Many nutrients are lost during the processing of foods. For instance, during the rice milling process, husk, bran, and germ are removed to produce the commonly consumed white rice. Milling also removes fat and micronutrient-rich bran layers. Polishing of the grain removes 75 to 90% of vitamins B1, B6, B3 (Niacin) and E.

Cost Effectiveness: Fortification is one of the most cost-effective procedures to provide for the lack of nutrients..

Easy Adoption: It doesn't require an adjustment in the individual. In most cases, fortification causes minimal changes in the taste, appearance and texture of the food. So the individual preferences do not require much adjustments. There are some exceptions though.

What are the concerns associated with rice fortification?

First, the expert committee in Jharkhand observed negative impact of iron fortification in rice. The team noticed that tribal populations in Jharkhand already have an excess iron in their bodies. The consumption of iron-fortified foods by such patients can **reduce immunity and affect organs**.

Second, in some cases it was seen that fortified rice **adversely impacted the health** of individuals thereby showing a lack of efficacy. Nutrients don't work in isolation but need each other for optimal absorption. Adding one or two synthetic chemical vitamins and minerals will not solve the larger problem; it can lead to toxicity in undernourished populations.

Third, it sometimes **alters the taste of the product** which reduces the acceptance; thereby diminishing the consumption. For instance, in Jharkhand, people feared that 'plastic rice' had been mixed with regular rice. A vast majority of women were seen picking out and throwing away the FRK added to rice.

Keeping these challenges in mind, the government released Standard Operating Procedure for the fortified rice.

What are the guidelines under the new SOP for Rice Fortification?

Production: FRK manufacturers will have to apply for an FSSAI licence or registration under the 99.5 category (nutrients and their preparations) of the Food Categorisation Code. It needs to be ensured that the FRK resembles the regular rice in its colour, sheen, consistency, dimension and texture

Procurement: Millers would procure FRK directly from the FSSAI-licensed FRK manufacturers, who are required to submit a Certificate of Analysis from a lab accredited by the National Accreditation Board for Testing and Calibration (NABL). This certificate should mention information like the levels of micronutrients, the method used for testing, and the expected standards.

Packaging: It advises the packing of fortified rice in 50-kg gunny bags with labelling as per FSSAI guidelines to distinguish fortified rice from regular rice.

What should be the approach ahead?

First, the Government must ensure that the quantity added for fortification is well within the Recommended Daily Allowances (RDA) as per the prescribed standards for safe consumption.

Second, fortification should be done in such a way that it does not change any food characteristics— aroma, texture or taste. This would encourage greater adoption of fortified rice.

Third, the Government should also remember that rice fortification (food fortification) is one of the strategies to fight malnutrition. It should also focus on other methods like diversification of diet and supplementation of food. For instance, encouraging consumption of millets can be extremely beneficial considering its low glycemic index and high nutritional value.

Conclusion

Rice Fortification is a step in the right direction to eliminate the menace of malnutrition in India. Being a staple crop, fortified rice has a potential to impact a significant amount of population thereby playing a pivotal role in achieving SDG 2 i.e Zero Hunger. However all suitable measures should be taken to ensure there are no side-effects.

Source: [The Hindu](#)

[Kurukshetra May Summary] Railway Connectivity – Explained, pointwise

Introduction

Indian Railways has witnessed a paradigm shift in its focus towards new technologies, customer service enhancement, improving railway connectivity, efficient passenger operations and better freight services. It is currently on the path of transformation to make the sector future-ready. Railways provide various services for goods and passenger transportation that are vital for inclusive growth and overall development of India. Nonetheless, certain bottlenecks remain that need to be addressed.

What is the current status and trend regarding railway connectivity in India?

It was recorded that in FY 19-20 about 13,169 passenger and 8,479 goods trains were operated daily.

The increasing urbanization and higher standard of living are driving the growth in the passenger segment. On other hand, freight traffic has increased substantially due to growing industrialisation in the last decade. For Railways, freight remains the major source of revenue which accounted for around 65% of the total revenue generated in FY2020-21. 35% revenues were from passenger segment.

In freight traffic, Indian Railways plans to achieve 204 MT (million tonnes) of loading in 2024 from the current level of 1200-1300 MT. It is projected that by 2050, India will account for 40% of the global share of rail activity and hence would need an investment of Rs. 50 lakh crore (by 2030) in railway infrastructure development.

Parameter	2018-19	2019-20	2020-21
Route Total (Electrified) (kms)	67,415 (34,319)	67,956 (39,329)	68,103 (44,802)
No. of Employees (Thousand)	1,228	1,254	1,252
Wage Bill (INR Cr)	1,35,171	1,56,243	1,56,730
Average Wage/employee (INR)	11,02,934	12,45,328	12,49,755
No. of passengers (million)	8,439	8,086	1,250
Passenger Earnings (INR Cr.)	51,067	50,669	15,248
Freight Traffic (million tonnes)	1,225	1,212	1,233
Freight Earnings (INR Cr.)	1,22,580	1,11,472	1,15,738
Gross Revenue (INR Cr.)	1,90,507	1,74,694	1,40,783
Working Expenses (INR Cr.)	1,86,733	1,73,105	1,38,236
Net Revenue (INR Cr.)	3,773	1,589	2,547
Operating Ratio* (%)	97.3	98.4	97.4

Source: Indian Railways Statistical Statements, 2020-21

*Operating Ratio: It shows the efficiency of a company by comparing the total operating expenses to net sales. The operating ratio shows how efficient a company's management is at keeping costs low while generating revenue. The smaller the ratio, the more efficient the company is at generating revenue.

What is the importance of Indian Railways?

Employment: The railways provide greater employment opportunities for both skilled and unskilled labor. Over 12 lakh persons are depending upon railways for their livelihood.

Boosting Make in India: A robust rail network will augment the transportation system that will attract more investment in India. This will aid in enhancing the current manufacturing capacity of the nation.

National Integration: It connects the remotest corners of a state with main cities and other states. Further, enhancing railway connectivity will play a pivotal role in connecting the north east with mainland India.

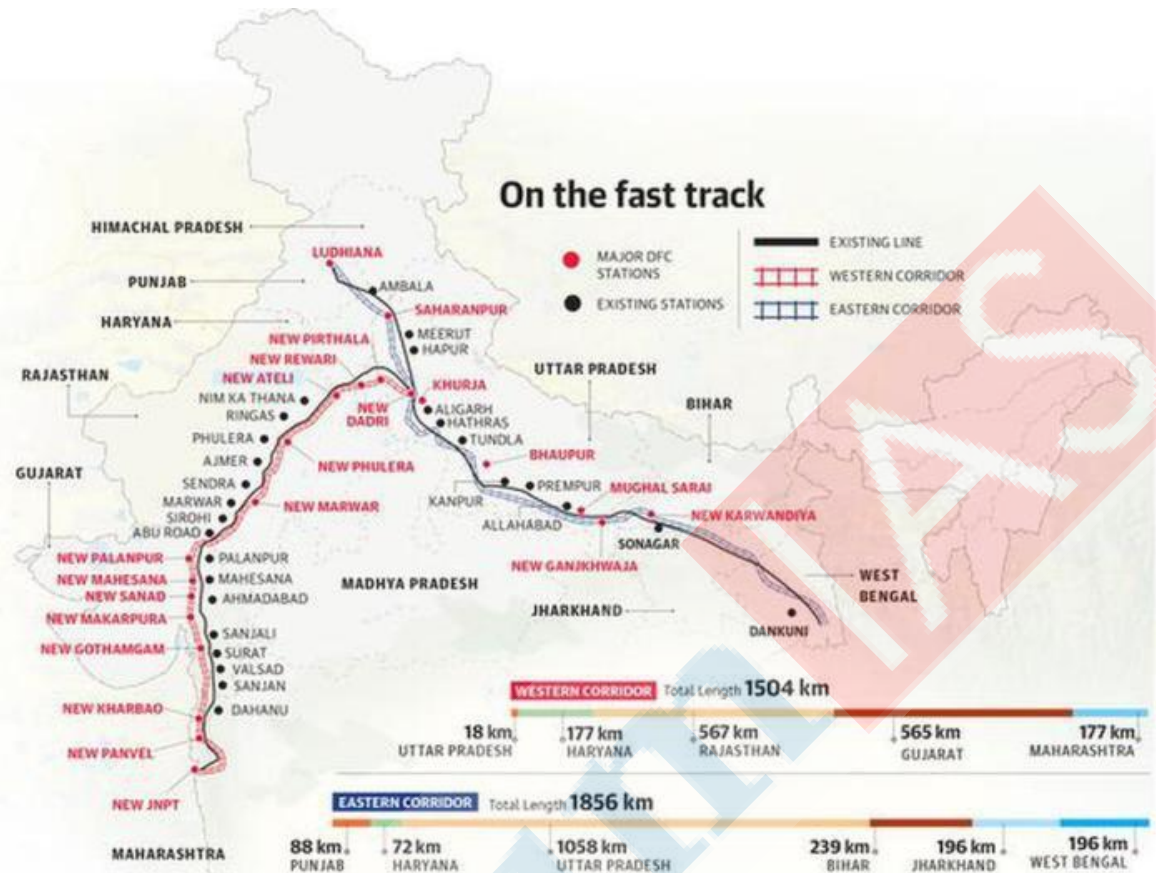
Dependable: It is the most dependable mode of transport as it is the least affected by weather conditions such as rains, fog etc. compared to other modes of transport.

Social Benefits: Indian Railways provide special concessions to women, old, disabled etc.. in fares and other services. Charges are based on the 'charge what the traffic can bear' principle which helps the poor.

What steps have been taken by the Government for enhancing railway connectivity?

Dedicated Freight Corridors (DFCs): The DFCs are being created with the motive of improving the share of freight traffic. They were supposed to be operational by 2022. However now they are expected to be completed by 2023-24. DFCs include: **(a)** The Western Dedicated Freight Corridor (WDFC), from Uttar Pradesh to Mumbai; **(b)** The Eastern Dedicated Freight Corridor (EDFC), Ludhiana in Punjab to Dankuni in West Bengal.

The **World Bank** has funded INR 124.53 billion for the **Eastern DFC**, while the **Japan International Cooperation Agency** has provided INR 387.22 billion for the **Western DFC**.



Source: *The Hindu*

PM Gati Shakti: It is a transformative approach driven by seven engines, namely, Roads, Railways, Ports, Airports, Waterways, Mass Transport and Logistics Infrastructure to spur economic growth and sustainable development. It will help in developing world-class modern infrastructure and logistics which will bring synergy by providing multi-modal integrated and seamless connectivity for movement of people, goods and services.

Atma Nirbhar Bharat Initiative: After this, more than 97% of the equipment required for the production of electric locomotives is being sourced domestically. The Indian Railway has also started manufacturing smart coaches, which provide additional features like announcements, information on trains approaching different stations and air-conditioning and temperature control, etc.

Kisan Rail: The commencement of 'Kisan Rail' is another important initiative to improve the freight business in general and provide a push to farmers in particular. Under this scheme, 157 trains are being operated on eight routes transporting more than 49,000 tonnes of commodities.

Green Fuel Initiatives: Indian Railways is aiming to achieve 100 percent electrification of railway lines by December 2023. As of March 31, 2021, the Railways had electrified 66% (~45,000 km) of its total network (~68,000 km). Indian Railway has adopted an environment-friendly technology called **Head-on Generation (HOG)** system for supplying power to passenger coaches. It eliminates the requirement for separate power cars in trains, thus cutting down energy costs significantly.

Station Infrastructure Redevelopment Programme: The Government of India has launched the station redevelopment programme, which aims to redevelop 400 railway stations across India

for INR 1,000 billion under a **public-private partnership** (PPP) model. The programme will try to develop self-sustainable railway stations with high standards of safety, comfort, user-friendly passenger amenities, value-added services and efficiency by adopting the best technological practices.

Digitisation Initiative: As of July, 2021, the Wi-Fi facility has been provided at 6,045 railway stations. Other digital initiatives include the installation of internet-based video surveillance systems and IP-based CCTV surveillance cameras.

Connecting the North-East and Mining Districts: The railway connectivity is being enhanced in the North-east as part of inclusive development. The entire rail network of the North-East (NE) is being connected to broad gauge. Major cities in all NE States are being connected by Rail. The Railways has also launched '**Mission Hungry for Cargo**' initiative that is targeting a 45% modal share in freight transport from current 27%. The Railways is also mapping mining districts of the country to enhance their railway connectivity.

What are the challenges faced by Indian Railways?

Over Departmentalization: The Railway Board is IR's apex decision-making body. It is organised into various departments like mechanical, electrical, traffic and finance that are vertically separated from the top to bottom. These lines of separation made IR a complex over-departmentalised organisation with inefficient decision-making.

Financial Stress: Traffic revenue is unable to keep pace with the increase in staff costs and pension payments. With the (Eighth) Pay Commission, to be scheduled in 2025-26 the working expenses of railways will further increase. Further, almost 50% of freight earnings are contributed by the transport of coal. With the increasing usage of renewable energy at competitive prices, dependence on coal will reduce. This will affect freight revenues.

Lack of Modernization: Indian Railways has not been able to keep pace with modernisation of infrastructure and services. Almost all arms of the railways require modernisation of equipment, processes and training, all of which are still continuing as they have been, through the decades.

Safety: In India rail accidents are high. In 2018-19, railways recorded 16 deaths, 28 deaths in 2017-2018 and 195 deaths during 2016-2017. The Kakodkar committee had suggested investing INR 1 lakh crore over a 5-year period and the creation of a statutory railway safety authority.

What should be the approach going ahead?

First, creation of a **single cadre for railways management (IRMS)** by the government is a prudent step to eliminate 'departmentalism' in railways. It will help improve efficiency.

Second, focus **should be on increasing the revenues**, particularly the freight revenue. In this context, the operationalization of two DFCs should be expedited.

Third, an annual report called '**Indian Railways Report**' on the lines of the annual Economic Survey should be placed in Parliament every year. It should detail the physical and financial performance of the Railways. It will make railways more accountable and transparent.

Fourth, establish a **regulator and moderate charges** like the amount for the maintenance of tracks and stations. This will help in attracting more investment in railways.

Fifth, As a part of '*Atma Nirbhar Bharat*', 2,000 km of rail network will be brought under '**Kavach**', which is an indigenously developed **anti-collision system** with world-class technology to prevent accidents. *Kavach* will help railways to achieve its goal of zero accidents. In the next 3 years, Indian Railways is slated to introduce 400 new-generation and high energy efficient '**Vande Bharat**' high speed trains with focus to add value to passenger riding experience. Focus should be fast execution of these initiatives.

Conclusion

Railways is considered as 'Lifeline of India' for its multifaceted and multidimensional contribution. Therefore prudent reforms in the sector are imperative for enhancing people's capabilities, choices and quality of life.

Source: Kuruksheetra May 2022, [Indian Railways](#)

