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## 7 PM COMPILATION

**June, 2022**

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**Features of 7 PM compilation**

- ❖ **Comprehensive coverage of a given current topic**
- ❖ **Provide you all the information you need to frame a good answer**
- ❖ **Critical analysis, comparative analysis, legal/constitutional provisions, current issues and challenges and best practices around the world**
- ❖ **Written in lucid language and point format**
- ❖ **Wide use of charts, diagrams and info graphics**
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The Indus Water Treaty – Explained, pointwise
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**Sub topic:- Bilateral, regional and global groupings and agreements involving India and/or affecting India's interests**

The Global Semiconductor Shortage – Explained, pointwise
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India's GDP Growth for FY2021-22 – Explained, pointwise
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Right to Compensation (Against Wrongful Prosecution, Incarcerations, and Convictions) – Explained, pointwise

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Ban on Wheat Exports – Explained, pointwise
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Air Quality Life Index (AQLI) – Explained, pointwise
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Ban on Single-Use Plastic – Explained, pointwise
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[Kurukshetra June Summary] Rural Tourism: India an Incredible Tourism Destination – Explained, pointwise
**Topic:-** Economic development

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**Sub topic:-** Changes in industrial policy and their effects on industrial growth.

Space Economy in India – Explained, pointwise
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Gig Economy in India and the Issues faced by Gig Workers – Explained, pointwise
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**Sub topic:-** Indian Economy and issues relating to planning, mobilization, of resources, growth, development and employment.

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## The Indus Water Treaty – Explained, pointwise

### Introduction

The 118th meeting of the India-Pakistan Permanent Indus Commission (PIC) took place recently. The Commission has been created under the Indus Water Treaty (IWT). The treaty is an agreement that was signed by former Prime Minister Jawaharlal Nehru and the then President of Pakistan, Ayub Khan in 1960. It marked out control over the 6 rivers running across the Indus basin following the partition of India. The role of India, as a responsible upper riparian abiding by the provisions of the treaty, has been remarkable. However the country, of late, is under pressure to rethink the extent to which it can remain committed to the provisions, as its overall political relations with Pakistan becomes intractable.

### What was the background of the Indus Water Treaty?

The **six rivers of the Indus basin originate in the Himalayas/Tibet** (Indus, Sutlej, Beas, Ravi, Jhelum and Chenab) and flow across the Himalayan ranges to end in the Arabian sea. Preceding partition, it was one common network for both India and Pakistan. However, the partition of India raised question about the distribution of water between the two nations. Since the rivers flowed from India, Pakistan felt threatened by the prospect of control of river waters by India. Initially, the issue of water sharing was sorted out by **the Inter-Dominion accord of May 4, 1948** that laid out that India would release enough water to Pakistan in return for annual payments (by Pakistan). The problems of this arrangement were soon realized and it was considered necessary to find an alternative solution.

Eventually, in 1960, the two countries reached a decisive step with the intervention of the **World Bank** wherein precise details were laid out regarding the way in which the waters would be distributed.

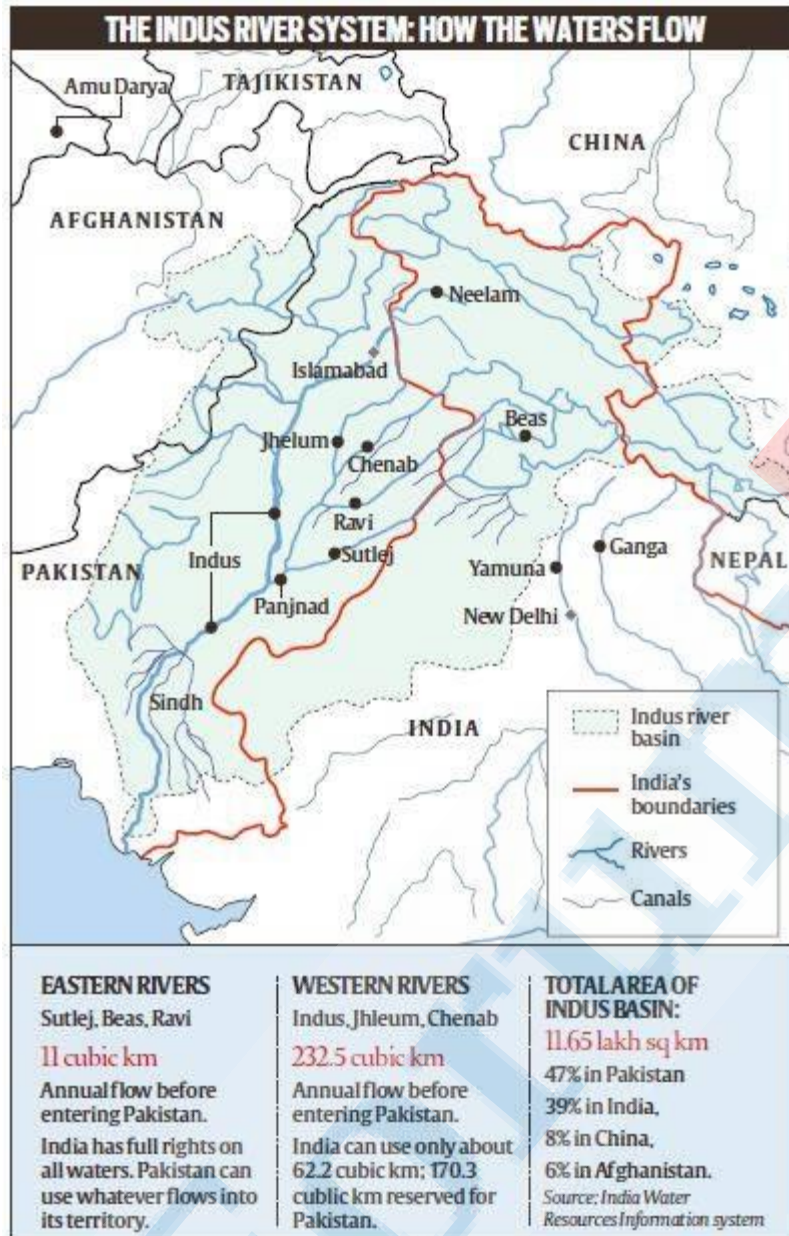### What are the main provisions of the Indus Water Treaty?

The Treaty gives **India control of 3 Eastern Rivers (Beas, Ravi and Sutlej)** with a mean annual flow of 33 million acre-feet (MAF). **Pakistan gets control of 3 Western Rivers (Chenab, Indus and Jhelum)** with a mean annual flow of 80 MAF. The treaty gives **India 20%** of the water from the Indus River System and the rest **80% to Pakistan**.

The treaty allows India to utilize the waters of Western Rivers for for **limited irrigation use** and **non-consumptive use** for such applications as **power generation**, **navigation** etc. Thus, India can generate hydroelectricity through a run-of-the-river projects (without the storage of waters) on the western rivers, subject to specific criteria for design and operation. Further, Pakistan also has the **right to raise concerns** on the design of Indian hydroelectric projects on western rivers.

The treaty allowed India to have a **minimum storage level on the western rivers** – meaning it can store up to 3.75 MAF of water for **conservation and flood storage purposes**.

A **Permanent Indus Commission** was set up by the United Nations for resolving any disputes that may arise in water sharing.

The functions of the commission include serving as a forum for exchange of information on the rivers, for continued cooperation and as a first stop for resolution of conflicts.

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## THE INDUS RIVER SYSTEM: HOW THE WATERS FLOW

**EASTERN RIVERS**

Sutlej, Beas, Ravi

11 cubic km

Annual flow before entering Pakistan.

India has full rights on all waters. Pakistan can use whatever flows into its territory.

**WESTERN RIVERS**

Indus, Jhleum, Chenab

232.5 cubic km

Annual flow before entering Pakistan.

India can use only about 62.2 cubic km; 170.3 cubic km reserved for Pakistan.

**TOTAL AREA OF INDUS BASIN:**

11.65 lakh sq km

47% in Pakistan
39% in India,
8% in China,
6% in Afghanistan.
*Source: India Water Resources Information system*

*Source: Indian Express*

### How do conflicts get resolved under the Indus Water Treaty?

The IWT provides a **three step dispute resolution mechanism,** under which "questions" on both sides can be resolved at the **Permanent Commission**, or can also be taken up at the inter-government level.

In case of unresolved questions or 'differences' between the countries on water-sharing, such as technical differences, either side can approach **the World Bank to appoint a Neutral Expert (NE)** to come to a decision.

And eventually, if either party is not satisfied with the NE's decision or in case of 'disputes' in the interpretation and extent of the treaty, matters can be referred to a **Court of Arbitration**.

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Pakistan has raised disputes on almost all of India's projects on Western Rivers. These include Baglihar Dam on Chenab, Kishenganga Dam on Kishenganga River (tributary of Jhelum River), Tulbul Project on Jhelum River. The Baglihar Dam 'Difference' was resolved in 2007 through the World Bank-appointed expert, and Kishenganga Dispute was resolved through Court of Arbitration in 2013.

## What are the reasons behind success of the Indus Water Treaty?

The treaty has remained 'uninterrupted' because India **respects its signatory and values trans-boundary rivers** as an important connector in the region in terms of both diplomacy and economic prosperity. There have been several instances of terror attacks – Indian Parliament in 2001, Mumbai in 2008, and the incidents in Uri in 2016 and Pulwama in 2019. This could have prompted India, within the **Vienna Convention on the Law of Treaties**, to withdraw from the IWT. However, on each occasion, India chose not to do so.

## What are the reasons behind calls for renegotiating the Indus Water Treaty?

**First**, the treaty has **unequal sharing of the waters**. Pakistan has been allocated ~80% of the Indus basin waters. Experts have termed this the **most generous water sharing treaty**. It is the only water-sharing pact in the world that compels upper riparian State to defer to the interests of the downstream State.

**Second**, it **prevents India from building any storage systems** on the western rivers. Even though the treaty lays out that under certain exceptional circumstances storage systems can be built, Pakistan deliberately stops any such effort. The extensively technical nature of the treaty allows **Pakistan to stall legitimate Indian Projects**.

**Third**, the basin's size and volume is getting altered by **climate change** and this alteration is going to intensify in future. There would be instances of more high-intensity rainfall as well as long stretches of scanty rainfall. There would be a high influx of water due to glacial melt. The contribution of glaciers in the Indus basin is higher than in the Ganges or Brahmaputra basins. A change in the flow conditions may classify as 'change of circumstances' which can justify renegotiation or termination in the future.

**Fourth**, the recent report of the Standing Committee of Water resources noted that canals in Punjab and Rajasthan (Rajasthan Feeder and the Sirhind Feeder) had become old and were not maintained properly. This had resulted in the lowering of their water carrying capacity. Thus, the water from the Harike Barrage on the confluence of the Beas and Sutlej in Punjab was usually released downstream into Pakistan. Pakistan is getting more waters than its entitlement in the Eastern Rivers.

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## WHY INDIA CALLS THE INDUS TREATY A ONE-SIDED AFFAIR

The Indus treaty is spoken of as the world's most generous water-sharing arrangement. Signed Sept 19, 1960, it shows how India and Pakistan share **six rivers – The eastern Beas, Ravi, Sutlej, and western Indus, Chenab and Jhelum and their tributaries**

**Pakistan:** Indus, Chenab, Jhelum
**India:** Beas, Ravi, Sutlej

**Does the treaty really favour Pakistan?**

**Pakistan** gets **80%** of the water in the 6-river Indus system

This is **90 times** greater volume of water...

...than Mexico's share under a 1944 pact with the US

➤ It is Asia's only treaty with specific water-sharing formulas on cross-border flows
➤ A virtual line on the Indian map splits the Indus basin
➤ India's sovereignty lies in the lower rivers, Pakistan's in the upper
➤ Only water pact compelling an upper riparian state to defer to the interests of a downstream state

**HOW DOES IT IMPACT J&K?**
In 2011, J&K govt hired a consultant to assess its **economic loss** because of treaty
It was estimated to be in **hundreds of millions** of dollars annually

**Crisis Test**
Treaty's stood the **test of time for 56 years**. Permanent Indus Water Commission met even during the 1965 and 1971 wars

**When the treaty was signed...**
➤ It settled a 12-year fight
It gave the **green light to irrigating almost 30m acres** in India and Pakistan
➤ At the time, number of people expected to benefit was 47m, equal to the then Italian population

**China building dams in POK**
The 7,000MW Bunji Dam and the 4,500MW Bhasha Dam

**Have there been disputes over the treaty?**
**Yes.** In 2010, Islamabad began international arbitration over India's 330MW hydro project on Kishenganga. In 2011, India was ordered to suspend work. In 2013, India was allowed to resume work under tough terms

**Post-Uri clamour...**
For any such treaty to work, it is important there must be mutual trust and cooperation. It can't be a one-sided affair
– Vikas Swarup, MEA spokesman

**Why rethink on treaty could have consequences**
➤ Expect international condemnation
➤ Turning tap off could mean flooding our cities
➤ It can make neighbours like Bangladesh, the countries with which India has water sharing arrangements, uneasy

*Source: The Times of India*

**Can the Indus Water Treaty be rejected by India on a unilateral basis?**

Article XII (4) of the Indus Water Treaty notes that, "...*provisions of this Treaty...shall continue in force until terminated by a duly ratified treaty concluded for that purpose between the two Governments.*" Thus the treaty doesn't allow for unilateral termination.

Article 62 of the **Vienna Convention on Law of Treaties (VCLT), 1969** provides that even a '*fundamental change of circumstances*' that are '*not foreseen by the parties*' at the time of conclusion of treaty is not a valid ground for termination of treaty unless certain conditions are

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fulfilled. Legal experts argue that terrorist attacks do not fall under this exception. Although, India is not a party to this convention, the Supreme Court of India has recognised the customary status of the Convention. (*Pakistan is a signatory, but hasn't ratified the Convention*).

Thus, **unilateral termination will impact India's international standing as a responsible power that always supports a Rules based International Order**. This will weaken India's case for permanent representation at the UNSC.

Moreover, there are certain other downsides of unilateral termination e.g., **(a)** India has water sharing agreement with Bangladesh. Termination of treaty will raise anxiety in Bangladesh and impact bilateral relations; **(b)** China, an 'all-weather ally' of Pakistan, will certainly use diversion of Brahmaputra waters to threaten India; **(c)** There is not enough infrastructure to store/divert waters of Western Rivers to starve Pakistan of water.

**What should be the approach of India going ahead?**

**First**, India should take steps to completely utilize its entitlement of waters of Western Rivers. The infrastructure to utilize the waters has remained under-developed in J&K.



India grossly under-utilises its entitlement under the 1960-treaty where it can use all the waters of the Jhelum, Chenab and Indus

**India can build up in J&K**

Treaty allows **1.3 million acres** of irrigation
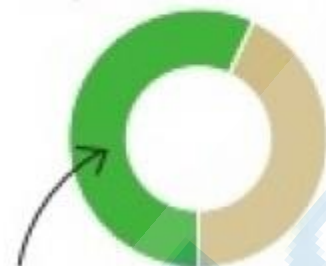
Actual area irrigated **Only 0.8 million acres**

18,600 MW hydel power can be generated

Only **3,034 MW** developed

Hydel infra for 2,526 MW under construction. Projects on anvil for another 5,846 MW. 2,526 + 5,846 = 11,406 MW
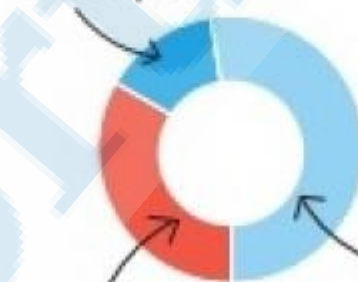
Room for further projects to generate 7,194 MW

*Source: Times of India*

**Second**, some experts suggest that in case of escalation of hostilities by Pakistan in future, India can **suspend the meetings of Permanent Commission**. If the first state of dispute redressal is not functional, the subsequent two steps of 3-tier dispute redressal don't kick in. Thus India can use this as a pressure tactic on Pakistan.

**Third**, India should explore the possibility of using climate change as a 'change in circumstances' to initiate conversation on renegotiation of the IWT. This will also put pressure on Pakistan.

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**Fourth**, experts in India and Pakistan should assess how much of the waters in the Eastern and Western rivers are snow or rain-fed within their respective territories. Such estimates would add to the accuracy of each side's dependence on the other in sharing the waters of these rivers.

**Fifth**, as per the standing committee of water resources, the canal systems in Punjab and Rajasthan should be repaired to increase their water carrying capacity.

Source: **Indian Express**, **Indian Express**, **The Hindu**, **The Diplomat**

## The Global Semiconductor Shortage – Explained, pointwise

### Introduction

The Semiconductor Industry is facing an acute crisis with a global semiconductor shortage. Multiple industries are dependent on semiconductor chips for their inputs. Hence, the shortage is expected to have a major impact on global manufacturing industry and consequently the economy. The shortage has persisted for almost a year now with no immediate respite in the foreseeable future. What is concerning is that the IMF has already predicted a slowdown in the global economy. The semiconductor crisis may exacerbate the slowdown further.

### About Semiconductors

A semiconductor is a material which has electrical conductivity between a conductor and an insulator (less than that of conductors and more than insulators). Conversely, semiconductors have resistivity less than that of insulators and more than conductors. The **resistance of the semiconductor decreases with increase in temperature** and vice versa. Semiconductors are made from pure elements like **silicon or germanium, or compounds such as gallium arsenide**.

The conductivity of semiconductors can be changed through **doping**. It is a process of adding small amounts of impurities to these pure elements, causing large changes in the conductivity of the material.

> **Conductors and Insulators**
> Conductors allow electricity to flow through them relatively freely. They conduct electricity because they allow electrons to flow easily inside them from atom to atom. Conducting materials include gold, silver, mercury, sea water etc. An insulator is a material that does not conduct electrical current. Insulating materials include paper, plastic, rubber, glass and air.

### What is the significance of semiconductor chips?

Semiconductors are **the building blocks of today's technology.** For instance, semiconductor chips are widely used in **(a)** Computers and laptops; **(b)** Phones, mobile devices and other electronic gadgets; **(c)** Automobiles; **(d)** Aviation; **(e)** Medical devices especially diagnostics; **(f)** Military equipment among others.

Semiconductors **make the devices more compact, less expensive, and more powerful**. For instance, mobile phones weighed about 2 lbs, cost thousands of dollars, and held a charge for only about 30 minutes of talk time during their initial phase in 1980s/90s. However today an individual can buy a smartphone for ~INR 5,000 with batteries lasting a full day.

Semiconductors will **continue to enable the world's greatest breakthroughs**. They have already transformed industries ranging from Aerospace and consumer electronics to energy and

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medicine. With the evolving Internet of Things, the impact of semiconductors on our daily lives is going to become even more profound

**What is the current structure of global semiconductor manufacturing Industry?**

Semiconductor manufacturing comprises the front-end fab manufacturing and the back-end assembly, including packaging and testing. Globally, this entire value chain is seeped in interdependence between a handful of countries like the USA, Taiwan, Japan, China and some European nations.

Semiconductor manufacturing is now dominated by Taiwan Semiconductor Manufacturing Company (TSMC) in Taiwan and Samsung Electronics in South Korea.
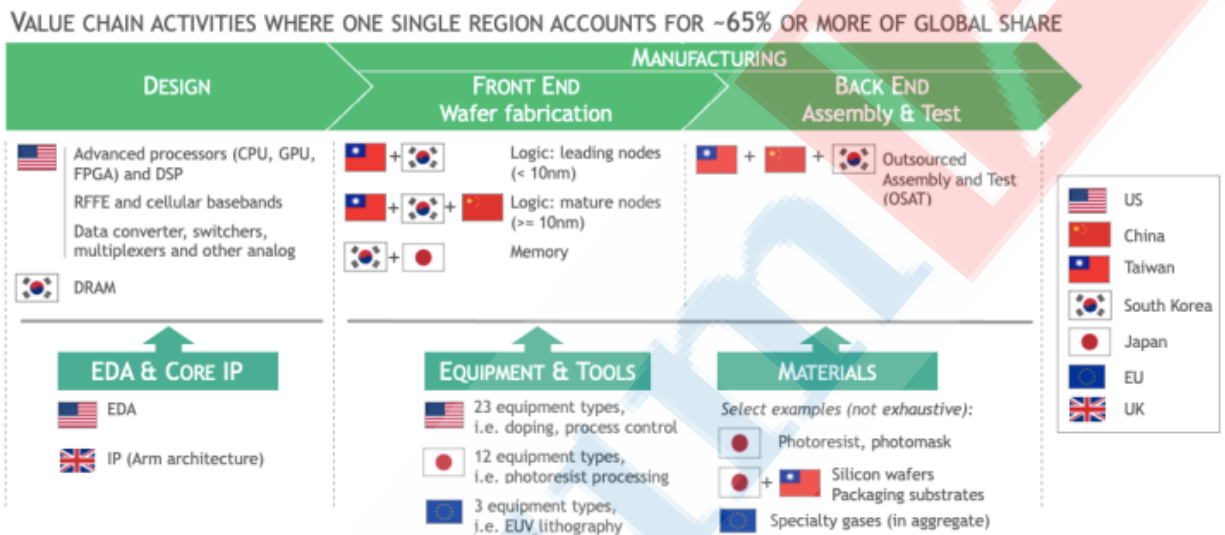
*Source: Semiconductors.org*

Big brands like Apple and Qualcomm design their own chips using the ARM architecture but outsource them to companies like TSMC, the world's largest contract manufacturer for chips. U.S Companies like Intel are also a key player in chip manufacturing.

**What is the magnitude of the current semiconductor shortage?**

The global semiconductor shortage has affected many industries for more than a year. The shortage has caused a rise in the prices of chips as well as the waiting time has increased. This has impacted all industries in terms of their outputs. The shortage has affected smartphones, personal computers, game consoles, automobiles, and medical devices.

Recently, the Japanese automaker (Toyota) cut its global production target for the period between April and June by 1,00,000 to 7,50,000 vehicles in May 2022. Similarly, in October 2021, Apple said it lost US$ 6 billion to chip shortage in the last quarter.

Furthermore, CEOs of AMD, Nvidia and Intel have said at different forums recently that the chip situation will remain tight for the rest of 2022.

**What are the reasons behind current global semiconductor shortage?**

**Impact of Pandemic**: The COVID-19 pandemic had a major impact on professional and personal lives. A whole lot of activities shifted from physical world to virtual media. A large workforce switched to work from home while the schools conducted their classes online. Even social

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gatherings happened over video calls. This shift led to a surge in demand for laptops and tablets. Further, the stay-at-home rules also made several people pick up **console-based gaming**. Each of these devices were in high demand and were run on thumbnail-sized semiconductors.

Thus, high consumer demand for low-end products, coupled with large orders from tech firms choked chip makers.

Moreover, the manufacturing facilities were shutdown due to the pandemic and lockdowns.

Similarly, when the pandemic began, **carmakers stopped requesting chips from suppliers** due to low demand for new vehicles. And now, as they ramp up production to meet consumer demand, chip makers are down on supply because they have cut deals with other industries.

**Russia- Ukraine Conflict**: Russia's invasion of Ukraine has strained exports of essential commodities used to make chip sets. Russia supplies rare materials like palladium, and Ukraine provides rare gases to make semiconductor fab lasers.

**Shift to 5G Technology**: Semiconductor companies have been gearing up to ramp up capacity for manufacturing advanced chips required by 5G Technology. They were already cutting down on the production of older chip systems. The pandemic and supply chain disruption exacerbated this shortage.

**Complex manufacturing systems**: Each segment of semiconductor manufacturing involves roughly 25 countries in the direct supply chain, and 23 countries in allied functions, according to a joint study by Global Semiconductor Alliance and Accenture. Due to this, the industry was unable to produce sufficient chips when the pandemic hit the world.

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**Defining Features of Semiconductor Manufacturing**

**Complexity**
Requirement of at least 300 high technology inputs

**Market Concentration**
Top 3 companies in each stage of the supply chain take in about 80-90% of the revenue.

**Large Investment**
High R&D Cost and advanced manufacturing in fabrication units

**Concentrated Supply Chain**
Concentrated in East Asia and the US. High degree of specialisation and susceptible to shocks

Created by: ForumIAS Editorial ©

**Manufacturing Practices**: Many manufacturing firms that use chips (especially in the automotive sector) keep minimum inventory of semiconductor chips. They practice **Just-in-Time (JIT) techniques** of manufacturing in order to cut down inventory (storage) costs. After the pandemic, as car manufacturers ramp-up their production, they don't have any spare chips.

### How have the companies responded to the semiconductor shortage?

Companies like Intel which design and manufacture their own chips too have started outsourcing some manufacturing to Taiwan Semiconductor Manufacturing Company (TSMC), the world's largest contract manufacturer for chips. Intel, Samsung, and TSMC have all announced new fabs in recent months but these will take years to build. This means the semiconductor shortage could linger for long, because companies are placing more orders and holding more inventory.

American carmakers Ford and GM are also getting into chip development to become self-reliant. Ford has signed a non-binding agreement with GlobalFoundries, whereas GM is working with a number of semiconductor companies like Qualcomm, STMicroelectronics, TSMC, and NXP Semiconductors.

### How has India performed in the Semiconductor sector?

India has done well in design and verification for the semiconductor industry, with most of the global semiconductor companies having an R&D footprint in India. However, **100% of India's**

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**chips, memory and display are imported. In 2020**, India spent US$ 15bn on electronic imports, with 37% coming from China.

Although India has two fabs — SITAR, a unit of the Defence Research and Development Organisation (DRDO) in Bengaluru and a semiconductor laboratory in Chandigarh. These build silicon chips for strategic purposes like defence and space and not for commercial use.

## What lies ahead?

**First**, the European Chips Act (€ 45 billion) and CHIPS for America Act (US$ 52 billion) would incentivise fab makers to set up their units in these regions and balance. Together, these two will enable the semiconductor manufacturers to have equal investments in the East and West by 2030, from the current tally at 80% in Asia, and 20% in Europe and the U.S.

**Second**, in Indian Context, the Government should **support businesses in acquisition of semiconductor manufacturing units in other countries.** This is easier than setting up a domestic facility and can be done swiftly for ensuring a continuous supply of chips.

**Third**, the Government should provide **adequate funding** to augment the **research and development** potential of technical institutes.   For instance, IIT Madras developed a microprocessor named 'Moushik' with funding support from the Ministry of Electronics and Information Technology. Microprocessor is an integrated circuit (IC) that contains a few millions of transistors (semiconductor-based electronic devices) fused on a semiconductor chip.

> **Read More**: Need of Indigenous Semiconductor Manufacturing Facilities in India – Explained Pointwise

## Conclusion

Countries must cooperate and collaborate with each other to boost the manufacturing of semiconductors. They are one of the most critical components to be used in the 21st century and it is almost impossible to imagine modern day living without them.

Source: **The Hindu**, **Indian Express**,

## India's GDP Growth for FY2021-22 – Explained, pointwise

## Introduction

The Ministry of Statistics and Programme Implementation has released the provisional estimates regarding India's GDP growth for the FY2021-22. According to the estimates, **India's economy grew by 8.7%** compared to the previous fiscal. In contrast, the economy had contracted by 6.6% in FY2020-21 when the pandemic had caused massive disruptions and widespread lockdowns. The data released also showed that the **Gross Value Added (or GVA) grew by 8.1%** in FY2021-22, although it had contracted by 4.8% in FY2020-21.

## About GDP and its Components

Gross Domestic Product (GDP) measures the value of all 'final' goods and services — those that are bought by the final user— produced in a country in a given period. It has four engines of growth in any economy.

**In India's case,** the biggest engine is **private consumption demand from individuals** — the money spent by people in their private capacity. This demand typically accounts for **56% of all GDP** and is technically called the '**Private Final Consumption Expenditure**' (PFCE)**.**

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The second-biggest engine is the **money spent by companies and government towards making investments** such as building a new office, buying a new computer or building a new road etc. This type of expenditure accounts for **32% of all GDP in India**; and is technically called '**Gross Fixed Capital Formation**' (GFCF).

The third engine is the money spent by the **Government towards its day-to-day expenses** such as paying salaries. This accounts for **11% of India's GDP**, and is called '**Government Final Consumption Expenditure**' (GFCE).

The fourth engine is in demand from '**Net Exports**' (NX)**.** This is the money spent by Indians on foreign goods (that is, imports) subtracted from the money spent by foreigners on Indian goods (exports). Since in most years India imports more than it exports, the **NX is the smallest engine of GDP growth and is often negative**.

So, GDP = PFCE + GFCF + GFCE + NX

## What is the difference between GDP and GVA?

The GDP calculates national income by adding up all expenditures in the economy. The GVA (Gross Value Added) calculates the national income from the supply side by looking at the value added in each sector of the economy.

## The two measures of national income are linked as follows:

GDP = GVA + Taxes earned by the Government — Subsidies provided by the Government

This shows if the government earned more from taxes than it spent on subsidies, GDP will be higher than GVA. If, on the other hand, the government provided subsidies in excess of its tax revenues, the GVA would be higher than the GDP. In simple words, GDP provides the demand side of the economy, and GVA the supply side.

## What are the key observations regarding India's GDP Growth?

At the aggregate level, in terms of GDP as well as GVA, the economy has gone past the pre-Covid level (FY2019-20). In other words, it has recovered **all the lost ground due to the contraction in FY2020-21**.

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## GVA AND GDP

■ 2019-20   ■ 2020-21   ■ 2021-22 (PE)

132   126   136         146   135   147

GVA in ₹ Lakh Cr
(constant prices)

GDP in ₹ Lakh Cr
(constant prices)

*Source: Indian Express*

However, the sub-components of GDP and GVA reveal the true extent of this recovery.

**GDP Sub components**: While the government's expenditures are more than 6% higher than FY19-20 levels, investments (with three times the weight) are up less than 4% and private demand (five times the weight) is just 1.4% above the FY19-20 level.

## SUB-COMPONENTS OF GDP

| Year | PFCE | GFCF | GFCE |
|------|------|------|------|
| 2019-20 | 82.6 | 46.1 | 14.8 |
| 2020-21 | 77.3 | 41.3 | 15.3 |
| 2021-22 (PE) | 83.8 | 47.8 | 15.8 |

*In ₹ lakh crore (at constant prices)*

*Source: Indian Express*

**GVA sub components**: While all sectors have shown an increase over FY20-21, different sectors of the economy tell a different story. Agriculture and allied sectors didn't undergo any contraction

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and continued to grow through the last two years. At the end of FY22, it was 6.5% higher than the pre-Covid level.

Manufacturing is up over 9% from pre-Covid levels. But there are other sectors (such as mining and construction) that either show a moderate increase or a deficit. The contact-intensive services such as trade and hotel etc. are still more than 11% below pre-Covid levels.

## SUB-COMPONENTS OF GVA

| | 2019-20 | 2020-21* | 2021-22** |
|---|---|---|---|
| Agriculture, forestry and fishing | 19.8 | 20.5 | 21.1 |
| Mining and quarrying | 3.2 | 2.9 | 3.3 |
| Manufacturing | 22.6 | 22.5 | 24.7 |
| Electricity and other utilities | 3 | 2.9 | 3.1 |
| Construction | 10.4 | 9.6 | 10.7 |
| Trade, Hotels etc. (services) | 26.9 | 21.5 | 23.9 |
| Financial, real estate etc. (services) | 29 | 29.6 | 30.9 |
| Public Administration and other services | 17.3 | 16.3 | 18.4 |
| GVA | 132.2 | 125.9 | 136.1 |

*(FRE) **(PE)                                                                    All figures In ₹ lakh cr

*Source: Indian Express*

### What is the significance of GDP Growth Data?

**First**, India's GDP growth rate has been impressive. The economy has shown a trend of sharp recovery. At the aggregate level, the economy has recovered to the pre-pandemic level. However, this recovery is **neither uniform nor broad-based**, Some sectors have performed well, but many other sectors continue to suffer from the after-effects of the pandemic. The recovery is being called a **K shaped recovery**.

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# Shapes of Economic Recovery



**V-Shaped Recovery**

Output (GDP)

Business Cycle Peak

New Peak

Average GDP

Recession Trough

Time
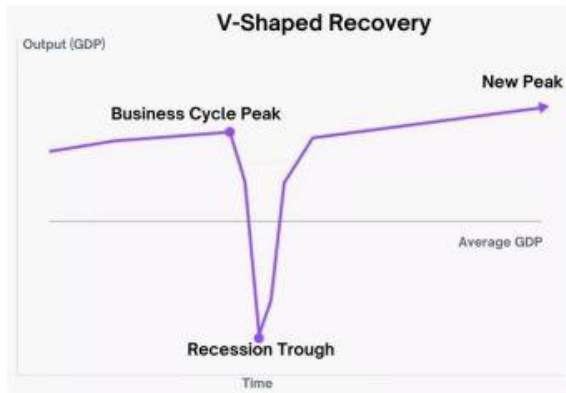
The economy experiences a sharp decline but **bounces back sharply** to its pre-recession level. There are minimal inter-sectoral disparities within the economy.

**K-Shaped Recovery**

Output (GDP)

Business Cycle Peak

Some sectors of the economy recovering

Average GDP

Recession Trough

Some sectors of the economy stagnating or sinking

Time
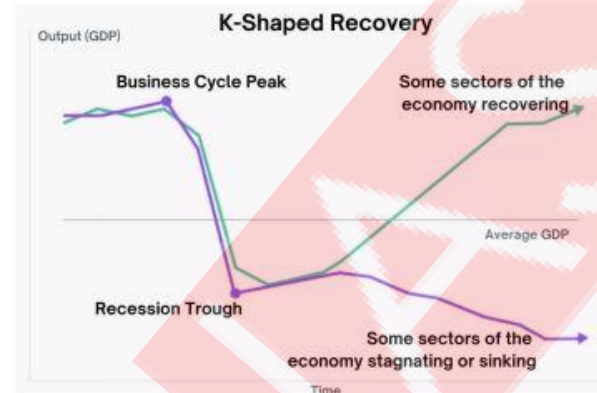
One segment of the economy recovers quickly (likely V-shaped) while the **other segment recovers much slowly** or becomes stagnant. The difference may be due to **systemic factors** or **existing inequalities** in access to resources.

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**Second**, the current growth can be classified as a '**recovery**' **only when compared to the pre-Covid level**. The current aggregate level of economy is much below the level of the pre-Covid growth trajectory. According to the RBI, if India's economy grows consistently at 7.5% (annually), the losses suffered due to pandemic can be recovered only by 2034-35.

**Third**, according to some experts, even the modest recovery (1.4% above pre-pandemic level) in aggregate private consumption is misleading. If the population growth over the 2-years is accounted for, the private consumption has actually fallen by 0.6% (adjusted for population growth).

**Fourth**, while India's GDP growth has been 8.7% on annual basis, there is considerable volatility at quarterly level. The quarterly growth trend has been 20.1% (April-June 2021), 8.4% (July-September 2021), 5.4% (October-December 2021) and 4.1% (January-Marcy 2022). Thus the recovery rate is actually slowing down.

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**Taking a hit**

India's GDP in Q4FY22 fell sequentially, impacted by unfavourable local and global factors.

GDP growth (in %)

Growth Rate consistently decreased each quarter of FY2021-22

6.1
4.1

Jun 2017                                                    Mar 2022

Source: Centre for Monitoring Indian Economy
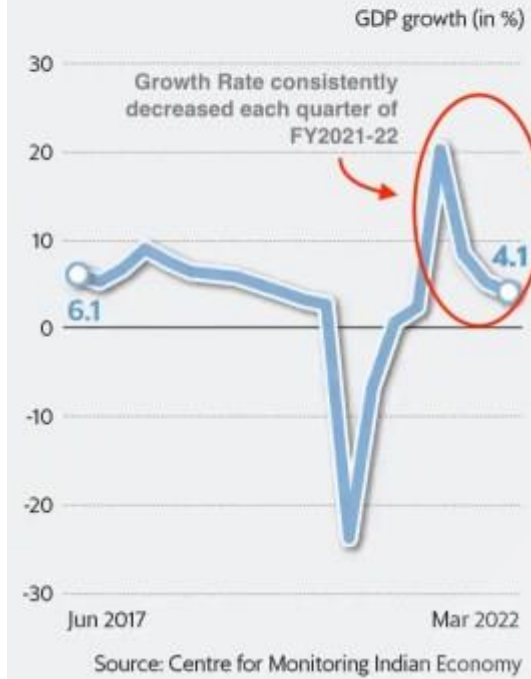
*Source: Mint*

**What are the challenges restricting India's GDP growth in future?**

**Continuation of Pandemic**: There are no clear signs that COVID-19 has been controlled across the world. Countries are still forced to impose lockdowns if the situation worsens as happened in China. This may impact sectors like travel, hospitality, airlines etc. industries, consequently impacting the economic recovery.

**Russia Ukraine Conflict**: It has sent global commodity prices soaring. Russia is a big exporter of commodities like crude oil, natural gas, fertilizers, sunflower oil and coal while India imports a huge amount of these commodities. The shortage could further push inflation and **reduce private consumption expenditure**.

**Inflation and Monetary Tightening**: The RBI recently hiked the repo rate by 40 basis points to 4.40% in order to control inflation. This has enhanced the cost of raising loans. The rate hike will disincentivize investment and creation of new ventures to propel the growth. Similarly, most central banks have already started aggressively tightening monetary policy. These actions have increased financial market volatility, which has had spillover effects on emerging economies, including India.

**High Unemployment Rate**: The reduced demand for products and rising input cost is resulting in huge layoffs in the private sector. The unemployment rate in the country grew to 7.83% in April from 7.60% in March, according to the Centre for Monitoring Indian Economy (CMIE) data.

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## What lies ahead?

**First**, inflation will continue to negatively impact consumption and is feared to **drive down economic growth** in the current financial year, at least as long as the war in Ukraine continues.

**Second**, the government should **focus on implementation of schemes like MGNREGA, NFSA 2013, MUDRA, PM Kisan etc.** in order to support the masses in tough times. This will help in reviving private consumption expenditure.

**Third**, the **tax compliance should be enhanced** by devolving more staff and resources to tax enforcement agencies. This will enhance government revenue thereby allowing them to spend more and raise government consumption expenditure.

**Fourth**, the RBI should **consider rate relaxation once inflation levels are down**. Similarly, there should be better enforcement of commercial contracts in order to attract private investment and enhance gross fixed capital formation.

## Conclusion

While economic activity is recovering at a modest pace, many sectors and segments still seem to be constrained by a weakness in demand and will require continued policy support. A coordinated policy response — fiscal, monetary, trade, industry — will be required for balancing the multiple macroeconomic policy objectives.

Source: **Indian Express**, **Indian Express**, **The Hindu**, **Mint**

## Right to Compensation (Against Wrongful Prosecution, Incarcerations, and Convictions) – Explained, pointwise

## Introduction

It was noted by the English jurist William Blackstone that *'It is better that ten guilty persons escape than that one innocent suffer'*. The principle has become a maxim in the modern jurisprudence. It highlights the importance of the protection of innocent people from wrongful legal actions. One of the major issue that troubles India's legal framework is that of wrongful prosecutions, incarcerations, and convictions and the lack of a statutory Right to Compensation from the State to the victims in such cases. India has one of the highest number of under-trial prisoners in India. In 2020, India was ranked 15 out of 217 countries on the basis of its under-trial population as per the World Pre-trial/Remand Imprisonment List. This indicates the magnitude of the issue.

## What are the statistics related to under-trials in prisons?

The data from the National Judicial Data Grid highlights that there are approximately 30.8 million criminal cases that are proceeding in the district courts of the country. Out of these, 8.05 million cases have been pending for more than 5 years. This implies that more than **25% criminal cases stay pending at the session's court level for more than 5 years**.

According to the latest data released by the NCRB (Prison Statistics India, 2020), out of India's total of 4,88,511 prisoners (December 2020); 371,848 persons **(76.1%) were under-trials** (persons who have been committed to judicial custody pending investigation or trial by a competent authority).

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The **Law Commission in its 277th Report (Wrongful Prosecution (*Miscarriage of Justice*): Legal Remedies, 2018)** has dealt with the issue of wrong prosecution in detail. The report observed that **25.1% of the total under-trials spent more than a year in prison** (based on Prison Statistics India, 2015).

The above statistics only give an idea about the people wrongfully incarcerated during the trial stage. In addition, there are some people who are **wrongfully convicted by lower courts but are subsequently acquitted by a higher court** e.g., in February 2022, Allahabad High Court acquitted a murder convict 40 years after his conviction by a lower court. The data from National Judicial Data Grid shows that **26.55% of appeals against convictions** have been pending before the High Courts **for more than ten years**.

Hence people who are wrongfully prosecuted, incarcerated, or convicted are made to suffer by the wrongful actions of the State. The State thus must have a legal obligation to compensate for the multiple social, economic, and legal suffering of the innocent people caused due to wrongful actions.

## 'Miscarriage of Justice'

The Law Commission in its 277th Report 'Wrongful Prosecution (Miscarriage of Justice): Legal Remedies' observes that the expression 'Miscarriage of Justice' is of wide amplitude:

- Errors in the interpretation, procedure, or execution of the law; typically, **errors that violate due process**, often resulting in the **conviction of innocent people**.

The Supreme Court has interpreted the term in multiple ways:

- *'Departure from the rules that permeates all judicial procedure'*.
- *'Misconception of law, irregularity of procedure, neglect of proper precaution'* leading to **some underserved hardship to individuals**.
- Lack of judicial approach, non-application of mind, non-consideration or improper consideration of material evidence.
- If a judgment is unreasonable, based on an erroneous understanding of the law and of the facts of the case.
- Non-compliance of the principles of Natural Justice.

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What remedies are available to a person against wrongful incarceration/conviction?
The legal framework in India **does not have a law on the grant of compensation** (Right to Compensation) to those maliciously prosecuted. However, Constitutional courts do exercise their powers sometimes to award monetary recompense.

**The remedy of a civil suit is available in law, but it is time-consuming.**
**Section 358 of the CrPC (1973)** provides for measly **compensation of INR 100** to a person wrongfully arrested. The compensation is to be recovered from a person on whose complaint the

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victim was wrongly arrested. Award of this compensation is subject to the discretion of the Magistrate.

The **Protection of Human Rights Act, 1993**, empowers the National Human Rights Commission to inquire into instances of illegal detentions, wrongful convictions, incarcerations, and other human rights violations. After conducting an inquiry, NHRC can recommend that the State pay compensation and initiate proceedings against erring officials.

The Law Commission in its 277th Report (2018), noted that '***the currently available remedies only create an ex-gratia obligation, and <u>not a statutory obligation on the State to compensate</u>***'. Thus, at present, the provision of compensation is subject to the discretion of the Judiciary (or NHRC), rather than a legal obligation of the Executive.

### What are the global standards regarding Right to Compensation?

The Right to Compensation for wrongful prosecution, incarceration, and convictions has been recognized by various international covenants. It has been enforced by various enactments, statutes, and acts in jurisdictions all over the globe.

The **International Covenant on Civil and Political Rights (1966)** lays down the basic commitments that State parties need to adhere to protect the civil and political liberties of the individual. The **Right to Compensation for Wrongful Convictions** is laid down in **Article 14(6) of the Covenant**.

Article 5(5) of the **European Convention for the Protection of Human Rights and Fundamental Freedoms** also talks about Compensation for wrongful arrest.

## Cases Related to Compensatory Jurisprudence

- ***Rudal Sah v. State of Bihar (1983)***: The Supreme Court of India interpreted the Article 32, to include a **Right to Compensation for victims of unlawful imprisonment**. In this case, the petitioner was acquitted in June 1968, but was kept incarcerated in jail till October 1982 (14 years). The Court had granted INR 35,000 in compensation.

- ***Bhim Singh, MLA vs. State of J&K and Ors. (1986)***: The Supreme Court awarded a sum of INR 50,000 as compensation for the illegal detention of an MLA who was deliberately prevented from attending a session of the Legislative assembly. The Court said illegal detention **violated the rights provided under Article 21 and Article 22(2)**.

- ***Nilabati Behera v. State of Orissa (1993)***: The petitioner's son was taken into police custody and killed. The SC utilized Article 32 to grant monetary compensation.

- ***S. Nambi Narayanan vs Siby Mathews & Others (2018)***: Former ISRO scientist Nambi Narayanan was awarded compensation of INR 50 lakhs, 24 years after he was unlawfully detained on charges of revealing official secrets to a spy network.

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### What is the need for Right to Compensation against wrongful arrest?

**First**, a person experiences **extreme physical and mental discomfort** while being imprisoned. It **undermines Article 21** of the Constitution i.e Right to a dignified life. This discomfort is

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exacerbated by the slow disposal rate of the judicial system. A wrongful arrest also violates Article 22 (protection against arbitrary arrests and illegal detention etc).

**Second**, wrongful imprisonment can have a **deep psychological impact** on the victim. A study undertaken at the University of Cleveland (US) showed that long incarceration in jail leads to feeling of loss of freedom, loss of identity and dignity and a feeling of rage and anxiety. These effects eventually cause development of Post-traumatic Stress Disorder (PTSD), depression and paranoia. The consequences impact the ability of the victim to lead a normal life even after absolution.

**Third**, the incarcerated person suffers from damage to health, loss of income or earnings, loss of property due to costs of legal fees, and other consequential expenses resulting from the wrongful prosecution. There is loss of family life and **loss of opportunities** (like education, future earning abilities).

**Fourth**, a person and his family face **social boycott and harm to reputation** in society owing to the stigma attached with imprisonment. Acquittal at a later stage doesn't completely restore the lost prestige.

**Fifth**, a Right to Compensation will help in **reducing the quantum of malicious prosecution** by the State authorities. For instance, many people are wrongfully booked under **Section 66A** of the IT Act that has been declared unconstitutional by the Supreme Court.

Although the State cannot return the lost years, family life, opportunities, etc to the victim, it still can **help the victim to reintegrate back into the society** by providing pecuniary and non-pecuniary assistance for the same.

## What should be the approach going ahead?

**First**, the Parliament must **enact a law based on the various recommendations of the Law Commission** (277th Report). The law should create a **uniform compensatory framework**. The report recommends the creation of a statute laying down the conditions, amounts, procedure, etc of awarding compensation to innocents. The main highlights of the recommendations include: **(a)** The **creation of a special court in each district** for claims. This would ensure speedy and efficient disposal of cases; **(b)** The report also highlighted that the compensation under the statutory framework would include both pecuniary and non-pecuniary compensation; **(c)** A specific provision for removing disqualifications attached to a prosecution or conviction is also imperative to dispel the social stigma that is attached to the victim because of the criminal proceedings.

**Second**, a proactive role needs to be played by the **non-governmental organizations** to help the victims of such wrongful acts approach the appropriate courts and claim their respective rights.

**Third,** the statutory framework as enacted by the Parliament must also have provisions for **providing non-pecuniary awards to the immediate families** of victims of wrongful prosecutions, incarcerations and convictions.

**Fourth**, there should be an enhanced **focus on training of law enforcement officials** to reduce the cases of wrongful arrests. Apart from this, prosecutors and judiciary can also play a positive role in reducing the quantum and duration of wrongful arrests.

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**Fifth**, appropriate steps are required to reform the criminal justice system, reduce the pendency of cases and undertake judicial reforms. Pendency of cases is increasingly consistently every year, and yet there has been little action by the Judiciary, Legislature and Executive.

## Conclusion

The Indian legal system is overburdened with an excessive number of criminal cases; and in such a scenario it becomes all-the-more necessary for the State that it protects the rights of innocents. In this regard, a statutory framework for providing compensation to the victim and his/her family is an urgent need of the Indian legal system.

Source: **The Hindu**, **The Leaflet**, **IJLMH**


**[Yojana May Summary] Empowering Divyangjan – Explained, pointwise**


## Introduction

The Prime Minister coined the term "*Divyangjan*" to address persons with disabilities. The rationale was to change the social attitude towards them and recognise their potential. The renaming has also helped put the issues related to divyangjan at the forefront of Government initiatives. India, being a signatory to the **United Nations Convention on Rights of Persons with Disabilities**, has rolled out numerous initiatives to uplift the position of divyangjan. These have attained a significant degree of progress, however much more needs to be done for creating an equitable and inclusive environment for them.

## What is the meaning of disability?

The WHO defines disability as 'any restriction or lack (resulting from an impairment) of ability to perform in a manner or within the range considered normal for a human being'. Disability is a complex concept and is difficult to define since it varies in type, form and intensity. The WHO notes down the impact of external factors by referring to disability as the **interaction between individuals with a health condition** (e.g., cerebral palsy, Down syndrome and depression) and **personal and environmental factors** (e.g., negative attitudes, inaccessible transportation and public buildings, and limited social supports).

The World Report on Disability, 2011 sums up various definitions of disability by stating 'Disability is complex, dynamic, multidimensional, and contested'.

According to the WHO, one billion people, or 15% of the world's population, experience some form of disability. The number of people experiencing disability is increasing due to a rise in chronic health conditions and population ageing. The prevalence of disability is higher in the developing countries; 80% of the persons with disability live in low- and middle-income countries.

As per Census 2011, in India, about 2.68 Cr persons are 'disabled' which is 2.21% of the total population. Out of 2.68 crore, 1.5 crore are males and 1.18 crore are females. Majority (69%) of the disabled population resided in rural areas. Among the State/ UTs, Sikkim has the highest prevalence of disability (2.98%). Daman and Diu has the lowest prevalence of disability (0.9%)

## What is the institutional framework to support the divyangjan?

**Department of Empowerment of Persons with Disabilities (DePwd)**: It is under the Ministry of Social Justice & Empowerment and facilitates the empowerment of persons with disabilities.

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The Department has 9 **National Institutes** and 21 **Composite Regional Centres** which are spread across 28 States/UTs. While each of the National Institutes works with respect to a specific category of disability, the Composite Regional Centres provide rehabilitation services across all categories of PwDs.

The National Institutes are related to Visual disabilities (Dehradun), Hearing disabilities (Mumbai), Intellectual disabilities (Secunderabad), Multiple disabilities (Chennai), Physical disabilities (New Delhi), Rehabilitation Training and Research (Cuttack), Locomotor Disabilities (Kolkata), Indian Sign Langauge Research & Training Centre (New Delhi) and Mental Health and Rehabilitation (Sehore, MP).

## What are the problems faced by divyangjan?

**Education:** The education system is not inclusive. Inclusion of children with mild to moderate disabilities in regular schools has remained a major challenge.

**Health**: A large number of disabilities are preventable, including those arising from medical issues during birth, maternal conditions, malnutrition, as well as accidents and injuries. Yet lack of proper medical care fails to check these factors.

**Employment:** Even though many disabled adults are capable of productive work, disabled adults have far lower employment rates than the general population. The situation is worse in private sectors, where much less disabled persons are employed.

**Accessibility**: Physical accessibility in buildings, transportation, access to services remains a major challenge.

**Discrimination/Social Exclusion**: Negative attitudes held by the families of the disabled, and often the disabled themselves, hinder disabled persons from taking an active part in the family, community or workforce. People suffering from mental illness or mental retardation face the worst stigma and are subject to severe social exclusion.

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## Barriers to Healthcare

According to WHO, people with disability encounter a range of barriers in accessing health care

### ✓ Attitudinal Barriers

- Prejudice, stigma, discrimination by health service providers.
- Service providers lack knowledge about needs of the disabled.
- Women with disability face barriers to sexual, reproductive health services and information.

### ✓ Physical Barriers

- Lack of appropriate infrastructure to access healthcare facilities like ramps to access passages, doorways, toilets on wheelchairs.
- Fixed-height furniture, including examination beds and chairs, can be difficult for people with disability to use.
- Lack of healthcare facilities in remote areas.

### ✓ Communication Barriers

- Limited availability of written material or sign language interpreters at health services for persons with hearing impairment.
- Lack of information and prescription in accessible formats, like Braille or large print for persons with vision impairment.

Source: WHO

### ✓ Financial Barriers

- Over half of all people with disability in low-income countries cannot afford proper health care.
- Inability to afford the costs associated with travelling to a health service and paying for medicine.

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**What steps have been taken by the Government for the upliftment of divangjan?**

**The Rights of Persons with Disabilities Act, 2016**: The act, increased the number of disabilities from 7 to 21. It made provision for reservation in higher education and government jobs. It mandated free education for children between 6 to 18 years. It also mandates the Government to take measures to promote health, education, skill development, and employment opportunities for PwDs.

**The Unique Disability Identity (UDID) Project**: It aims to create **a national database** for Persons with Disability (PwD) and to issue a Disability Identity Card to such persons.

**Accessible India Campaign**: It focuses on accessibility in the built-up environment, transportation system, and ICT ecosystem.

**Early Intervention Centres**: These centres are equipped with facilities for screening at-risk cases, providing therapeutic services such as speech therapy, occupational therapy, physiotherapy, behavioural therapy, parental/peer counselling. They also provide preparatory schooling for enhancing the cognitive and physical abilities of children with disabilities.

**Indian Sign Language Research and Training Centre:** It promotes the use of sign language and also to develop human resources in the field.

**National Institute of Mental Health Rehabilitation (NIMHR)**: It aims to work towards capacity building in the field of mental health rehabilitation. It also aims to develop community-based rehabilitation protocols for mainstreaming persons with mental illness who have been successfully cured.

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**New Education Policy 2020**: It is in tune with the provisions of the RPwD Act, 2016 and has the ingredients for inclusive education. The Policy is expected to ensure barrier-free access to education for children with disabilities.

**Assistance to Disabled Persons for Purchase/Fitting of Aids and Appliances (ADIP) scheme**: Under this aids and assistive devices are distributed to divyangjan to improve their mobility so that, apart from carrying out daily living activities independently, they can also go to work and earn a living.

> **Read More**: Measures taken by the Government for the disabled community

## What has been the progress of Government's initiatives?

**UDID**: So far, **around 70 lakh UDID cards** have been generated in 715 districts across India.

**Accessible India Campaign**: Under the Campaign, about 577 State Government buildings and more than 1030 Central Government buildings have been made accessible. Further, 603 State Government websites and 95 Central Government websites have already been made accessible. *Sugamya Bharat* App has also been developed which is a mobile application for crowdsourcing problems related to accessibility.

**Early Intervention Centres**: 14 EICs have been set up at its National Institutes/Composite Regional Centres of DePwd. These are located in Delhi, Dehradun, Lucknow, Sundernagar, Patna, Bhopal, Mumbai, Kolkata, Cuttack, Rajnandgaon, Secunderabad, Nellore, Chennai, and Kozhikode.

**Indian Sign Language Research and Training Centre**: The institute has so far developed about 10,000 sign language expressions of various words and phrases. It provides a reference point for various users and has become a boon for the deaf community. The institute has also signed an MoU with NCERT for converting the school curriculum of Class I to XII into Indian sign language.

**ADIP Scheme**: Since 2014-15, under this programme 11,973 camps were organised benefitting 21.90 lakh persons with disabilities across the country. The Government has also initiated **a special recruitment drive for persons** with disabilities in Central Government establishments and more than 14,000 vacancies have been filled, out of about 15,700 reported vacancies.

## What further steps can be taken?

**First**, the government should move towards **digitizing all existing manual certificates** of disability onto the portal at the earliest possible time in consultation with the States and UTs.

**Second**, the government should work towards **unleashing the talent among divyangjan**. They are full of potential and hard work, evident from the fact that India won 19 medals including 5 Gold medals in the Tokyo 2020 Paralympics. The government should also ensure that platforms like ***Divya Kala Shakti*** are fully functional and accessible. It is a platform for showcasing the potential of PwDs in performing fine arts.

**Third**, **Preventive health programs** need to be strengthened and all children should be screened at a young age. Kerala has already started an early prevention programme. The Comprehensive Newborn Screening (CNS) programme seeks early identification of deficits in infants and reduces the state's burden of disability.

**Fourth**, there should be more budgetary allocation for welfare of the disabled. There should be **disability budgeting** on the lines of gender budgeting.

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**Fifth**, divyangjan need to be better integrated into society by overcoming stigma .There should be awareness campaigns to educate and aware people about different kinds of disability. Success stories of people with disabilities can be showcased to inculcate positive attitudes among people.

## Conclusion

India has been known across the world as having a composite and inclusive culture since ancient times. Indian culture believes in inclusiveness, integration and harmony, and thrives on the principle of *Vasudhaiva Kutumbakam*. This makes it imperative for the government to work relentlessly for the empowerment of divyangjan.

Source: Yojana May 2022, **WHO**


### Universal Basic Income: Benefits and Challenges – Explained, pointwise

## Introduction

The Economic Advisory Council (EAC) to the Prime Minister released a report on inequality prepared by the Institute for Competitiveness. The broad focus of the report was on the nature of inequality and poverty in the country. Two suggestions given by the report have become a matter of discussion among the economists. The Report advocates fallback job options for urban Indians along the lines of the Mahatma Gandhi National Rural Employment Guarantee Scheme for rural Indians. The Report has also supported the provision of Universal Basic Income as an elementary safety net, an idea that is still considered somewhat radical by many policy makers.

## What is Universal Basic Income?

It is a guaranteed regular cash transfer by the Government to all citizens irrespective of their income or financial condition. As a universal safety net, UBI will be applied to all individuals, irrespective of income and age. The Economic Survey (2016-17) had noted that the UBI has 3 components namely; **universality**, **unconditionality**, and **agency**. *Universal*: UBI will cover all citizens, *Unconditional*: UBI has no criteria to select the beneficiaries, *Agency*: Providing support in the form of cash transfers to respect, not dictate, recipients' choices.

UBI is supposed to be **easily accessible**, **periodic**, in the form of funds (and not vouchers or coupons) and is paid to individuals not households.

Since governments commit to a legally stipulated and equal financial grant, it is also **considered to be a form of social welfare**, especially for those who are unemployed, sick and at the end of their working life.

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## Earlier Proposals on UBI in India

Officially, a UBI plan was first suggested in the Economic Survey of 2016-17.

- It proposed to provide INR 7,620 per annum to **75% of the population**, based on the official poverty line from 2011-12.
- Subsequently updated twice, the plan advocated for a fixed sum to each rural household, except those which were '*demonstrably well-off*'.
- However, the Finance Minister back then had said the **plan would face operational and political challenges**.

In 2020, Economics Nobel Laureate Abhijit Banerjee said India should immediately begin cash transfers of INR 1,000 per person per month as an ultra-basic version of UBI.

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What has been the global experience with respect to Universal Basic Income?

In 2020, countries worldwide resorted to cash transfer to help vulnerable citizens cope up with the economic turmoil posed by the pandemic. Among the **developed economies,** where economic growth had stagnated, most cash transfers schemes have **broadly adhered to the principles of UBI.**

Canada, provided $1,400 per month to those who lost income due to the COVID-19 pandemic.

The United States offered its citizens cheques of US$ 1,200 for individuals or US$ 2,400 for those who were married.

South Korea issued cash transfers of US$ 820 for its citizens and Japan announced cash transfers of US$ 931 per person.

The **Arab Monetary Fund,** which includes poorer economies like Iraq, Somalia, and Libya, have reached a consensus on the implementation of UBI set at 10% of the per capita income.

The birthplace of the idea of modern nations providing direct cash to stimulate growth and ensure minimum living standards is the **Scandinavian region of Europe** – Denmark, Norway, Finland and Sweden. These nations implemented their own variety of Nordic welfare systems back in the 1970s at a time when none of them were considered rich.

### What are the major social safety measures in India at present?

India spends about 2% of its GDP on core social protection and welfare schemes. This translates into an expense of INR 9 lakh crore in more than 10,000 schemes. This amount does not cover the high set-up costs and expenditure in maintaining the systems (including manpower) to administer them.

Annual budgets for some of India's key flagship welfare schemes amount to INR 379,100 crore per year. These include MGNREGS, PM Kisan Samman Nidhi Yojana (PM Kisan), and National Social Assistance Programme, among others.

### What are the perceived benefits of implementing Universal Basic Income?

**Tackling Extreme Events**: A basic income support to everyone will help the masses in developing strong resilience against extreme events like COVID-19 Pandemic, or other shocks like natural disasters (floods, tsunami, earthquakes etc.). Multiple reports have shown that most

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of the rural poor have become financially vulnerable while the poorest of the poor are virtually going hungry because of pandemic impact.

Similarly, UBI will help the **masses face price shocks** arising due to global conflicts. The Russia Ukraine conflict has pushed up the oil prices which has increased inflation levels in India.

**Economic Revival**: The recent pandemic has forced shut many enterprises and resulted in huge layoffs. This has diminished the consumption demand in the economy, UBI can be helpful in reigniting the demand and revive the economy.

**Ensuring Dignity**: An assured periodic cash transfer would allow every individual to live a more dignified life thereby upholding the Right to Life under Article 21.

**Social Justice**: A society that fails to guarantee a decent minimum income to all citizens will fail the test of justice. Hence UBI, by guaranteeing a minimum unconditional income, promotes social justice.

**Promotes efficiency**: UBI seeks to replace the existing myriad subsidies given by the government under its social welfare schemes that are riddled with **misallocation, leakages and inclusion/exclusion errors.** The Economic Survey (2016-17) noted that 7 of the top government schemes suffer from acute misallocation of funds while ignoring the poorest districts in many states. Further, there is **ineffective programme communication** that means beneficiaries are not well aware of their entitlements, eligibility criteria, and delivery mechanisms. **UBI will ease the implementation**. There will be no exclusion errors. Implementation costs will come down due to direct transfer of cash through existing systems and infrastructure.

## Issues with India's Welfare Programmes

**Coverage of schemes varies widely in enrolment and delivery**. A survey undertaken in April 2020, covering Below Poverty Line (BPL) families across 10 states revealed:

- **Coverage is not universal**. The gaps in coverage varied according to the scheme: PDS (15%), *Jan Dhan* (43%), Social Pension (56%), and PM *Kisan* (66%).
- **Delivery of benefits is low**. The percentage of eligible households that received their entitlements: PDS (55%), Social Pension (34%), PM *Kisan* (30%), and *Jan Dhan* (28%).
- These gaps are largely on account of:
  - Eligibility challenges.
  - Lack of awareness. 52% of the surveyed beneficiaries were unaware about their entitlements.
  - Onerous administrative procedures. In addition, there are huge costs in implementing the schemes.

Communication is the **most overlooked components** of welfare programmes. Effective programme communication ensures that beneficiaries are well aware of their entitlements, eligibility criteria, and delivery mechanisms.

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**More Choices:** UBI is not tied to the recipients' behavior, and they are free to spend the money as they wish. This is in contrast to the conditional in-kind transfers that limit the options for beneficiaries. UBI will entrust them with the responsibility to devise their own spending proportions for utilities and other goods

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## What are the challenges in implementing Universal Basic Income?

**Fiscal Stress**: Implementation of UBI would require a huge amount of money which is difficult to arrange considering the widening fiscal deficit of the Government. Covering about a billion beneficiaries would cost INR 12 trillion (annual) just for each adult to get a monthly INR 1,000 (or INR 12,000 annual). According to different estimate, a transfer of INR 10,000 per annum will cost around 10% of GDP to the exchequer whereas all current welfare schemes putting together costs ~ 5.2% of GDP.

**Subsidy Withdrawal:** Post UBI the government may **phase out critical subsidies** like power, water, fertilizer etc. which may cripple many enterprises in the agriculture and industrial sector.

**Universal Nature**: Further, a UBI would require providing benefits to also about 78% of the population who do not fall in the poverty bracket. This means the amount paid to each individual may be too small to have any significant impact on people's lives. Moreover, the universality of the transfer does not address the aspect of equity.

**Improper Human behavior**: Recipients might misuse the money they receive and undermine social security objectives. Further UBI will induce people to work less or create a disincentive to work. Although, the opinion of economists is divided here. A 2018 study on the behavioural effects of cash transfers found just a 1% drop in labour supply induced by a 10% income boost.

## What should be the approach going forward?

**First**, The government **can rethink true universality**, as the well-off can be omitted from the cash transfer schemes. There can be automatic exclusion of certain class of citizens (like possession of certain assets).

**Second**, after deciding the quasi basic income criteria, the Government should leverage the potential of JAM trinity (biometric identification, financial inclusion, and mobile penetration) for directly transferring cash to household bank accounts.

**Third**, it must be embraced in **a deliberate and phased manner**. Gradualism can be adopted in following ways: **(a)** Giving choice to individuals between UBI and existing schemes; **(b)** UBI for women only; **(c)** Universalize UBI across some specific vulnerable groups only like for widows, pregnant mothers, the old and the infirm; **(d)** UBI in urban areas only which have good banking infrastructure and financial inclusion; **(e)** UBI for a class of sections like implementing for the poor at the bottom 25%.

**Fourth**, focus should be placed on **equitable access to education** and **creation of more jobs** along with a vision to attain a long term growth rate. This would be more beneficial in poverty and inequality reduction rather than merely giving guaranteed incomes.

## Conclusion

It may not not be feasible to have a basic income that is universal or to substitute existing welfare subsidies. A UBI in India could be implemented as a supplemental, unconditional, recurring cash transfer to the target population while keeping the existing welfare infrastructure intact. UBI can be a potent complement to broader poverty eradication programmes

Source: **Mint**, **The Times of India**, **The Leaflet**, **Money Control**

**Judicial Accountability in India – Explained, pointwise**

## Introduction

The High Court of Odisha has published a one-of-a-kind annual report of its performance in 2021. By the standards of the Indian judiciary, this is a rare exhibition of transparency. The report outlines the performance of the High Court and the lower judiciary in the State. The Chapter 'Introspection and Challenges' in the Report observes, "*For any institution, introspection is necessary to overcome the drawbacks and to enhance efficiency.*" With this report, the High Court has brought some transparency in its functioning and has subjected itself to the scrutiny of the common citizen. This has brought the issue of judicial accountability into the limelight and might induce other courts to follow higher standards of transparency and accountability.

## What are the salient observations in the Report?

The Report provides **detailed view of breakup of cases** (cases pending at the start of the year, new cases, disposed cases, cases pending at the end of the year) for each District Court. It also provides the break-up of sanctioned strength and available Judges for each Court.

It contains a section **explaining the reasons for delays and backlog** at the district level . The tendency of higher courts to "stay" proceedings, the uneven distribution of cases amongst judges in trial courts and the non-availability of witnesses due to transfers are among the major reasons cited by it for delays. It also sheds light on the administrative functioning of the Court.

The Report also lists the **initiatives undertaken by the Court**, e.g., the initiatives to address the digital divide in the judiciary. Order Communication Portal (OCP) enables digital sending of High Court orders to subordinate courts thus reducing time for subsequent action.

## What is the meaning of Judicial Accountability?

The term Accountability means being responsible for decisions or actions. Generally, it means being responsible to any external body. Transparency in the functioning and decision-making process is one of the crucial aspect that ensures accountability.

The term judicial accountability thus means that the judges are responsible for the decisions they deliver. It also means that Judges be held accountable for their conduct.

The Judiciary is not subjected to the same level of accountability as the Executive or the Legislative wings of the Government. The reason is that the **principles of Judicial Independence and Accountability are sometimes regarded as fundamentally opposed to one another**. Judicial independence is considered 'an essential pillar of liberty and the rule of law'. So if Judiciary is made accountable to the Legislature or the Executive it will impact its Independence. So special provisions have been provided to ensure judicial accountability.

## What is the current framework of Judicial Accountability in India?

The **Constitution of India** provides for the removal of the judges of the Supreme Court of India and the High Courts for **misbehaviour and incapacity** by means of impeachment. The provisions of impeachment have been provided in the **Article 124(4)** (SC Judge) and **Article 217(1)(b)** (HC Judge) of the Constitution. To date, only one impeachment proceeding was initiated against a Supreme Court judge but the procedure failed. Similarly, no High Court Judge has been impeached so far.

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**Judges (Inquiry) Act, 1968** was passed to regulate the investigation procedure and to find proof showing incapacity and misbehavior on the part of the judges of the Supreme Court and the High Courts.

**Article 235 of the Constitution** provides for the **'control' of the High Court over the subordinate judiciary**. It provides an effective mechanism to enforce accountability of the lower judiciary.

The Supreme Court of India adopted a Charter called the **Restatement of Values of Judicial Life** in 1997. It is the restatement of the pre-existing and universally accepted norms, guidelines and conventions observed by Judges. All the High Courts of the country have also adopted the same. The Charter contains guidelines for general behaviour of the Judges. However, it is not an instrument of judicial accountability in strictest terms.

A resolution of the Supreme Court in December 1999 declared that an '**in-house procedure**' would be adopted to take action against judges who act against accepted values of judicial life. In case of a complaint against a judge, the procedure allows the Chief Justice of that Court to set up an inquiry with a 3-judge committee. If the allegations are serious, the committee may recommend initiating proceedings for removal.

## Restatement of Values of Judicial Life, 1997

The Supreme Court had adopted the Charter in 1997. It has 16 points, the salient points include:

- The behaviour and conduct of members of the higher judiciary must **reaffirm the people's faith in the impartiality of the judiciary**. Justice must not merely be done but it must also be seen to be done.
- A Judge should not contest the election to any office of a club, society or other association.
- **Close association with individual members of the Bar**, particularly those who practice in the same court, shall be eschewed.
- A Judge should **not permit any member of his immediate family**, if a member of the Bar, to appear before him or even be associated in any manner **with a cause to be dealt with by him**.
- No member of his family, who is a member of the Bar, shall be permitted to use the residence in which the Judge actually resides or other facilities for professional work. A **Judge shall not hear and decide a matter in which a member of his family**, a close relation or a friend is concerned.
- A Judge shall not enter into public debate or express his views in public on political matters.
- A Judge shall not accept gifts or hospitality except from his family, close relations and friends.
- A Judge **shall not speculate in shares, stocks** or the like. A Judge **shall not hear and decide a matter in which a company in which he holds shares** is concerned unless he has disclosed his interest and no objection to his hearing and deciding the matter is raised.

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## What is the need to enhance Judicial Accountability?

**First**, it will induce the judges to **improve efficiency** and **deliver quality judgements** thereby **ensuring justice** in the society. There have been several '*shocking*' judgments in recent times e.g., a Bombay High Court Judge ruled that groping a child without 'skin-to-skin contact with sexual intent' does not amount to the offence under the POCSO Act.

**Second**, It will help in ensuring **an impartial functioning** that would **augment public trust** in the institution of judiciary. For instance, a major controversy erupted when a sitting Chief Justice of India was accused of sexual harassment. The CJI, instead of ordering external enquiry, set up an internal Committee to look into the matter. The CJI himself appointed the Judges, raising

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concerns of conflict of interest. The Committee absolved him, while the complainant was not allowed to be represented by a lawyer.

**Third**, the **scope of information** which the courts are willing to share **under RTI is not too wide**. For instance, the Bombay High Court recently ruled that its 'file notings' on administrative matters are not required to be disclosed under the RTI Act. The reluctance of Judiciary to subject itself to greater transparency became evident when a former CJI remarked that the "*institution of Judiciary can't be destroyed in the name of transparency*".

**Fourth**, Unlike the executive, the judiciary is **not under any legal obligation to prepare annual reports** or table them before Parliament or the State Legislature. Only the High Courts of Madras, Himachal Pradesh and Tripura had published an annual report in the last two years.

**Fifth**, there exists **no provision in the Indian Constitution which directs in reviewing the Supreme Court's decision**. Except for the Supreme Court itself, there exists no other body or council to have a check on the decisions passed by the Apex Court.

**Sixth**, in the **absence of any accountability**, the **pendency of cases has reached unprecedented levels** (> 4 Crore cases in lower courts). Since, Judges are not accountable to the people or to any other organs of the State, no concrete action has been undertaken to address this pendency. Judicial Accountability might have provided an element of external pressure on the Judiciary to reduce pendency.

**Seventh**, the **process of appointment of judges to higher judiciary lacks transparency**. There is no visibility about what importance is given to credentials of judges in their ideological adherence to the constitutional ideals of a secular, socialist democratic republic etc.

**Eighth**, there are several **shortcomings in the in-house procedure**. There is no statutory basis for the procedure. No judge (who faced such committee) has agreed to resign because there was an adverse report by the committee. In some cases, allegations requiring further investigation were dismissed by such committees.

**Ninth**, a prominent news portal reported that in 2019, only 7 Judges of the Supreme Court voluntarily declared their assets. So self-regulation appears to have some limitations.

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# Judgements Related to Judicial Accountability

- **S.P. Gupta v. Union of India**: The Supreme Court agreed that **Judiciary is accountable to the public** to answer queries related to the decisions they take for the interest of the public. This has been granted to the public by Article 19(1)(a) of the Constitution.

- **C. Ravichandran Iyer vs Justice A.M. Bhattacharjee**: The Supreme Court held that an **in-house "peer review" procedure** could be laid down for **correcting deviant behaviour**. Where the allegations do not warrant removal, the in-house mechanism could impose "minor measures".

- **K. Veeraswami v. Union of India**: The SC held that no Judge of superior court could be subjected to a criminal investigation **without the written permission of the Chief Justice of India**. Justice Veeraswami had assets vastly disproportionate to his income. Due to this judgment, it has been very rare that a judge has been subjected to investigation.

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## What are the challenges in enhancing Judicial Accountability?

The most important challenge for the regulation of judicial accountability is that the judiciary is an independent organ and the **independence of the judges** cannot be done away with. Any attempt to make the Judiciary accountable to the Legislature or Executive will make it susceptible to external pressure. It is very difficult to balance the Judicial Accountability vis-a-vis Judicial Independence.

There exists no other way in which a judge can be removed except through **impeachment** and the process is long and complex. Due to this, it is difficult to augment judicial accountability. Again, the process can't be diluted as it will impinge on judicial independence**.**

**Moreover,** the SC and HC have the **power of contempt** that prevent imposition of anything on the judiciary without their consent. The judiciary is the **final interpreter of laws, policies, rules etc.** and can easily strike down anything as per its will.

## What steps can be taken to enhance Judicial Accountability?

**First**, Parliament **can enact a law that mandates Judiciary to publish an annual report**. This law should clearly outline the expected content of the report and establish a clear timeline for its publication.

**Second**, In India, the **Judicial Standards and Accountability Bill** was floated in 2010, but eventually lapsed. A new Bill on setting judicial standards is necessary. As suggested by a former Chairperson of the Law Commission, the new Bill must address the concerns with the old Bill and should avoid giving excessive control to the Legislature or the Executive.

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A **permanent disciplinary committee** should be set up at the central level to deal with complaints against judges. This committee should recommend further course of action based on the seriousness of misconduct (e.g., setting up a judicial inquiry committee under the Judges Inquiry Act for major misconduct).

**Third**, the SC should **clarify the extent and scope of RTI applicability** to the judiciary. This will help in avoiding divergence in RTI response across the states.

**Fourth**, the judiciary **can also be brought under the scope of Lokpal** to enhance accountability as seen in countries like Sweden where judiciary comes under the scope of the ombudsman.

**Fifth**, a **regular performance evaluation system** for judges should be established. There is a mechanism of evaluation at lower judicial level. There is no performance evaluation for higher judiciary. It is difficult to create such a system. Best practices from global experience can be suitable adapted as a first step.

## Conclusion

The actual challenge is to grant as much judicial independence as is necessary to have cases adjudicated impartially and neutrally. Maintaining this equilibrium between accountability and independence is the real task at hand. The Odisha High Court's step is the first step in this regard, however much more needs to be done.

Source: **Indian Express**, **Indian Express**, **Indian Institute of Legal Studies**


## Open Network For Digital Commerce (ONDC) – Explained, pointwise


## Introduction

The fast-expanding digital economy has been one of the major supporting pillars of India's growth in recent times. India has the world's highest fintech adoption rate of 87%, as compared with the global average of 64%. **3 of the largest public digital platforms in the world are from India**: **Aadhaar** is the largest unique digital identity platform, **Unified Payments Interface** (UPI) is the largest digital payments ecosystem, and **Co-Win** is the largest vaccination platform. Realizing the potential of digital space, the Government of India has launched Open Network For Digital Commerce (ONDC) as a prospective alternative to dominant global giants **Amazon.com** and Walmart in its fast-growing e-commerce market.

## What is the background of ONDC?

The idea of ONDC was conceived and has been widely discussed since April 2020, soon after the first wave of COVID. During this time, ensuring essential supplies across containment zones was found to be a challenge. Therefore a need was felt to alter the current digital commerce approach of 'scaling what works' to a new approach of 'what works at scale'.

On December 31, 2021, ONDC was incorporated as a **private sector, non-profit (Section-8) company** to **democratize e-commerce in India** and offer alternatives to proprietary e-commerce sites.

ONDC was incubated by the Department for Promotion of Industry and Internal Trade (DPIIT) at the Quality Council of India. A nine-member advisory council, including Nandan Nilekani from Infosys and National Health Authority CEO RS Sharma, counseled the government on the measures required to design and accelerate the adoption of ONDC.

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## What is the meaning of Open Source Software?

To make a process or a software 'open source' implies that the technology or code deployed for the process is freely made available for everyone to use, redistribute, and modify. For instance, the operating system of iOS is closed source (it cannot be legally modified or used). However, the android operating system is open source, making it possible for smartphone manufacturers, such as Samsung, Nokia, Xiaomi, etc., to modify it for their respective hardware.

# Open Source Software

The **Open Source Initiative** (OSI) provides a commonly accepted definition of what constitutes Open Source:

- A work has to **allow free redistribution**.
- The source code needs to be **made available to all**.
- It must be **possible to create further works** based on it.
- There must be **no limitations** of who may use the work or for what purpose (so conditions like 'no commercial use' won't classify as Open Source).
- The work must **not require an additional license** on top of the one it comes with.
- The license must not depend on a specific distribution format, technology or presence of other works.

Closed Source **Vs** Open Source

Source: Open Source Initiative

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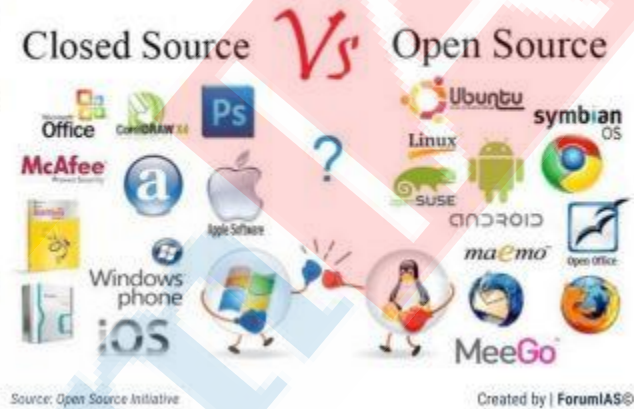
## What is Open Network for Digital Commerce (ONDC)?

ONDC is a non-profit company whose network will enable the display of products and services from all participating e-commerce platforms in search results across all apps on the network. For example, if both Amazon and Walmart's Flipkart integrate their platforms with ONDC, a user searching for a Bluetooth headset on Amazon would also see results from Flipkart on the Amazon app.

ONDC is a globally first-of-its-kind initiative that aims to **democratize digital commerce**. The ONDC will provide equal opportunities to all marketplace players, including consumers. It moves from a platform-centric model (where the buyer and seller must use the same platform or application to be digitally visible and do a business transaction) to an open network.

It is based on open-sourced methodology, using open specifications and open network protocols, and is independent of any specific platform. It is a neutral platform that will set protocols for cataloging, vendor match, and price discovery on an open source-basis, like the Unified Payments Interface (UPI).

## What is the current status of ONDC?

ONDC has been rolled out in 5 cities – Delhi NCR, Bengaluru, Bhopal, Shillong, and Coimbatore. The operations are presently focused on retail and restaurants and facilitating real-time transactions. The open network will later-on extend to other categories like travel and mobility.

Based on the pilot exercise and after the network stabilizes, ONDC will be expanded to 100 cities and towns across India by October 2022. The goal is to accommodate 30 million sellers and 10 million merchants online.

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## Who are the key stakeholders in ONDC?

20 government and private organizations have confirmed investments worth INR 2.55 billion (US$ 33.34 million). Several public and private sector banks, such as HDFC, Kotak Mahindra, Axis Bank, State Bank of India (SBI), and Punjab National Bank (PNB), have picked up stakes in ONDC.

Around 80 firms are working to integrate market players with the ONDC platform. Start-ups like Flipkart's logistics arm eKart Logistics, hyperlocal delivery startup Dunzo, and payment service provider PhonePe, are in the process of integrating with ONDC.

## What is the significance of ONDC?

**Boost E-Commerce transactions**: It will help in enhancing the volume as well the value of e commerce transactions. The Government estimates that India's e-commerce market was worth more than US$ 55 billion in gross merchandise value in 2021 and will grow to US$ 350 billion by the end of this decade. This target seems much more achievable with ONDC.

**Promotes Competition**: According to the Government, **existing platforms work in silos** and are tightly controlled, keeping out many small players. At present, Amazon and Walmart's Flipkart control more than 60% of the market. However, ONDC will increase competition and foster innovation by start-ups through the display of products and services from all participating e-commerce platforms. Further, it will **limit opportunities for selected sellers to receive preferential** treatment. This preferential treatment is a common accusation against major e-commerce companies. It will also help to **end predatory pricing**, especially in high-margin, high-value products.

**Freedom of Choice**: It is expected to **make e-commerce more inclusive and accessible** for consumers. They can potentially discover any seller, product or service by using any compatible application/platform, thus increasing their freedom of choice.

**Cost Reduction for Sellers**: ONDC would enable small businesses to use any ONDC-compatible applications instead of being governed by specific platform-centric policies. This will provide multiple options to small businesses to acquire what's needed to be discoverable over the network and conduct business, **without having to pay deep cuts to aggregator platforms**.

**Attracts Investment**: Businesses are expected to benefit from **transparent rules**, lightweight investment, and lower cost of business acquisition. It is also expected that the time-to-market as well as time-to-scale shall also be substantially reduced. All this will help in attracting greater investment in the e-commerce space.

**Aid in Diplomacy**: The digital platforms are becoming an avenue for a new type of global diplomacy. India's identity and payments platforms are being looked at with interest across the world. Recently, the Co-Win platform was offered by India to interested countries.

## What lies ahead?

**First**, the **ONDC aims to raise e-commerce penetration** in the next two years to 25% of India's consumer purchases, from nearly 8% now, in a country of 1.35 billion people.

**Second**, It also **hopes to sign up 900 million buyers and 1.2 million sellers** on the shared network within the next five years, while achieving gross merchandise value of $48 billion.

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**Third**, It also hopes to **bring in logistics firms and others** who can collaborate with sellers to deliver products to customers. The focus should be on small merchants and rural consumers, with **apps in Indian languages**.

**Fourth**, ONDC aims mainly to tap millions of small businesses that often lack technological expertise, so the government will have to run a **massive awareness campaign** to get them on board.

**Fifth**, the role of **Competition Commission of India would be crucial** in the success of ONDC as smaller businesses with low volumes lack the resources to match the discounts offered by heavyweights like Amazon and Flipkart. Their integration and sustenance could be done only when big players are effectively stopped from indulging in anti competitive practices.

**Sixth**, the government also needs to make sure that **ONDC complies with the Information Technology Act, 2000**, and the emerging Personal Data Protection Bill.

### Conclusion

ONDC provides a technological platform to fulfil India's aspirations to become a middle-income economy that is digitally savvy and wired. It offers a vital global template for the harnessing of technology for and as a public good at population scale in an inclusive and equitable way.

Source: **Mint**, **Mint**, **Business Standard**

### Ukraine War and the Global Food Crisis – Explained, pointwise

### Introduction

Russia's invasion of Ukraine and the subsequent sanctions on its economy have sent global food prices soaring. This has threatened to push millions of people, especially those in low-income countries, into starvation. Ukraine and its allies in the West have accused Russia of weaponizing food, saying that its blockade of Ukraine's Black Sea ports is the primary reason for the rising prices. Russia has blamed Western sanctions for the global food crisis. The war has raged on for the 4th month now and no political solution seems to be imminent. The United Nations and Turkey have initiated talks with the Russian leadership to facilitate the exports of grains and fertilizers from Russia and Ukraine.

### What is the severity of the current Global Food Crisis?

As of June 1, 2022, **the Agricultural Price Index** was 40% higher compared to January 2021, according to the World Bank. Maize and wheat prices rose 42% and 60%, respectively, from the levels of January 2021. The Food Price Index of FAO has reached its highest level since it was started in 1990.

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## Cost of essentials

Price increase above 2014-16 average as of Apr. 2022.

— Food Price Index  — Meat  — Dairy  — Cereals  — Oils  — Sugar
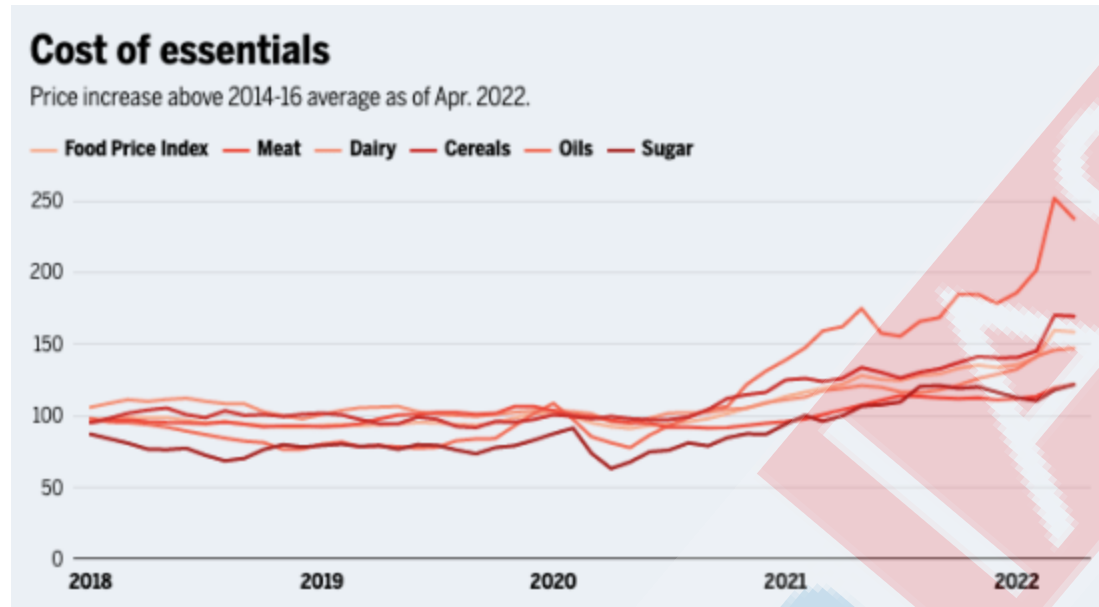
*Source: The Times of India. Food Price Index has risen from 95.2 in 2018 to 158 in 2022.*

**Almost all economies in the world have been hit by higher food prices**. Across the western world, there's a **cost-of-living crisis with food and energy prices at record high**. In the U.K., inflation numbers have already hit a 40-year high.

Almost **90% of emerging markets and developing economies** experienced food price inflation greater than 5% this year. In India, the **Consumer Price Index has risen by 10.5% since January 2020**, leaving consumers facing much higher prices for essential food staples.

Many Low-income countries have been hit the hardest because they are reliant on imports for basic food consumption. According to the UN World Food Programme (WFP), Ethiopia, Nigeria, South Sudan and Yemen remain at 'highest alert' as hotspots with 'catastrophic conditions'.

The World Food Programme estimates that the number of severely food insecure people was 276 million at the start of 2022. The number is feared to increase to 323 million by the end of 2022.

The war has set in **a vicious cycle:** Higher inflation has led to higher cost of living. This has wiped out people's real income and they are unable to adjust to rising costs. The Russia Ukraine conflict threatens to tip tens of millions of people over the edge into **food insecurity, followed by malnutrition, mass hunger and famine**.

### How important are Russia and Ukraine for global food security?

Wheat

Russia and Ukraine together account for **more than 25% of the world's wheat supplies**. According to the U.S. Food and Drug Administration's Foreign Agricultural Service (FAS), Russia's share in the global exports of wheat is ~20%. Ukraine accounts for another 8%.

According to the FAO, about 50 countries depend on Russia and Ukraine for more than 30% of their wheat imports. Azerbaijan and Georgia source more than 80% of their imported wheat from Russia and Ukraine. Turkey, Egypt, Bangladesh and Lebanon meet over 60% of their imports from these two countries.

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## Corn and Sunflower

Besides wheat, **Ukraine is the world's eighth largest producer and fourth largest exporter of corn**, accounting for 16% of global exports.

Furthermore, Ukraine produces up to **46% of sunflower-seed and safflower oil**. It is the world's largest exporter of sunflower oil. India has been particularly hit by **shortage in sunflower seed oil**. It imported nearly $8 billion worth of the oil from Ukraine between 2016 and 2020.

## Fertilizers

Russia is also a leading exporter of fertilizer, **an essential commodity for food production**. Russia and its ally Belarus together account for some 38% of potassic fertilizers, 17% of compound fertilizers, and 15% of nitrogenous fertilizers.



**Top exporters of fertilisers (between 2016-20)**
All figures in $

| | |
|---|---|
| Russia | 41.4B |
| China | 33.4B |
| Canada | 25.1B |
| US | 19.1B |
| Belarus | 14.5B |
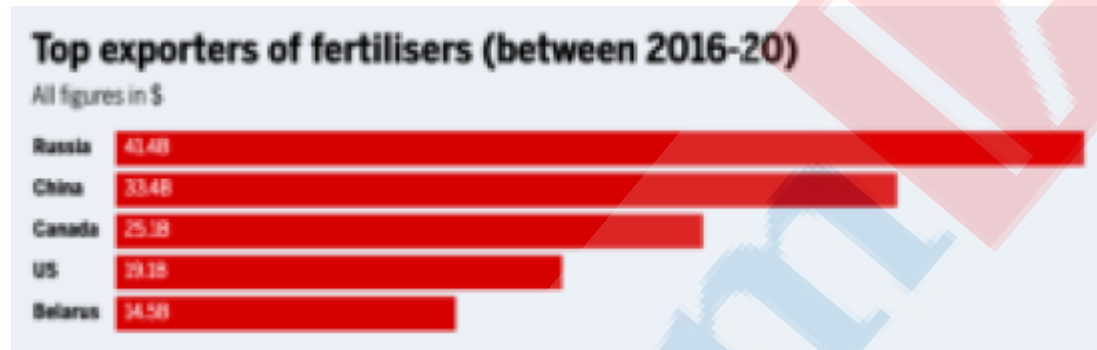
*Source: The Times of India*

## What are the reasons behind the Global Food Crisis?

Pre-Russia Ukraine Conflict Factors
**First**, **climate change** has impacted the production of various food crops especially due to the changes in **the regular rainfall pattern** and **rising temperatures**.

**Second**, **Covid 19 pandemic** induced the countries to announce lockdown measures in their regions that disrupted the supply chain and raised the prices of food items.

## Post-Russia Ukraine Conflict Factors

**First**, Ukraine is unable to export because of the **Russian invasion of key port cities**. In the eight months before the war, some 51 million tonnes of grain were exported through Ukraine's Black Sea ports, according to the WFP. But exports have collapsed since the invasion as the Russian war effort is entirely focused on Ukraine's eastern and southern parts along the Black Sea/Sea of Azov coast.

Even in cities which are under control of Ukraine (like Odessa), commercial ships are unable to dock there because of two reasons: **(a)** Ukraine has mined the waters around these ports as a deterrent against potential Russian attacks; **(b)** Russia has enforced a naval blockade in the waters of the Black Sea.

**Second**, besides the blockade, the **western sanctions on Russia** are also contributing to the crisis. Russia's food and fertilizer sectors were not directly targeted by western sanctions. However, the sanctions on financial sector made payments difficult for Russia, and it has complicated its exports, including food grains. Also, the targeted sanctions on Russian oligarchs have choked finances for the agricultural industry.

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## What options are available with Ukraine to resume its exports?

The current Global Food Crisis can be dampened to an extent if exports can be resumed on an immediate basis.

**One option is to transfer the grains overland to the Baltic states**, either through Poland or Belarus, and then ship them out from the Baltic Sea ports. However, according to UN officials, Ukraine has dismissed the proposal to seek help from Belarus. Belarus is a Russian ally that is also facing western sanctions.

Further, moving them overland via Poland is challenging because the rail track gauge in Poland is smaller than that of former Soviet countries such as Ukraine and the Baltic states. This means cargoes will have to be moved to different trains at the Polish-Ukraine border and then again at the Polish-Lithuania border to start exporting them from the Baltic ports.

**Second option is to broker a deal with Russia** and remove the blockade on Ukrainian ports. This seems a more practical solution.

## What lies ahead?

**First**, the month of June marks the beginning of a harvesting season in Ukraine. This season, Ukraine is expected to produce ~30 million tonnes of corn, wheat and sunflower oil, half of which are meant to be exported. But unless the blockade is lifted and Ukraine starts exports, the country would **not even find enough warehousing capacity to store this year's harvest.** This would make the global food crisis worse.

**Second,** rising prices for basic food items have **already fueled protests in several countries**, including Argentina, Indonesia and Greece. In Iran, protestors took to the streets after prices for flour-based staples rose as much as 300%. This makes it imperative to curb export restrictions or be prepared for more chaos and discontent that in extreme situations may take the form of **a civil war**.

**Third**, the only practical solution to take Ukrainian grains to the global markets is to open the Black Sea routes. Further, to ease the pressure on global food items, Russia will also have to step up exports of both grains and fertilizers. For this, it is **imperative to stop with war as early as possible**.

**Fourth**, the **countries must try to import from alternative suppliers** until a peace agreement is reached between Russia and Western nations. For instance, Egypt recently made a deal with India to help replace some of the 80% of its wheat imports which come from Russia and Ukraine.

**Fifth**, there is high possibility of rise in ban on exports of key food items by producing/exporting countries to stabilize food prices in their own domestic jurisdiction. For instance, in May, **India's ban on wheat exports** delivered a blow to world markets. Such actions will further exacerbate the global food crisis.

## Conclusion

According to the estimates of the World Bank, Global food, fuel and fertilizer prices are projected to be sharply higher this year and will remain elevated till 2024. The current global food crisis would result in widespread hunger and starvation which can become a humanitarian crisis. Therefore in the interest of humanity and world prosperity, the West and Russia must find a diplomatic solution to the ongoing war.

Source: **The Hindu**, **Times of India**, **Down to Earth**

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## Ban on Wheat Exports – Explained, pointwise

### Introduction

The Government of India recently banned the export of wheat and imposed quantitative restrictions on the export of sugar. The ban on wheat export came within days of a push to enhance India's wheat supplies to the rest of the world after Russia's invasion of Ukraine. The decision has come at a time of persistently high inflation, spurred by rising prices of food and fuel. There are concerns about a lower yield this year due to intensive heat waves. The move has attracted mixed responses and there has been a strong demand by experts to reconsider the decision. The agriculture policy of the Government is also under criticism.

## Some Facts About Wheat

- Wheat is the **2nd most important staple food** in India, after rice. It is consumed by ~65% of the population. It is the main food crop in the North/North-western India.

- **Types**: (a) **Bread Wheat** - Suitable for 'chapati'; cultivated in ~95% of the cropped area; (b) **Durum wheat**: Suitable for making macaroni, noodles, semolina and pasta products, cultivated in ~5% of the cropped area, predominantly grown in Central and Peninsular India.

- **Climate**: **Rabi crop**, requires a cool growing season and bright sunshine at the time of ripening. It requires 50-75 cm of annual rainfall evenly distributed over the growing season.

- **Wheat Growing Regions**: **(a)** The Ganga-Satluj plains in the North-west; **(b)** The black soil region of the Deccan. The major wheat-producing states are Punjab, Haryana, Uttar Pradesh, Bihar, Rajasthan and parts of Madhya Pradesh

- **Global Status**: India is the **second-largest producer of wheat** in the world. China is the top producer and Russia is the third-largest producer. Ukraine is the world's eighth-largest producer of wheat.
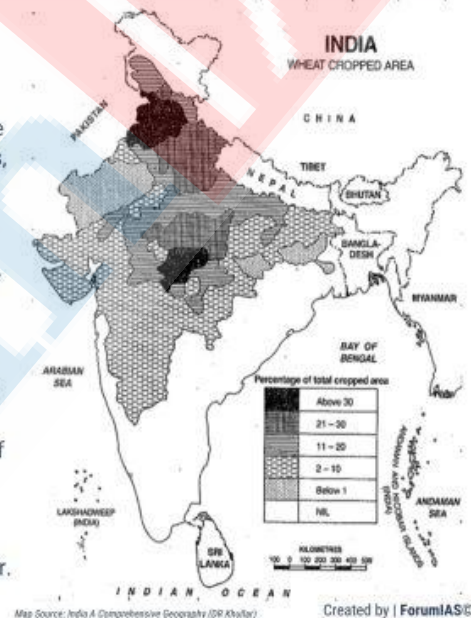
### About the Ban on Export of Wheat by the Government

The Government banned the export of wheat on May 13, two days after the decision to send delegates to nine countries to explore the option of enhancing exports was taken.

### However, there are certain conditions, under which exports have been allowed:

**First**, where an irrevocable letter of credit has already been issued.

**Second**, export will be allowed to other countries "based on the request of their governments". It will be helpful in ensuring supplies to Sri Lanka, Bangladesh, and Nepal.

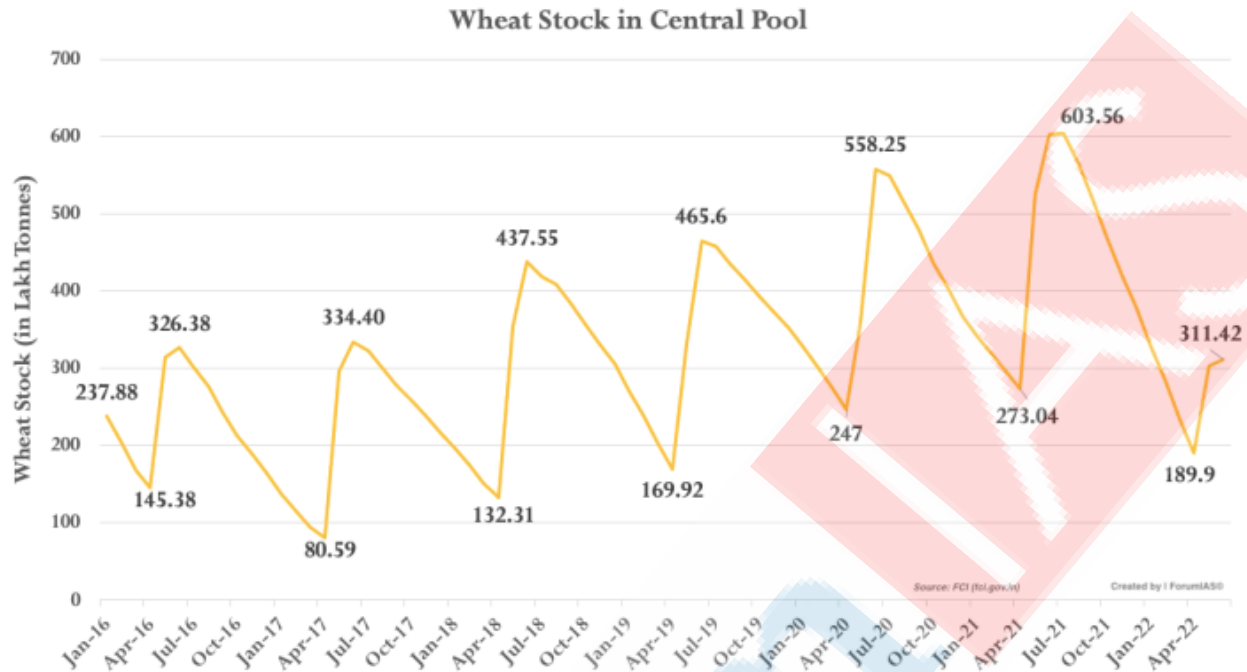### What are the reasons behind the ban on wheat exports?

**High Inflation**: The retail inflation touched 7.8% in April 2022. The food inflation was 8.4% while wheat inflation touched 9.6%. This forced the Government to place a ban on wheat export. The prices of wheat have been rising since November 2021 and gained pace after the Russia-Ukraine war. Further, The Food and Agriculture Organization food index has been at its highest since the series began in 1990. The rise has been driven by inflation in edible oil and cereals.

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**Domestic Food Security:** Heatwaves at the end of March, have impacted the production of food grains, especially in northwest India. The Government has revised the wheat production estimates. The Government had estimated a record production of 111 million tonnes. However, the actual production may be limited to 100 million tonnes. The Government has already lowered the estimate by 6 million tonnes. Hence a restriction has been placed on exports to meet domestic wheat demand.



**Declining Output**

India's wheat production is set to fall after rising for six years
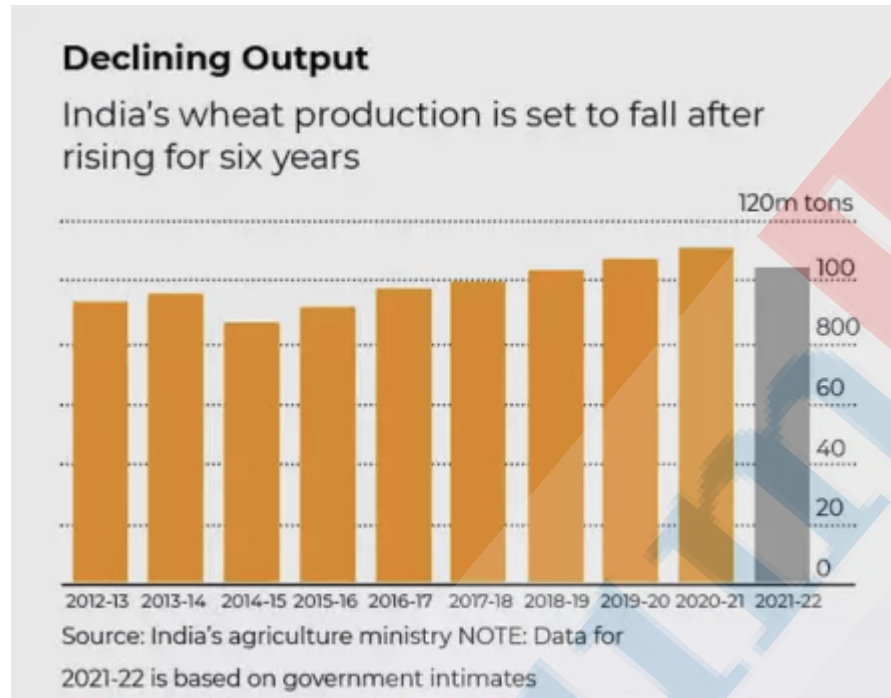
*Source: The Times of India*

**Lower Procurement:** Food Corporation of India (FCI), also slashed its procurement target to less than half of the last year's target of 43 million tonnes. This was based on the premise that farmers were selling more to private traders than selling at MSP. Open market prices were higher at INR 2,400 a quintal compared to the MSP [Minimum Support Price] of around INR 2,100.

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Wheat Stock in Central Pool

*The above trend shows the cyclicity of wheat stocks with the FCI (Opening stock of each month). The stocks are generally lowest in the month of April, and recover once procurement begins after the harvest in April-May. The opening stocks are highest in the month of June, after the completion of procurement. As evident from the chart, the June stocks are lowest since 2016. In 2017, the stocks had plummeted to 80 lakh tonnes in April, but recovered to 334 lakh tonnes by June 2017. This year, the April stocks stood at 189 lakh tonnes, yet June stocks have recovered only to 311 lakh tonnes (much below last year's level of 603 lakh tonnes), showing considerably lower procurement in the Central Pool by FCI.*

## What is the criticism of Government's decision?

**Policy Uncertainty**: In May 2022, the Government had announced the decision to send trade delegations to nine countries (like Morocco, Tunisia, Indonesia and Thailand etc.) to explore opportunities for export of wheat. However, as soon as the inflation data were available, the decision was reversed and the Government announced a ban on wheat export.

Critics argue that this is a knee-jerk reaction, that reflects a **lack of understanding** of the domestic food and agricultural economy. Such sudden turns may also result in loss of faith in public policy.

**Loss of Income:** Indian wheat traders have lost the opportunity to gain from the global grain shortage. Building export markets and establishing supportive infrastructure, like warehousing, takes time. It will be a loss for farmers as well because the market price of wheat had become higher than MSP. Many farmers were preferring to sell in the market. It led to the highest purchase of wheat by private traders in Punjab in the last 8 years.

**Less Availability of Wheat for schemes**: There's been a cut-back in the NFSA allocation of wheat in several states, many of them mainly wheat-consuming states. A **reduced government procurement** is witnessed as private traders and speculators mop up supplies from the market. These were mostly bought for exports, but are now trapped by the ban.

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High inflation has reduced the real purchasing power of the people, especially in rural areas. At this time, the withdrawal of NFSA and PMGKAY wheat allocations will worsen lives.

**Global Response**:  India is the world's second-largest wheat producer and many countries were expecting India to fill the gap created due to the Ukraine-Russia war. Agriculture ministers from the G7 condemned India's decision to withhold wheat exports amid a global grain shortage. Similarly, at a high-level ministerial meeting in New York on **'Global Food Security: Call to Action'**, India was reminded of its global responsibilities, especially in the context of its upcoming role as chair of the G-20.

## What can be the approach of Government going ahead?

Agriculture experts and economists suggest:

**First**, a bonus over the **minimum support price** could be given. This would allow the Government to meet its procurement target on time and also provided better prices to farmers.

**Second**, under PMGKAY and NFSA allocations, the Government can give the option of cash to beneficiaries. It will give beneficiaries an option to buy more nutritious food, be it pulses, milk, eggs, meat or fish.

**Third**, the Government can **impose stock limits** to force traders to release their hoards. Further it could also **offload more rice than wheat** into the subsidized public distribution system. This could free up about 10 million tonnes of wheat for Government-to-Government supply deals such as with Egypt, as most of the Indians use both rice and wheat.

**Fourth**, according to the IPCC report, every 1$^\circ$C rise in temperature will reduce the yield of wheat by 5 million tonnes. This calls for **massive investments in agri-R&D** to find heat-resistant varieties of wheat and also create models for 'climate-smart' agriculture.

**Fifth**, there is a need to focus on **diversification of staple crops**. The Government should enhance the procurement of millets which are cheaper and nutritious than wheat. This would reduce dependence on wheat and avoid panic export bans on the crop in future. Thereby **ensuring long term credibility of export policy**.

## Conclusion

Ban on wheat exports is a temporary solution that can only provide a short term relief. In long term, focus should be on making wheat production more climate resilient and diversifying the consumption patterns in the country.

Source: **The Hindu**, **Indian Express**, **The Times of India**, **Mint**.


### Water Crisis in India – Explained, pointwise

## Introduction

India has 17% of the world's population, but possesses only 4% of the world's freshwater resources. Further, the country is facing a water crisis due to climate change, rising water pollution levels, and other critical factors responsible for depleting water resources.

This created numerous problems for the Indian masses, which are going to rise in the future if water wastage is not stopped. But the good news is that people have woken up to the reality of

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this crisis, and there are now several projects aimed at rejuvenating rivers and recharging aquifers.

## What is the current status of the water crisis?

In the 75 years since Independence, the **annual per capita availability of water** has declined by 75% – from 6,042 cubic meters in 1947 to 1,486 cubic meters in 2021.

India is facing multidimensional challenges like depletion of groundwater together with pollution of surface water, and also vanishing water bodies – ponds, lakes, tanks, wetlands.

For instance, provisional data from the **country's first census of water bodies** show 2% of water bodies i.e. 18,691 of 9. 45 lakh water bodies, have been encroached. The number is likely to be much higher because figures from states like UP, Maharashtra, Karnataka, MP, and Rajasthan are still not in.

According to the most recent Central Ground Water Board data, as many as 256 of 700 districts in India have reported **'critical' or 'over-exploited' groundwater levels**.

No one had seen water tankers in Punjab before, but now they are a common sight. Things have come to such a pass that people are being **forced to buy water, sometimes even unpurified water**.

## What are the reasons behind water crisis?

**Discharge of Pollutants**: There is the discharge of industrial chemicals and sewage into the rivers. It is happening due to a lack of compliance with environmental rules by the industry and a dearth of sewage treatment plants in cities.

Further, improper mining activities also pollute the nearby aquifers and deplete water quality.

**Encroachment**: There is an encroachment of water bodies to meet the **infrastructure needs of burgeoning populations**. Lakes and small ponds often get destroyed while making townships and industrial complexes.

**Climate Change**: The rising temperatures have reduced water levels in many rivers. It has further made the monsoon more erratic in nature, which is making rain-fed agriculture a difficult task.

**Wastage of Water**: Water is being wasted and overused due to the excessive subsidies coupled with a lack of awareness among the masses. This is seen in the states of Punjab and Haryana where a high degree of water usage in agriculture has dramatically pushed down the groundwater levels.

Indiscriminate use of water for irrigation and the absence of conservation efforts have left, over 10% of water bodies in rural areas, redundant.

**Cropping patterns**: The Green Revolution helped India become self-reliant in food grain production, but it also triggered the water crisis. For instance, farmers in Punjab switched to water-intensive paddy cultivation, and things have gone downhill ever since.

**Policy-related issues:** The national water policy is very irrigation-centric. Ever since independence, water governance has suffered from **hydro-schizophrenia**. The issue of water (Surface water, groundwater) has been governed by different departments independently, without

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any coordination. For example; the Central Water Commission (CWC and Central Ground Water Board (CGWB).

**What would be the adverse consequences of water crisis?**

**Health Problems**: Heavy chemicals like fluoride, chloride, and nitrate are found in water, and in some districts, there were even traces of uranium. Kids have developed deformities due to water contamination. The hair of children has started greying prematurely, and many have teeth and skin-related problems.

**Economic Loss:** Water is a critical component that is used in almost every economic activity, either directly or indirectly. Water scarcity, aggravated by climate change, could cost some regions **up to 6% of their GDP**, according to a World Bank report.

**Greater Hardships of women**: The household work is mainly managed by women in our country. A shortage of water means they have to stand in long queues of water tankers or travel long distances to get clean water for their families. A rural woman in Rajasthan walks over 2.5 kilometers to reach a water source, according to a report by the National Commission for Women.

Since men in rural India have completely made women responsible for water management, this has led to **polygamy in one drought-prone village in Maharashtra**. This involves having more than one spouse to collect water. The arrangement is termed as '**water wives'**.

**Biodiversity Loss**: A reduction in the number of lakes or excessive discharge of pollutants in them is causing the loss of pristine flora and fauna. Many plants and animals are now on the verge of extinction due to the rising Biological Oxygen demand of water bodies.

**Food Security**: Polluted groundwater and erratic monsoon are leading to greater hardships for carrying out agricultural activities. The lower the Agri output, the greater would be the threat to India's food security.

**Inter-State Conflicts**: Inter-State river conflicts are going on Kaveri, Krishna, Godavari, etc. Rivers. This would get amplified, and new conflicts may emerge in the future.

**Must Read: [What India is doing to tackle its water crisis?](#)**

**What steps have already been taken?**

**Jal Shakti Abhiyan (JSA)**: It was started in 2019 as a movement for water conservation, recharge, and rainwater harvesting in 256 water-stressed districts. The JSA now covers all 740 districts in the country. States are implementing it, while the Centre provides the nudge.

**Amrit Sarovars**: The Centre has decided to build 50,000 water bodies (Amrit Sarovar), with an approximate area of one acre, across the country by August 15 next year to conserve water.

**Atal Bhujal Yojana**: The programme is expected to lay emphasis on the r**echarge of groundwater resources** and **better exploitation of the groundwater resources**.

The scheme also seeks to strengthen the institutional framework and bring about **behavioral changes** at the community level for sustainable groundwater resource management.

**Paani Bachao, Paisa Kamao (Save Water, Earn Money):** It is a scheme of the Punjab Government that incentivizes farmers to reduce groundwater and electricity usage. Around 300 enrolled farmers were given cash incentives to save electricity used for irrigation. This has resulted in water savings of between 6 and 25 percent without any adverse effect on the yield.

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**Ganga Rejuvenation:** The World Bank has been supporting the Government of India's efforts to rejuvenate the Ganga River since 2011. Two World Bank projects, worth $1 billion, are helping set up the institutions needed to manage the river and build the infrastructure to keep it clean.

**Jal Shakti ministry:** The formation of the Jal Shakti ministry is an important first step in the direction of overcoming hydro-schizophrenia. It will bring the irrigation and drinking water departments, together, within one ministry.

## What more should be done?

**First**, the focus should be on **enumerating, geo-tagging, and making an inventory** of all existing water bodies on priority under the JSA so that encroachment can be prevented.

**Second**, the states must forward and cooperate based on **Hydrological boundaries** rather than merely on administrative boundaries to tackle the water crisis. This will help in better management of water and reduce inter-state water conflicts.

**Third**, the masses **need to be sensitized** by taking support of public-spirited individuals like Rajendra Singh (Waterman of India).  He built thousands of "Johad" (percolation ponds) for the revival of rivers in the Rajasthan Desert. He won the Stockholm water prize for water, river, and forest conservation.

**Fourth**, the government should also **renegotiate international treaties** like the Indus Water Treaty 1960 which were made decades ago and don't reflect the changing needs and realities of contemporary times.

**Lastly,** improving the water governance in India. The CWC and CGWB should be merged, and their capacities greatly expanded to form a brand new National Water Commission (NWC). It will improve the coordination and different sources of water would get the required expertise.

### Conclusion

The government needs to augment its efforts toward water conservation and sensitize the masses about the depleting nature of water across the world. Efforts in this regard must be made on a war footing keeping in mind that **'Jal hi Jeevan hai'** i.e Water is Life.

**Sources: Times of India (Articles 1, Articles 2), Down To Earth, World Bank**

### The Controversy Regarding Environment Performance Index – Explained, pointwise

## Introduction

The newly released Environmental Performance Index (EPI) 2022 is in news due to India's dismal rank. The Index has ranked India at the bottom position among 180 countries. The poor rank is indicative of a serious degree of environmental degradation along with a vacuum of credible steps to preserve the environment and ecology. However, some environmental experts have noted some flaws in the methodology of the Index. Even the Ministry of Environment has issued a rebuttal saying the indicators used in the assessment are based on 'unfounded assumptions' and India's rank should have been much higher.

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**What is the Environmental Performance Index?**

The EPI is an international ranking system of countries based on their environmental health. It is a **biennial index,** first started in 2002 as the Environment Sustainability Index by **the World Economic Forum**.
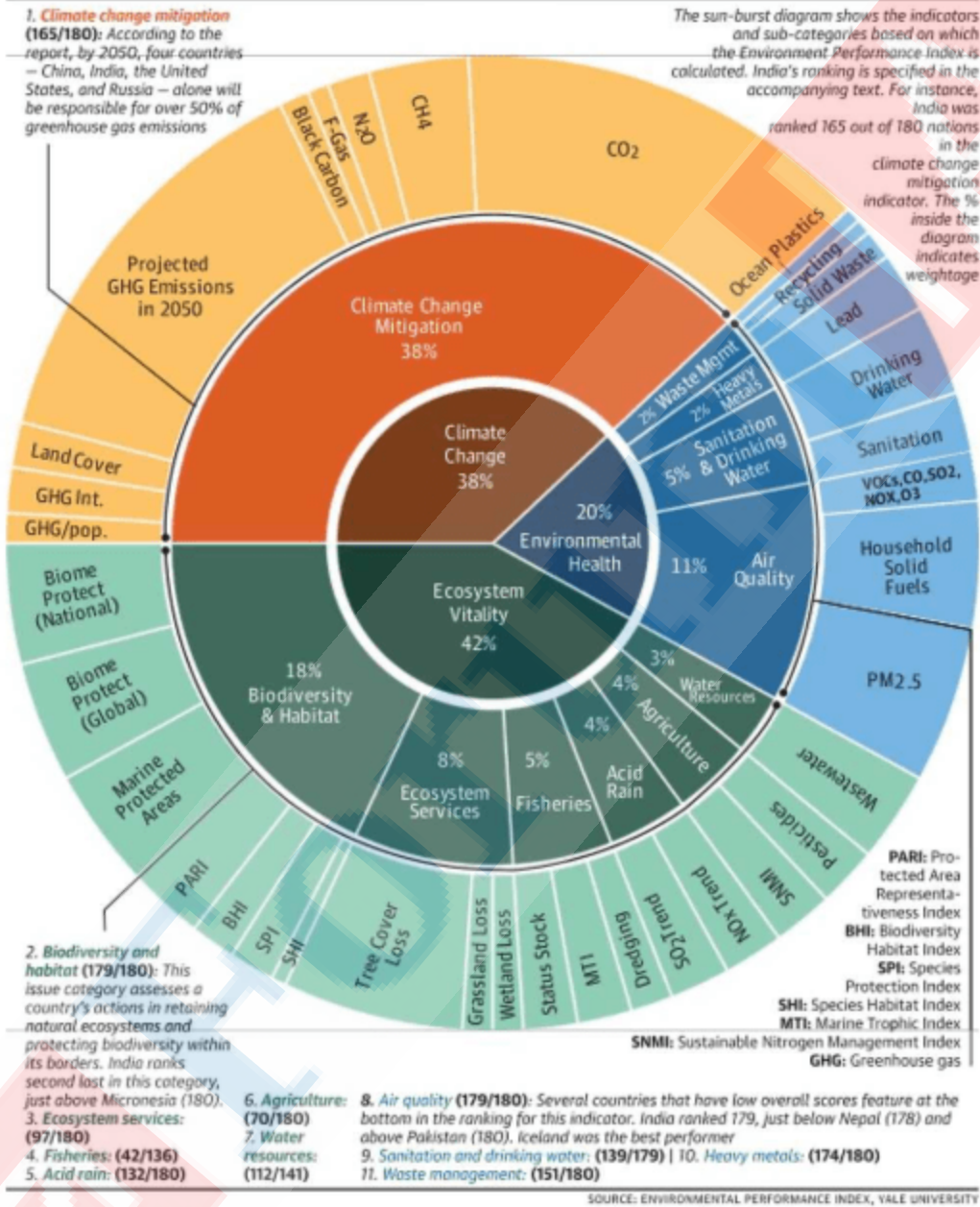
It is prepared by the Yale Center for Environmental Law in collaboration with Policy and Columbia University Center for International Earth Information Network.

EPI 2022 uses **40 performance indicators** to assess and rank 180 countries. The indicators "measure how close countries are in meeting internationally established sustainability targets for specific environmental issues".

The 40 indicators are under the broad categories of climate change performance, environmental health, and ecosystem vitality. The 2022 EPI has included **new parameters to its earlier assessments**, with projections of progress towards net-zero emissions in 2050, as well as new air quality indicators, and sustainable pesticide use.

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*Source: The Hindu*

**What are the Key Findings of Environmental Performance Index, 2022?**

India has been ranked 180 with a score of 18.9. India's rank was 168 (score 27.6) in 2020. India has been ranked lower than Pakistan, Bangladesh, Vietnam and Myanmar, the poorest

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performers. In fact, India has been ranked the lowest. **Denmark tops the list with a score of 77.9**.

India ranks close to the bottom on a number of indicators including ecosystem vitality (178th), biodiversity (179th), biodiversity habitat index (170th), species protection index (175th).

Apart from this, there is a dismal performance with respect to wetland loss, air quality (179th), PM 2.5 (174th), heavy metals such as lead in water (174th), waste management (151st) etc.

It suggests that China, India, the U.S., and Russia **will account for over 50 percent** of residual global greenhouse gas emissions in 2050. Greenhouse gasses (GHG) include carbon dioxide, methane, fluorinated gasses, and nitrous oxide.

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## INDIA: KEY INDICATORS

| Country | Rank | Score | 10-yr change |
|---|---|---|---|
| **Ecosystem vitality** | **178** | **19.30** | **-2.10** |
| Biodiversity | 179 | 5.80 | -0.50 |
| Species protection | 175 | 0.30 | NA |
| Tree cover loss | 75 | 17.20 | -7.80 |
| Wetland loss | 60 | 62.00 | -38.00 |
| Pesticide management | 47 | 45.30 | NA |
| **Health** | **178** | **12.50** | **2.90** |
| Air Quality | 179 | 7.80 | NA |
| PM2.5 | 174 | NA | -5.10 |
| Household solid fuels | 129 | 18.60 | 7.10 |
| Sanitation & drinking water | 139 | 19.50 | 9.6 |
| Lead | 174 | 20.6 | 4.3 |
| Waste management | 151 | 12.90 | 0.60 |
| **Climate policy** | **165** | **21.70** | **-0.90** |
| Carbon dioxide growth rate | 136 | 17.60 | -5.70 |
| Black carbon growth rate | 1 | 100.0 | 44.7 |
| Projected GHG emissions, 2050 | 171 | 0.00 | NA |
| GHG per capita | 53 | 66.80 | -6.20 |

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*Source: Indian Express*

**What reasons have been attributed to India's poor rank?**

The Environmental Performance Index report noted that most countries that scored low have prioritized economic growth over sustainability.

**Air pollution:** India is **home to 21 of the 30 most polluted cities in the world** and has an air quality rated one of the poorest in the world. Over 16 lakh people in India die from air pollution every year, according to the report. It also identifies household fuel combustion as the largest contributor to the country's particulate matter emissions.

Seven indicators are used to determine the air quality in the listed countries. These include PM 2.5 exposure, household solid fuels, ozone exposure, nitrogen oxides exposure, sulphur dioxide exposure, carbon monoxide exposure, and volatile organic compound exposure.

**Plastic waste generation**: India and Indonesia have been identified as the top two generators of marine plastic waste in the world, while China has managed to decrease its ocean plastic pollution. Ocean plastic pollution is measured as an absolute quantity of the amount of plastic released by a country into the ocean annually. Indonesia, India, the U.S, Brazil and Thailand are the top five producers of ocean plastic pollution and are responsible for 43% of the global total.

**Protection of biomes**: In an analysis of countries protecting the world's biomes, India emerged at the bottom in five out of 14 sub-categories – the most for a single nation.

What objections have been raised by India regarding the Environmental Performance Index, 2022?

As per the Environment Ministry, some of the indicators used for assessing performance are extrapolated and based on unscientific methods.

**Shifting of weightage** on many indicators has resulted in India's low ranking. For example, for black carbon growth, India's score actually improved from 32 in 2020 to 100 (the top score) in 2022. However, the weightage of this indicator has been reduced to 0.0038 in 2022 from 0.018 in 2020. Climate Change has been given very high weightage (38% or 0.38) and tends to neglect the development needs of poorer countries.

Similarly, the low weightage given to **per-capita GHG emissions** automatically reduces the ranks of countries like India and China.

Projection for GHG emissions has been **computed based on the average rate of change in emission of the last 10 years**. It is not based on modeling that takes into account a longer period, extent of renewable energy capacity and use, additional carbon sinks etc.

Crucial carbon sinks that mitigate GHG, such as forests and wetlands, have not been taken into account.

Further, India's low emissions trajectory, unlike high historical trajectories of developed countries, has been ignored. The US and the EU should have the highest burden considering their historic emissions.

The EPI assumes every country is in the same position economically, developmentally and environmentally, therefore all had to achieve net zero emissions by 2050.

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**Other Objections**: The index emphasizes **the extent of protected areas rather than the quality of protection** that they afford. The computation of biodiversity indices does not factor in management effectiveness evaluation of protected areas.

Indicators such as **agro biodiversity, soil health, food loss and waste** are not included even though they are important for developing countries with large agrarian populations.

Dr Navroz Dubash, one of the authors of the latest report of the International Report on Climate Change (IPCC), has criticized the Index, "*The EPI 2022 is neither ethically correct nor reflects the political reality.*"

## What can be done going ahead?

**First**, the **parameters of the report should be modified** in order to enhance its credibility. The accurate method would be to calculate GHG emissions per capita. Further, a model should be created with coefficients taking into account the effect of policies to reduce emissions. This will help in better projection of the values for future years.

Such policies include increased use of renewable energy and electric vehicles or the creation of a carbon sink.

**Second**, India must make sure that its **current environment policies and commitments** are duly honored. For instance, India has announced a ban on single-use plastic, scheduled to be in effect from July 1. This should be properly implemented.

**Third**, India must strengthen **environmental litigation** framework by establishing more benches of National Green Tribunals across the country. This will promote environmental consciousness and encourage people to file complaints against the violators.

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

**Fifth**, Developed countries **must accept historical responsibility and provide financial resources** to the developing countries based on equity and justice principle. This is imperative for preserving the environment across the globe rather than myopically seeing one's own domestic jurisdiction.

## Conclusion

Despite the inconsistencies in the Environmental Performance Index, the Government should not ignore the fact that India was at 168th rank in 2020 and has never been in the top 150 countries since the index was started. This shows that there are severe environmental issues in India (especially air pollution) that need to be addressed urgently for attaining sustainable development.

Source: **Indian Express**, **Indian Express**, **Indian Express**, **The Hindu**

**[Yojana June Summary] Deep-Tech Start-up Ecosystem – Explained, pointwise**

## Introduction

India has a vibrant start-up ecosystem with supporting infrastructure (incubators, development grants, angel venture investors, mentors) and a conducive policy environment. The Economic

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Survey of India 2021-22 says that there are 61,400 registered startups in India, making it the 3-largest start-up ecosystem in the world behind China and the US. However, India lacks deep-tech start-ups as they constitute less than 1% of the number of start-ups. This is far below what a fast-growing, complex, and large economy like India should have.

## What is the current status regarding Start-ups in India?

Around 14,000 new start-ups were registered in India during Calendar Year (CY) 2021. Over the past decade, Indian start-ups have created 6.6 lakh direct jobs and 34 lakh indirect jobs.

Indian start-ups raised US$ 24 billion in CY21, compared to US$ 10 billion in CY20. There has been a significant localisation and diversification in the investor pool for startups in India over the past decade. There were more than 750 institutional investors in India in CY21, 80% more than in CY20. The number of angel investors grew in CY21 by 20% to about 2,400. More than half the investment deals in CY21 had an India-based investor.

Over 250 corporates have engaged with Indian start-ups in some way, including by running 80+ open innovation programmes for startups in CY21.

**Read More**: Indian Tech Start-up Ecosystem: Start-ups raised a record $24.1 billion in 2021: Study

## What is a deep-tech start-up?

The phrase 'deep-tech start-up' does not have a precise definition, but there is a broad consensus on what constitutes deep-tech. Deep-tech startups arise from research-based, disruptive innovations from STEM labs of academic, research institutions and solve hard problems and challenges. Some examples are: **(a)** Recycling sewage to get clean water at an affordable cost; **(b)** A low-cost solution at scale for curing blindness; **(c)** Affordable solutions for treating diseases such as diabetes, dementia, cancer, etc.; **(d)** Creating an alternative to Lithium-ion batteries; **(e)** Low-cost satellite launching systems.

According to NASSCOM, Active tech start–ups that create, deploy or use advanced technology in their product or service are considered as deep-tech start–ups. Such start-ups work in the domains of (not limited to) Artificial Intelligence/Machine Learning, Internet of Things (IoT), Blockchain, Big-data, Augmented/Virtual Reality (AR/VR), Robotics etc.

The payoffs of successful deep-tech startups are tremendous as seen in the case of Microsoft, Google, Apple, Intel, Tesla, Moderna, SpaceX, etc. They are large corporations today, but they started as mere technology bets not very long ago.

## What is the need to have deep-tech start-ups in India?

**First**, the absence of deep-tech start-ups harms India considerably by weakening her capability to meaningfully **address complex socio-economic challenges** that afflict the society in multiple sectors. This includes agriculture, healthcare, transportation, education, energy, etc. India's development challenges are so unique that innovators from developed countries, not familiar with local context or cost structures, will not be able to provide solutions.

**Second**, the solutions that address the **UN's Sustainable Development Goals** would necessarily have to be radically new and disrupt existing industries and business processes. Thus, requiring deep-tech start-ups.

**Third**, in India's population of 130 crores, only the top 25% (affluent and middle-class) benefit from the fruits of technological progress. In contrast, the remaining **100 crore people do not**

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**get enough or are substantially bypassed**. This is because most of the hi-tech goods and services are designed in the developed world for rich people and can't be bought by the poor.
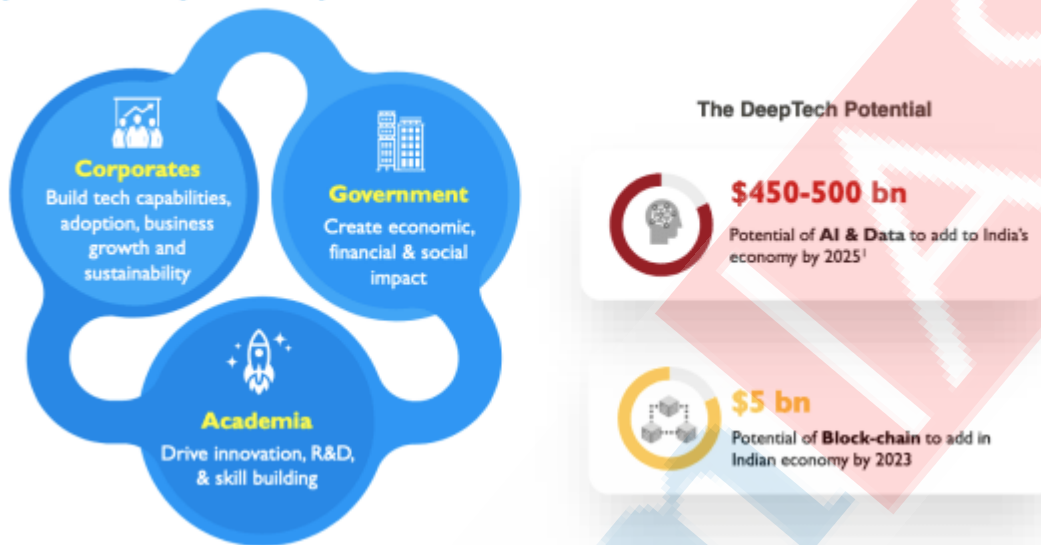


*Source: NASSCOM*

## What are the challenges faced by Deep-Tech Start-ups?

**First**, they need a **longer gestation** for development than other start-ups. The latter might need from 1-3 years to reach revenue, while deep-tech start-ups need 5-8 years.

**Second**, they require **more capital, specialized talent, and expert knowledge** in more than one domain to develop and validate a science-based innovation.

**Third**, the **risk of failure is high at every stage** for a deep-tech start-up, usually higher than in the case of other types of startups. It is because the start-up has to work backwards and find a real-life problem that is worth solving using its technology. After this, it has to validate the adequacy and nature of the market demand for the innovation.

**Fourth**, there are several **venture funds** in India, but most pursue relatively '**lower risk' investment opportunities**. They are mainly interested in start-ups that exploit India's **growing consumption economy** or those making cloned products.

**Fifth**, academic researchers in India **lag in their potential to convert research into deep-tech start-ups**. They lag because: **(a)** They aspire to convert their inventions into enterprises but **do not have the mental make-up (the entrepreneur's mindset)**. They lack the knowledge of how to organize what they have and collaborate with others to get what they do not have/know; **(b)** With their **limited budgets**, incubators face a tough challenge to nurture start-ups to scale their revenues and attract investments; **(c)** There is **inadequate appreciation** amongst policymakers and university administrators for the need to build capacity on what entrepreneurship entails and what commercialisation of research means.

## What steps have been taken by the Government to support start-ups?

The Central and State governments in India have actively supported the startup sector over the past decade.

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**Start-up India platform**: It started in 2016 and has been instrumental in encouraging startups and integrating them with the corporate and investment community.

**State Specific Policies**: Over 26 States in India have a startup policy. Recently, Delhi Cabinet has passed an ambitious Delhi Startup Policy which it hopes would turn the capital into an international startup hub.

## What more can be done going ahead?

**First**, India **should introduce Customer Discovery and Customer Development programmes** to develop deep-tech start-ups from academic/ research institutions in India.

In 2013, the US Government through the National Science Foundation' introduced the I-Corps programme' to commercialize academic research in US universities. The I-Corps program uses experiential education to help researchers gain valuable insight into entrepreneurship, starting a business or industry requirements and challenges. Similarly, The Gopalakrishnan-Deshpande Centre for Innovation & Entrepreneurship (GDC) at IIT Madras has successfully run its I-NCUBATE programme which is inspired from the I-Corps program.

**Second**, the Government should inculcate a **culture of entrepreneurship in students** by adding the subject in the school curriculum of schools. For instance, the Delhi Government introduced entrepreneurship classes and a Business Blasters Program for students.

**Third**, the Government should also provide **monetary and non monetary incentives** to start-ups. Monetary includes reimbursement on lease rentals, reimbursement grants for filing patents, reimbursement for exhibition stall/rental cost etc. Non-monetary includes facilitating participation of companies for subsidized subscriptions of technology offerings, organizing fundraising events, relaxing government procurements process for start-ups etc.

## Conclusion

Data would be the driving force of the 21st century world which shows the immense relevance of establishing deep-tech start-ups. Keeping this in mind, India should work relentlessly to become *Atmanirbhar* in commercializing domestic science and technology for solving our complex problems.

Source: Yojana June 2022, **Mint**, **NASSCOM**

### Agnipath Scheme: Need, Benefits and Challenges – Explained, pointwise

## Introduction

The Government has unveiled a new Agnipath scheme for recruiting soldiers across the three services. This new defense recruitment reform has been cleared by the Cabinet Committee on Security and will come into effect immediately. The soldiers recruited under the scheme will be called *Agniveers*. The changes in the recruitment policy of **non-officer personnel** to the armed forces is being termed as a radical shift. The scheme is expected to make the force leaner and reduce the defense bill. However there are some challenges and concerns which would require redressal.

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## What is the Agnipath Scheme?

It is a short-service manpower model under which around 45,000 to 50,000 soldiers **will be recruited annually.** Of these, 75% will **leave the service in four years.** 25% will be allowed to continue for another 15 years under permanent commission.

**Eligibility Criteria**: The new system is only for personnel below officer ranks (those who do not join the forces as commissioned officers). Aspirants between **the ages of 17.5 years and 21 years** will be eligible to apply. The recruitment standards will remain the same, and recruitment will be done twice a year through rallies.

**Post Selection Scenario**: Once selected, the aspirants will go through training for six months and then will be deployed for three and a half years. During this period, they will get a starting salary of INR 30,000, along with additional benefits which will go up to INR 40,000 by the end of the four-year service.

30% of their salary will be set aside under a **Seva Nidhi programme**, and the Government will contribute an equal amount every month, and it will also accrue interest. At the end of the four-year period, each soldier will get INR 11.71 lakh as a lump sum amount, which will be tax-free. They will also get a **INR 48 lakh life insurance** cover for the four years. In case of death, the payout will be over INR 1 crore, including pay for the unserved tenure.

There shall be **no entitlement to gratuity and pensionary benefits**.

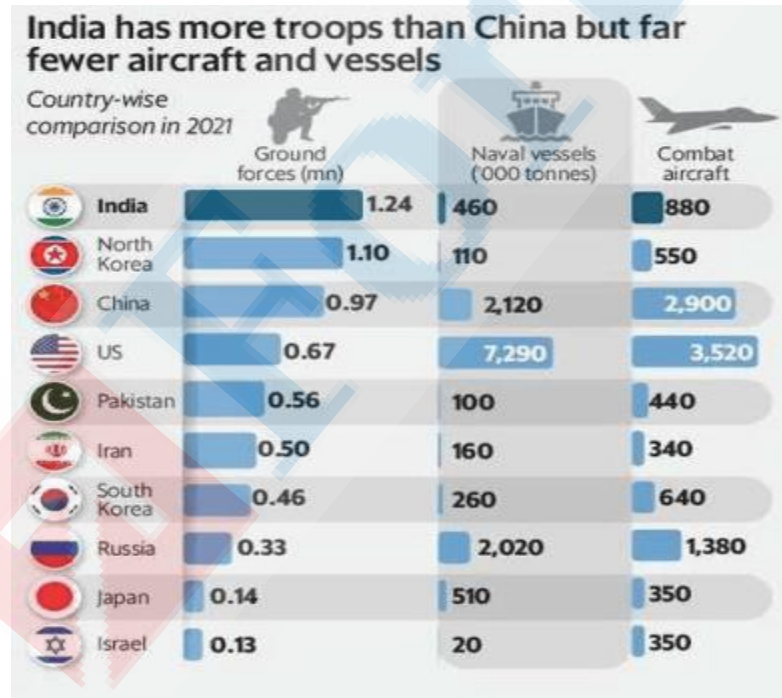## What is the significance of the Agnipath Scheme?

**Leaner and Younger Force**: The move will make the permanent force levels much leaner for the over 13-lakh strong armed forces in the country. As only 25% recruits will be allowed to continue for another 15 years under permanent commission. Further, the average age in the forces is 32 years today. It is expected to go down to 26 in 6 to 7 years with the implementation of the scheme. Notably, the Indian army in 1978 was more youthful than at present at the level of Other Ranks (ORs), with **sepoys comprising 72.6%** of a total of 8,45,025 men. Today, the number of sepoys has **fallen below 40%**. This is not a desirable mix when it comes to physically strenuous deployments, especially in high-altitude areas.

**Reducing Defense Bill:** A leaner force and reduced benefits will considerably decrease the defence bill, which has been a major concern for governments for many years. This year's Budget estimate on defense pension is INR 1,33,826 Crore which is 4.4% of total expenditure (0.6% of the GDP). Pensions made up 28.4% of this year's defense budget.

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## DEFENCE PENSIONS BILL

(in Rs crore)

1,33,825.00 (BE)

| Year | Value |
|------|-------|
| 1999-00 | 11,024.65 |
| 2000-01 | 10,488.23 |
| 2001-02 | 11,000.00 |
| 2002-03 | 12,715.00 |
| 2003-04 | 15,244.00 |
| 2009-10 | 34,999.45 |
| 2011-12 | 33,999.46 |
| 2013-14 | 45,495.77 |
| 2015-16 | 60,234.45 |
| 2017-18 | 94,997.54 |
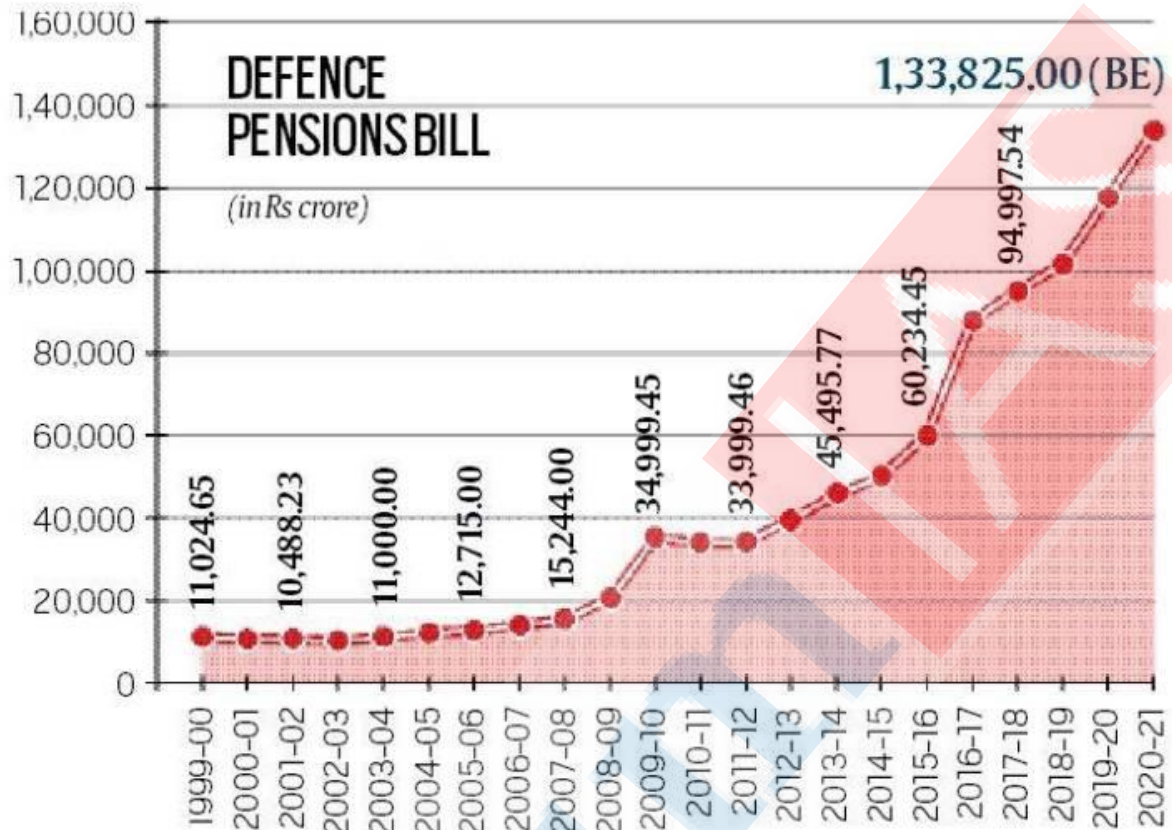
*Source: Indian Express*

Further, the saved money can be utilized to buy state-of-art technology and equipment which are the backbone of modern warfare.

## India has more troops than China but far fewer aircraft and vessels

Country-wise comparison in 2021

| | Ground forces (mn) | Naval vessels ('000 tonnes) | Combat aircraft |
|---|---|---|---|
| India | 1.24 | 460 | 880 |
| North Korea | 1.10 | 110 | 550 |
| China | 0.97 | 2,120 | 2,900 |
| US | 0.67 | 7,290 | 3,520 |
| Pakistan | 0.56 | 100 | 440 |
| Iran | 0.50 | 160 | 340 |
| South Korea | 0.46 | 260 | 640 |
| Russia | 0.33 | 2,020 | 1,380 |
| Japan | 0.14 | 510 | 350 |
| Israel | 0.13 | 20 | 350 |

*Source: Mint*

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**All India, All Class Recruitment**: The scheme will ensure 'All India, All Class' recruitment to the services. This is significant for the Army, where the regiment system has region and caste bases. These would be eliminated with time to allow anybody from any caste, region, class or religious background to become part of existing regiments. National unity, camaraderie and bonding should not be predicated on caste, community, religion or provincial affiliation but on the more equitable notion of being a patriotic Indian.

**Adhoc Buffer Force:** The ex-agniveers could act as an adhoc buffer force who may be called to serve again for boosting national security in times of external/internal threats.

**Economic Benefits**: The skills and experience acquired during the 4-year service will allow the soldiers to get employment in various fields. This will also lead to availability of a higher-skilled workforce to the economy which will be helpful in productivity gain and overall GDP growth.

**Global Parity**: All major militaries in the world are undergoing reform. There is a trend towards reduction in the number of personnel and emphasis on increasing capital expenditure on modern weapons and equipment.

The People's Liberation Army (PLA) underwent a massive demobilization from the 1980s onwards, bringing down total numbers from 4.5 million to about 2 million, with the focus on modernisation. Similarly, in many modern armed forces around the world, the service period ranges from 2 to 8 years with options for active and reservist service.

The Israeli army has service of 30 months and 22 months respectively for men and women, yet enjoys a reputation for being among the best in the world.

**What are the challenges associated with the Agnipath Scheme?**

**First,** The government hopes to hire 46,000 "agniveer" this year. Although with the age limits, the **recruitment may not include** those who have been waiting for the hiring freeze since 2020 to end. More than a lakh vacancies have built up in the Indian Army alone over the last two years, but under the new policy, not all may be filled.

**Second**, the Indian Army's experiments so far with diversity in closed regiments have yielded mixed results. There is a **probability that the new scheme may do more harm** than good in diversifying the static regiments.

**Third**, ex- agniveers may have to **face hardships in getting employment** after 4 years of service. Especially when meaningful employment opportunities in significant or adequate numbers still elude an ever-increasing number of graduates. Further, 'trained-to-kill' soldiers being demobilized every year **could prove dangerous** if they remain jobless and frustrated. Many believe it may lead to **militarisation of society**.

**Fourth**, Many experts believe that shorter duration service **could compromise on training, morale and commitment** in comparison to the permanent recruits. Critics argue that agniveers may turn out of to be risk-averse with the bulk looking to secure an alternate career. Moreover, the Government should have tested this scheme as a pilot, before scaling it up further.

**What lies ahead?**

**First**, the impact of changes such as hiring without the promise of lifelong benefits, the shortened training, and the opening out of regiments to AIAC **can only be assessed in the coming years**.

**Second**, in more immediate terms, when recruitment begins under the Agnipath Scheme in September, the response will show to what extent **the absence of a pension** acts as a spoiler.

**Third**, the Government should help **rehabilitate soldiers who leave the services after four years.** They can be provided with skill certificates and bridge courses that will help them in finding gainful employment.

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**Conclusion**

No reform can be fool-proof and without teething troubles. But as Agnipath Scheme concerns national defence and security, the Government will need to have a plan to anticipate and address the problems that lie beyond the bold step forward.

Source: **Indian Express**, **Indian Express**, **Indian Express**, **Business Standard**

## Air Quality Life Index (AQLI) – Explained, pointwise

**Introduction**

The recently released Air Quality Life Index (AQLI) shows a dismal picture of India with respect to the degree of air pollution. It has ranked India as the world's second most polluted country. The AQLI Analysis noted that the air pollution shortens average life expectancy in India by 5 years (relative to what it would be if the World Health Organization (WHO) standards on fine particulate pollution (PM2.5) were met). Some areas of India fare much worse than average, with air pollution shortening lives by almost 10 years in the National Capital Territory of Delhi, the most polluted city in the world. The report is a reminder for the Governments to take proactive measures for giving the masses a cleaner air to breathe.

**What is Particulate Matter?**

Particulate matter, or PM, is the term for particles found in the air, including dust, dirt, soot, smoke, and liquid droplets. They remain suspended in the air for long periods of time. Some particles are large or dark enough to be seen as soot or smoke. Others are so small that individually they can only be detected with an electron microscope.

Many manmade and natural sources emit PM directly or emit other pollutants that react in the atmosphere to form PM.

These solid and liquid particles come in a wide range of sizes. Particles less than 10 micrometers in diameter (PM10) pose a health concern because they can be inhaled into and accumulate in the respiratory system.

Particles with diameters between 2.5 and 10 micrometers are referred to as 'coarse'. Particles less than 2.5 micrometers in diameter (PM2.5) are referred to as 'fine' particles and are believed to pose the greatest health risks. Due to their small size (approximately 1/30th the average width of a human hair), fine particles can lodge deeply into the lungs.

Exposure to fine particles can cause short-term health effects such as **eye, nose, throat and lung irritation, coughing, sneezing, runny nose** and **shortness of breath**. Exposure to fine particles can also affect lung function and worsen medical conditions such as asthma and heart disease. Long term exposure to fine particulate matter may be associated with **increased rates of chronic bronchitis, reduced lung function and increased mortality from lung cancer and heart disease**.

**What is the Air Quality Life Index (AQLI)?**

The AQLI is released by the Energy Policy Institute at the University of Chicago (EPIC) every year. It is a pollution index that **translates particulate air pollution** into one of the most important metric: **its impact on life expectancy**. The AQLI is rooted in recent research that quantifies the causal relationship between long-term human exposure to air pollution and life expectancy.

The Index then combines this research with hyper-localized, global particulate measurements.

The recently released report has considered 2020 as the base year and included the revised guidelines of WHO. Last year, WHO had revised its guidelines and reduced the safe limit for PM 2. 5 from 10 micrograms per cubic metre to 5 micrograms per cubic metre.

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**What are the key findings of Air Quality Life Index?**

India is the second most polluted country in the world after Bangladesh. Nepal, Pakistan and Democratic Republic of Congo were placed at third, fourth and fifth position.

**All of India's 1.3 billion people** live in areas where the annual average **particulate pollution level exceeds the WHO guideline of 5 μg/m3**. Further, more than 63% of the population live in areas that exceed the country's own national air quality standard of 40 μg/m3.

Particulate pollution is the greatest threat to human health in India, reducing life expectancy by 5 years. In contrast, child and maternal malnutrition reduces average life expectancy by about 1.8 years, while smoking reduces the average life expectancy by 1.5 years.



*Source: EPIC*

**Temporal**: Particulate pollution has increased over time. Since 1998, average annual particulate pollution has increased by 61.4%, leading to a further reduction in average life expectancy of 2.1 years. Since 2013, about 44% of the world's increase in pollution has come from India.

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## Average PM$_{2.5}$ Concentrations in India, 1998 to 2020
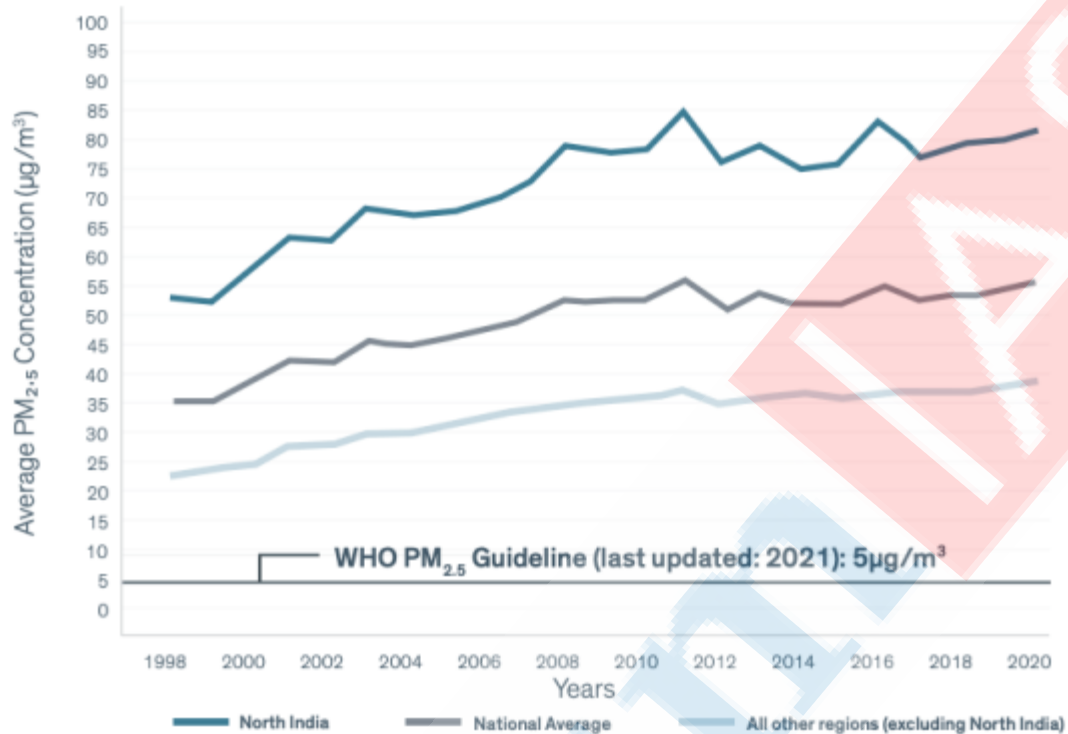


*Source: EPIC*

**Region Specific Findings**: In the Indo-Gangetic plains of Northern India, 510 million residents are on track to lose 7.6 years of life expectancy on average, if current pollution levels persist. Similarly, residents of Lucknow stand to lose 9.5 years of life expectancy if pollution levels persist.

## Potential Gains in Life Expectancy through Permanently Reducing PM$_{2.5}$ from 2020 Concentration to the WHO Guideline



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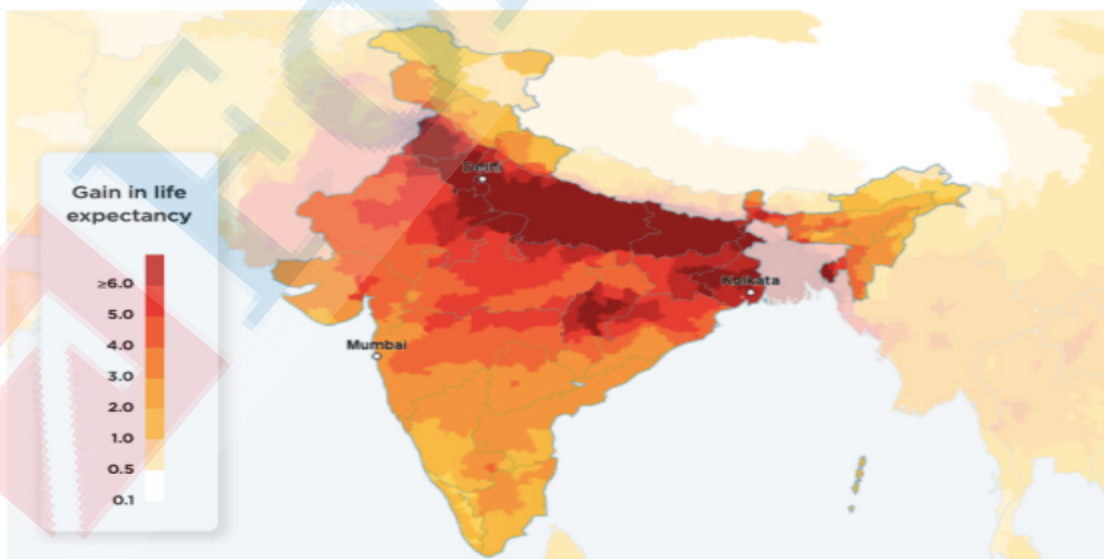
Potential Gain in Life Expectancy from Reducing PM$_{2.5}$ to the WHO Guideline in the 10 Most Populous States of India
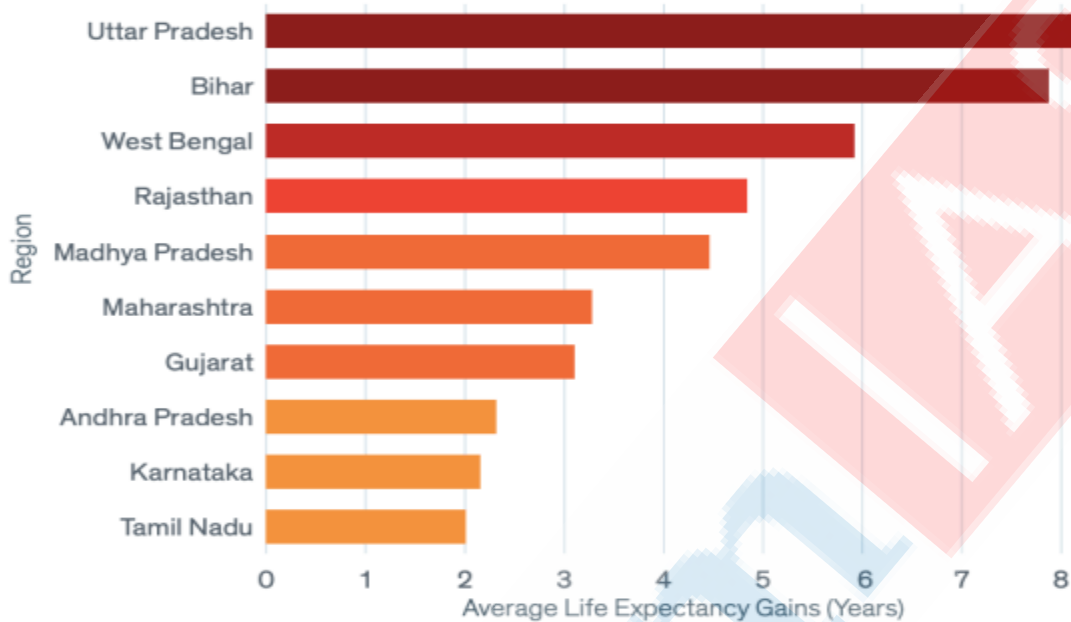


*Source: EPIC*

## How dangerous is Particulate Matter?

In 2019, over 7 million deaths annually were linked to exposure of various pollutants in the world with analysts claiming that **around 80% of deaths attributed to PM2.5 exposure.**

Among all classes of air pollutants, inhalable PM2.5 is considered the most hazardous as it gets deposited in lungs through breathing and causes serious respiratory problems.

AQLI noted that the impact of air pollution on life expectancy is comparable to that of smoking, more than three times that of alcohol use and unsafe water, six times that of HIV/AIDS, and 89 times that of conflict and terrorism.

## What is the significance of the Air Quality Life Index?

**First**, it presents **unprecedented insight** into the true **cost of particulate pollution** in communities around the world.

**Second**, the Index also **illustrates how air pollution policies can increase life expectancy** when they meet the WHO's guidelines for what is considered a safe level of exposure.

**Third**, the information presented by AQLI **can help to inform local communities and policymakers** about the importance of air pollution policies in concrete terms. Thereby inducing them to formulate robust policies.

## What are the reasons behind deteriorating air quality in India?

**First**, vehicular pollution mainly due to trucks, tempos and other diesel-run vehicles. These vehicles negate the impact of cleaner fuel and emission technology.

**Second**, combustion in power plants and industries using dirty fuels, like pet coke, Fuel Oil and its variants, coal and biomass release hazardous air pollutants.

**Third**, garbage burning, both in landfills and other places where there is no collection, processing or disposal.

**Fourth**, road dust; dust due to construction sites etc. also adds to the particulate pollution.

**Fifth,** use of insecticides, pesticides and fertilizers in agricultural activities release ammonia which is a major air pollutant.

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Further, **large-scale burning of crop residues** in the States of Punjab, Haryana and western Uttar Pradesh contributes significantly to the air pollution in the Delhi NCR Region every year. The climatic conditions during winter aggravate the condition.

## What steps have been taken towards reduction of air pollution?

**National Clean Air Programme (NCAP)**: It aims to reduce particulate pollution by 20 to 30% by 2024, relative to 2017 levels. The NCAP targets are non-binding.

**Read More**: National Clean Air Programme (NCAP)

**National Air Quality index (AQI)**: The AQI classifies air quality of a day considering criteria pollutants through colour codes and air quality descriptor. Further, it also links air quality with likely human health impacts. The index measures eight major pollutants, namely, particulate matter (PM10 and PM2.5), nitrogen dioxide, sulphur dioxide, ozone, carbon monoxide, ammonia and lead.

**The Air (Prevention and Control of Pollution) Act, 1981**: It provides for the prevention, control and abatement of air pollution. It calls for the establishment of Boards at the Central and State levels with a view to carrying out the aforesaid purposes.

## What steps can be taken going ahead?

**First**, the Government should **provide all forms of support** (money, staff and infrastructure) for timely achievement of NCAP targets. According to AQLI, a permanent, nationwide reduction of 25% would increase India's average national life expectancy by 1.4 years.

**Second**, emphasis should be laid on reducing emissions from thermal power plants and industry by instituting strong emissions standards. There should be a strong monitoring and enforcement system that ensures limits are met and excess emissions lead to punishments.

**Third**, the Government should incentivise the **use of machines like happy seeders** to curb pollution from stubble burning. Further innovative methods should be adopted to reduce the magnitude of crop residue along with creation of a market for the use and management of stubble outside of the field (ex-situ management).

## Conclusion

There is mounting evidence about the effects of air pollution on health. The important message from new studies and analysis is that is air pollution related deaths and illness are preventable. Reducing pollution and meeting clean air targets can save lives. Given its widespread impact, combating air pollution should be one of the top agenda for the Union and State Governments
Source: **The Times of India**, **The Times of India**, **Down to Earth**, **EPIC**


### Nuclear Disarmament and India's Stance – Explained, pointwise

## Introduction

The Stockholm International Peace Research Institute (SIPRI) has released its yearbook. The Report has highlighted some worrying trends in international security in the past year. The expected rise of the global nuclear arsenal was the chief cause of concern among SIPRI experts. The comprehensive report claims that while absolute numbers of nuclear arsenal have reduced, they are expected to grow over the next decade. Considering this scenario, it is imperative countries come forward and take prudent steps in order move towards Nuclear Disarmament.

## About Nuclear Weapons

A nuclear weapon is a device designed to release energy in an explosive manner as a result of nuclear fission, nuclear fusion, or a combination of the two processes.

Fission weapons are commonly referred to as atomic bombs. Fusion weapons are also referred to as thermonuclear bombs or, more commonly, hydrogen bombs. Nuclear weapons produce

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enormous explosive energy. For example, the atomic bomb dropped on Hiroshima, Japan, in 1945, contained only about 64 kg (140 pounds) of highly enriched uranium. However, it released energy equaling about 15 kilotons (1000 tons) of chemical explosive.

**What are the key findings of the SIPRI Report?**

Russia has the highest number of nuclear weapons with 5977 warheads, followed by the US. The US possesses 5428 nuclear weapons. However, the US has the highest number of deployed warheads (1744) followed by Russia (1588).

The US and Russia are followed by China (350), France (290), the UK (225), Pakistan (165), India (160), Israel (90) and North Korea (20). Thus, the rest of the nuclear powers are way behind the US and Russia in terms of nuclear weapon stockpiles.
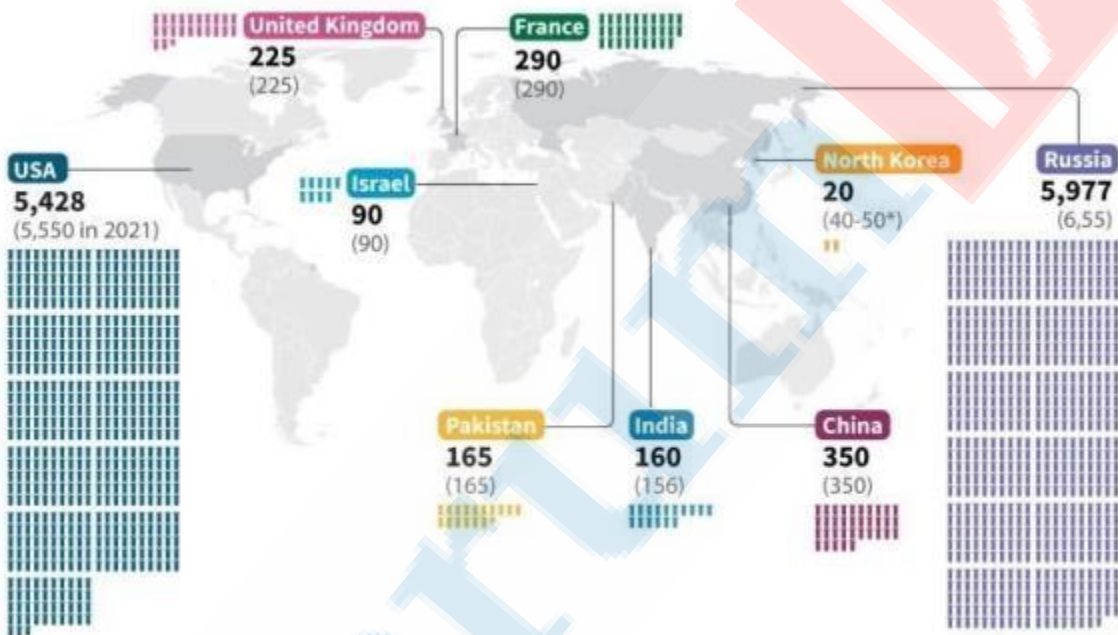


*Source: AFP*

The **marginal downsizing observed in the nuclear arsenal has come mostly from the U.S. and Russia dismantling retired warheads**. But the Russian invasion of Ukraine has raised some serious concerns because of the continuous rhetoric of not shying away from the use of nuclear weapons.

Further, China's recent activities surrounding construction of 300 new nuclear missile silos have also been turning heads. In the subcontinent, India and Pakistan seem to be making gains over their nuclear arsenal (in absolute numbers).

**Concerns**: The yearbook mentions low level border clashes between India and Pakistan, the civil war in Afghanistan, and the armed conflict in Myanmar as some of the worrying indicators of an unstable system.

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It also highlighted three cause of concern trends: Chinese-American rivalry, involvement of state and non-state actors in multiple conflicts, and the challenge that climatic and weather hazards pose.

## Why do countries value Nuclear Weapons?

**Symbol of modernization:** Adding nuclear weapons to the arsenal shows that the military is getting prepared for future emergencies and attaining modern capabilities. Countries are focusing on development of newer and more efficient nuclear submarines, aircraft carriers, fighter jets, manned and unmanned aerial vehicles etc.

**Deterrence Effect**: Nuclear weapons create a deterrence effect even on strong military powers. For instance, many experts are saying that Russia wouldn't have invaded Ukraine if the latter hadn't given up nuclear weapons in early 1990s.

**Regional Superiority**: Any country which desires to establish a steady control over its region wishes to obtain/retain control of nuclear weapons. For instance, the U.S exercises substantial control over the American continent due to its huge arsenal of nuclear weapons.

**Permanent Membership of UNSC**: Permanent members enjoy veto over the decisions of the UN and in a way controls the world affairs. All of them possess a huge arsenal of nuclear weapons which was a crucial factor kept in mind while offering them a permanent seat in UNSC.

## What is the need for Nuclear Disarmament?

**Huge Magnitude of Destruction**: The Nuclear Explosion at Hiroshima released energy equaling about 15 kilotons of chemical explosive. The blast immediately produced **a strong shock wave, enormous amounts of heat, and lethal ionizing radiation**. The enormous toll in destruction, death, injury, and sickness produced by the explosions at Hiroshima and Nagasaki was on a scale never before produced by any single weapon.

**Against Rules of War**: Nuclear Weapons can't strictly obey the rule of differentiating between combatants and civilians. Even if it is used over the military, then also radiation can impact nearby civilian populations.

**Sovereign Equality:** The destruction of nuclear weapons is imperative to truly realize the principle of sovereign equality of nations. Otherwise the world would remain divided between nuclear haves and have nots.

**Fake Triggers:** As per recent reports, the U.S and Russia have a sufficient nuclear arsenal to completely destroy the earth. In such a scenario, any fake trigger using misinformation or fake news can destroy the very existence of human beings from earth.

**Non state Actors**: The growing recruitment of educated youth in terrorist organizations raises a fear that they may attain nuclear prowess in future. This situation can be disastrous and bring a state of anarchy as terrorist have no regard to international law.

## What steps have been taken to prevent Nuclear Proliferation?

**Non-proliferation of Nuclear Weapons (NPT), 1968:** It was put forward by the USA, UK and USSR. It was signed in 1968 and came into force in 1970. The treaty has 3 pillars: **(a) Non-proliferation**: Nuclear Weapon States (NWS) pledge not to transfer nuclear weapons and technology and Non-nuclear Weapon States pledge not to acquire nuclear weapons; **(b) Disarmament**: All parties to pursue good-faith negotiations on effective measures to control nuclear arms race, and to general and complete disarmament; **(c) Peaceful Use of Nuclear Energy**: The Treaty recognizes the right of all Parties to develop nuclear energy for peaceful purposes.

India considers the treaty discriminatory as it creates a club of '**nuclear haves**' and a larger group of '**nuclear have-nots**' by restricting the legal possession of nuclear weapons to those states that tested them before 1967. India hasn't signed the treaty. Pakistan, Israel and South Sudan are other non-signatory countries.

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**Read More**: 50 years of Nuclear Non-Proliferation Treaty (NPT)

**Treaty on the Prohibition of Nuclear Weapons, 2017:** It prohibits and makes it illegal to possess, use, produce, transfer, acquire, stockpile or deploy nuclear weapons. States are also prohibited from using or threatening to use nuclear weapons and other nuclear explosive devices. It came into force in 2021.

**Export Control Groupings: Nuclear Suppliers Group (NSG) and the Missile Technology Control Regimes (MTCR)** are some of the nuclear export control groupings. These ensure that nuclear fuel export doesn't result in nuclear weapons development.

**Conference on Disarmament** (CD): It is a multilateral disarmament forum established by the international community to negotiate arms control and disarmament agreements based at Geneva. The Conference was first established in 1979 as the Committee on Disarmament. It was renamed the Conference on Disarmament in 1984. The Conference succeeded three other disarmament-related bodies: **(a)** Ten-Nation Committee on Disarmament (1960); **(b)** Eighteen-Nation Committee on Disarmament (1962–68); **(c)** Conference of the Committee on Disarmament (1969–78).

**Read More**: Proliferation of Nuclear Weapons and Its Prevention

## What is India's Nuclear Doctrine?

**(a)** Building and maintaining a credible minimum deterrence; **(b)** A 'No First Use' policy i.e. nuclear weapons to be used only in case of any nuclear attack on Indian territory or on Indian forces anywhere; **(c)** Non use of nuclear weapons against non-nuclear weapon states; **(d)** Nuclear retaliatory attacks to be authorised only by civilian political leadership through the Nuclear Command Authority; **(e)** Nuclear retaliation to a first strike will be massive and designed to inflict unacceptable damage; **(f)** India may retaliate with nuclear weapons to retaliate against attack with biological or chemical weapons; **(g)** Strict controls on export of nuclear and missile related materials and technologies; **(h)** A commitment to the goal of a nuclear weapon free world.

## What is India's Stance on Nuclear Disarmament?

India is fully committed to complete Nuclear Disarmament. India supports complete disarmament within a specified timeframe which distinguishes its stance from Nuclear Weapon States (NWS) which have an ambiguous stand regarding timeline for disarmament.

India also insists that disarmament must be 'non-discriminatory' and pursued 'on the basis of equality' i.e., there must be no discriminatory provisions in favor of NWS as is the case with the Non-Proliferation Treaty (NPT). The NPT call for ultimate elimination of nuclear weapons but hasn't put on timeframe for the same. India calls for complete disarmament despite being a non-signatory of the NPT.

## What lies ahead?

The recent geopolitical events transpiring around the world in practically all regions have made the global security climate more unstable. It is further aided by actions of authoritarian leaders of not just non-democratic systems but also of strongmen leaders of democratic systems.

The two largest nuclear weapons holding states need to take on a more engaging role in the international arena. SIPRI's yearbook should force the Governments to look critically at how the global disarmament project seems to be going.

Apart from this, clear and constant communication between Nuclear weapon states is desired in order to avoid the usage of a nuclear weapon based on fake news or misinformation.

## Conclusion

The nations must come forward and prepare a road map for a gradual phase down of nuclear weapons. It is sine qua non for long term well being of humankind keeping in mind the saying

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of **Albert Einstein** – " I do not know with what weapons World War III will be fought, but World War IV will be fought with sticks and stones".
Source: **The Hindu**, **NTI**


### Access to Assistive Technology: Challenges and Solutions – Explained, pointwise

**Introduction**

The WHO and UNICEF recently released the Global Report on Assistive Technology. The Report has been developed in response to the World Health Assembly resolution (WHA71.8) on improving access to assistive technology. The resolution was adopted in May 2018. The Report assumes significance as globally 90% of those who need assistive technology do not have access to it. The Report is expected to play an instrumental role in setting the global roadmap for improving access to assistive technology for everyone, everywhere. It is primarily directed at policy-makers, providers of assistive technology, donors and funding agencies, and industry leaders.

**What is meant by Assistive Technology?**

These include any item, piece of equipment, software programme or product system that is used to increase, maintain, or improve the functional capabilities of persons with disabilities. These aids could be **(a) Physical products** such as wheelchairs, eyeglasses, hearing aids, prostheses, walking devices or continence pads; **(b) Digital** such as software and apps that support communication and time management; or **(c) Adaptations to the physical environment**, for example, portable ramps or grab-rails.

Different disabilities require different assistive technologies, and these are designed to help people who have difficulty speaking, typing, writing, remembering, seeing, hearing, learning, or walking.

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## Types of Assistive Technology

**Computer Access**
Alternate means for the individual to access the computer

**Writing**
Adaptives to produce text material

**Reading**
Adaptives to reading material to make it accessible.

**Visual Aids**
Enable individuals with visual impairments to gain information from various sources & activities

**Physical Education, Leisure, & Play**
Helps to enhance social interaction and participation in recreation activities

**Augmentative Communication**
Assistive means for communicating effectively in other ways than standard speech

**Assistive Listening**
Assistive ways to gain greater auditory access to information.

**Mobility**
Items & devices that enable individuals to move around more independently

**Environmental Control**
Enables individuals to gain independent control of their environment

**Activities of Daily living (ADL's)**
Enables individuals to gain independent control of daily functions (i.e. eating, dressing, etc.)

**Seating & Positioning**
Enables greater physical access to activities and environments

**Equal Access**

*Source: edtechnology.co.uk*

**What are the key findings of the WHO Report?**

The GReAT report draws upon surveys conducted in 20 countries. These indicate that the proportion of the population currently using at least one assistive product ranges from less than 3% to about 70%. This indicates widespread disparity in access to assistive technology.

More than 2.5 billion people need one or more assistive products, such as wheelchairs, hearing aids, or apps that support communication and cognition.

A billion of them are denied access, particularly in low- and middle-income countries, where access can be as low as 3% of the need for these life-changing products.

What is the situation regarding disability in India?

The 2011 Census puts the national estimate of the number of people with disabilities at 2.21% of the total population (26.8 million persons). This includes persons with visual, hearing, speech, locomotor and mental disabilities with the majority in the 19-59 age group.

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Amongst the people with disabilities, 49% are literate, 34% employed and 75% live in rural areas. The country's disabled population increased by 22.4% between 2001 and 2011 census periods. The 76th round (July-December 2018) of the National Sample Survey (NSS) reported that among persons with disabilities, 21.8% reported receiving aid/help from the government and another 1.8% from other organizations.

## What is the significance of Assistive Technology?

**Ease in Day to Day activities:** As a life changer, assistive technology (AT) can support people in need in all aspects of life. Using AT, a child can go to school, make friends, and participate in sports and recreation like any other child in the school or community. Adults can be independent and access higher education and jobs, carry out household activities, and participate in social life. For instance, **Arunima Sinha** used Jaipur Foot to climb Mount Everest and became the first female amputee to do so.

**Realization of True potential**: It helps an individual to overcome barriers and unleash its true potential. For instance, **Stephen Hawking** used an assisted communication system and a speech synthesizer to compose lectures and papers. This helped him emerge as one of the greatest physicists and cosmologists of all time.

**Prevents Isolation and Hardships**: Without assistive products, people may suffer exclusion, be at risk of isolation and live in poverty. They may face hunger, and be forced to depend more on family, community and government support.

**Achieving SDGs**: Including assistive technology into health systems is critical for progress towards the Sustainable Development Goals (SDG) especially SDG 3 which calls for Universal Health Coverage (UHC).

## What are the barriers in accessing Assistive Technologies?

**First,** there is **lack of awareness** that often drives low uptake, compounded by an absence of information on the types and availability of assistive products.

**Second**, **high costs** due to over-priced assistive products and associated service delivery cost is one of the most common barriers.

**Third**, **limited physical and geographical access** puts assistive technology out of reach for many potential users.

**Fourth**, **inadequate product range, quantity, quality and suitability** can make assistive products unavailable, unsafe, ineffective and even abandoned. Further, Procurement and delivery challenges delay and reduce access.

**Fifth**, **capacity gaps exist in the assistive technology workforce** along with a shortage of workforce with adequate knowledge.

**Sixth**, **low policy profile and lack of legislation** lead to the low prioritization of assistive technology, and in many cases legislation fails to cover people with all types of functional difficulty.

**Seventh**, **Lack of funding and investment** for the strengthening of national assistive technology systems exists in many countries which restricts access to the marginalized section.

**Eighth**, there is **Fragmentation of the assistive technology sector**, including between professions, user groups, funding and provision mechanisms.

## What steps have been taken for persons with disabilities?

National

**The Rights of Persons with Disabilities Act, 2016:** The Act, increased the number of disabilities from 7 to 21. It made provision for reservation in higher education and government jobs. It mandated free education for children between 6 to 18 years. It also mandates the

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Government to take measures to promote health, education, skill development, and employment opportunities for PwDs.

**Assistance to Disabled Persons for Purchase/Fitting of Aids and Appliances (ADIP) scheme**: Under this aid and assistive devices are distributed to divyangjan to improve their mobility. This helps them in carrying out daily living activities independently and earn a living.

**Accessible India Campaign:** It focuses on accessibility in the built-up environment, transportation system, and ICT ecosystem.

> **Read More**: [Yojana May Summary] Empowering Divyangjan – Explained, pointwise

Global

**Universal Declaration of Human Rights (UDHR):** It places an obligation on member states to provide assistive technology to persons with disabilities.

**United Nations Convention on the Rights of Persons with Disabilities (UNCRPD):** The UNCRPD in its preamble emphasizes mainstreaming disability and acceptance of persons with disabilities as part of human diversity and humanity.

**Priority Assistive Products List**: The WHO launched the Priority Assistive Products List in 2018. These include hearing aids, wheelchairs, communication aids, spectacles, artificial limbs, pill organizers, memory aids and other essential items for the elderly and persons with disabilities.

## Improving the Assistive Technology System

The Report notes that Improving the assistive technology system means developing and strengthening its four components: Products, Provision, Personnel and Policies.

- **Products**: The **range, quality, affordability** and **supply** of assistive products need to improve. **Repairing, refurbishing** and **reusing** can be faster and more cost-effective. **Harmonizing product standards** can ensure safety, performance and durability.
- **Provision**: Service delivery or provision of assistive products and related services should be as close as possible to people's own communities, including in rural areas. Services should be designed to minimize and prevent further injuries or disabilities. Services **need to be delivered across all geographic areas and populations**.
- **Personnel**: The workforce required to ensure access to assistive technology for everyone, everywhere needs to be mapped and addressed. **Training and education** for dedicated as well as allied assistive technology workforce and support networks are a prerequisite.
- **Policy**: Political will, legislation and **adequate funding**, along with permanent implementation systems and structures, are required to **ensure universal, rights-based assistive technology access** for everyone, everywhere.

Source: Global Report on Assistive Technology                                    Created by | ForumIAS©

## What further steps can be taken?

**First**, Assistive technology provision needs to be **integrated in all key development sectors**, especially within health, education, labor and social care. Every country needs to have an integrated or standalone assistive technology policy and plan of actions with adequate budgetary support.

**Second**, Assistive products should be **affordable, durable, safe and effective**. This includes: **(a)** Developing or strengthening necessary regulatory systems and standards; **(b)** Systematic feedback mechanisms built into the supply chain; **(c)** Provision of assistive products with the

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support of a competent workforce; **(d)** Active engagement of users and their families in product selection as well as training on use and maintenance.

**Third**, focus should be on **increasing public awareness and combating stigma**. The assistive technology sector can be de-stigmatized through better product design, preferably universal design, and larger acceptance. Political support is required to develop the assistive technology sector to achieve universal coverage through a rights-based approach.

**Fourth**,  every country should have **periodical population-based data on the need and demand for, and supply of assistive technology**. This will help in understanding the gaps and trends for developing evidence-based strategies.The WHO rapid assistive technology assessment (rATA) tool can be used to collect population-based data.

**Fifth**, greater **investment should be made in research and development** of assistive technologies. This will help in creation of more affordable and durable products.

**Sixth**, there should be greater engagement of countries and organizations at international level. **Article 32 of the UN Convention on the Rights of Persons with Disabilities** states that international cooperation to support national efforts is necessary to improve access to assistive technology across the world.

## Conclusion

Countries must work with full vigor to achieve Universal coverage to Assistive Technology. This implies that everyone, everywhere receives the assistive technology that they need without financial or any other hardship.

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


## 12th Ministerial Conference of the WTO – Explained, pointwise


## Introduction

The 12th Ministerial Conference (MC) of the WTO concluded recently. The members of the World Trade Organization agreed to a series of deals the Conference. This includes temporary waivers on COVID-19 vaccines, a moratorium on e-commerce trade, food security and setting limits on harmful fishing subsidies. India played a significant role in developing consensus on these deals. However, certain long-standing issues in the WTO need to be addressed in order for it to regain its dwindling stature, especially after the growing focus towards regional agreements and groupings.

## About the World Trade Organization (WTO)

The World Trade Organization is the only international organization that deals with the rules of trade between countries. The WTO officially commenced in 1995 under the Marrakesh Agreement signed by 124 nations, replacing the General Agreement on Tariffs and Trade (GATT). Currently, it has 164 members and 23 observer governments (like Iran, Iraq, Bhutan, Libya etc).

According to its rules, **all decisions are taken through consensus** and **any member can exercise a veto**.

Its aim is to promote free trade, which is done through trade agreements that are discussed and signed by the member states. The WTO also provides a forum for countries to negotiate trade rules and **settle economic disputes between them**.

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## Key Agreements under the WTO

- **Agreement on Subsidies and Countervailing Measures (SCM):** The WTO SCM Agreement contains the **definition of the term 'subsidy'**. A subsidy contains three basic elements: **(a)** A financial contribution **(b)** By a Government or any public body within the territory of a Member **(c)** Confers a benefit. All three of these elements must be satisfied in order for a subsidy to exist.

- **General Agreement on Trade in Services (GATS):** The GATS was inspired by essentially the same objectives as its counterpart in merchandise trade, GATT. It aimed at **creating a credible system of international trade rules** and **ensuring fair and equitable treatment of all participants** (Principle of Non-discrimination).

- **The Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS):** It sets down minimum standards for many forms of **intellectual property (IP) regulation** as applied to nationals of other WTO Members. It was negotiated at the end of the Uruguay Round of the General Agreement on Tariffs and Trade (GATT) in 1994.

- **Agreement on Agriculture:** It was concluded in 1994. It was aimed to **remove trade barriers**, promote **transparent market access** and **integration of global markets**. It is often criticized as a tool in the hands of developed countries to exploit weak countries. Negotiations are still going on for some of its aspects.

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### What is WTO's Ministerial Conference?

The Ministerial Conference is the **WTO's top decision-making body** and usually meets every two years. All members of the WTO are involved in the MC and they can take decisions on all matters covered under any multilateral trade agreements.

The 12th Ministerial Conference of the WTO was held in Geneva, Switzerland from 12-17 June. It was supposed to end on 15 June, but with intensifying negotiations, the conference was extended by two days.

### What are the key takeaways from the 12th Ministerial Conference of the WTO?

**Curtailing harmful fishing subsidies**: The WTO passed a multilateral agreement that would curb 'harmful' subsidies on illegal, unreported and unregulated fishing for the next four years. Since 2001, member states have been negotiating the banning of subsidies that promote overfishing.

**Exemption for Food Security**: Members agreed to a binding decision to exempt food purchased by the UN's World Food Programme (WFP) for humanitarian purposes, from **any export restrictions**. However, countries would be allowed to restrict food supplies to ensure domestic food security needs.

**Moratorium on e-commerce transactions**: Members agreed to continue the long-standing moratorium on custom duties on e-commerce transmissions. It will be continued until the subsequent Ministerial Conference or until March 31, 2024, depending on whichever comes first.

**Temporary Waiver on Covid 19 vaccines**: WTO members agreed to temporarily waive intellectual property patents on Covid-19 vaccines without the consent of the patent holder for 5 years.

### What is the significance of the recent agreements?

**First**, the fisheries agreement is of immense significance as it is the first time that members concluded an agreement with **environmental sustainability** at its heart. It will also help in the **protection of livelihoods** of the 260 million people who depend directly or indirectly on marine fisheries. It is **only the second multilateral agreement on global trade** rules struck in its 27-year history.

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**Second**, the exemption of WFP's food from tariffs is vital for **promoting global food security** especially in light of the global food shortages and rising prices caused by the war between Ukraine and Russia.

**Third**, the temporary waiver will contribute to ongoing efforts to **concentrate and diversify vaccine manufacturing capacity** so that a crisis in one region does not leave others cut off.

## Why are the current agreements being criticized?

**First**, critics believe that the fisheries agreement **would only restrict and not eradicate subsidies on illegal fishing**. After 20 years of delay, the WTO failed again to eliminate subsidized overfishing. This in turn allows the countries to continue to pillage the world's oceans.

**Second**, India has asked the WTO to review the extension of the moratorium on custom duties on e-commerce transactions. Developing countries faced the brunt of the **financial consequences of such a moratorium**. From 2017-2020, developing countries lost a potential tariff revenue of around $50 billion on imports from only 49 digital products.

**Third**, the recent temporary waiver is a **watered down version of the original proposal made by India and South Africa** in 2020. They had wanted broader intellectual property waivers on vaccines, treatments and tests. The current waiver does not adequately waive IP on all essential COVID-19 medical tools and it does not apply to all countries.

## What are other issues surrounding the WTO?

**Burden for Poor countries**: The WTO rules include many Non-trade subjects as well. The subjects like environment, labour standards, fossil fuel subsidies, plastic pollution and transparency in government procurement have been brought into the fold of the WTO. This is expected to raise costs for the poor and developing countries and impact the competitiveness of their goods. For instance, a poor country exporting cotton shirts must first meet high environmental standards at home. This will only raise costs and cut exports from poor countries.

**Trade wars**: The US administration imposed steep tariffs in January 2018 on China alleging IP violations. In December 2019 the US also blocked the appointment of new nominees to WTO's appellate body. This has paralysed the WTO as a judge and enforcer of global trade rules.

**Lack of consensus**: The developed nations' game plan is to put the old obligations on the back-burner and push the WTO to form rules on new areas like e-commerce. It is an area where the US firms have a clear edge. Most WTO member countries want them to first deliver on the agreed issues like reduction in agriculture subsidies.

## What lies ahead?

**First**, India's key demand to allow it to export food from its public stockholdings to other countries will reportedly be discussed in the next Ministerial Conference in 2023.

**Second**, Majority of negotiations are usually blocked by dissenting countries. Therefore, guidelines should **spell out clear criteria for when a country may use its veto power**. Veto usage needs to be weighed against the interests of all, and in light of the WTO's mandate.

**Third**, an **independent panel** could play the role of arbiter, evaluating the competing claims and helping to overcome the political deadlock.

**Fourth**, **New rules** are required to keep pace with changes in the market and technology. Rules and disciplines on topics ranging from trade-distorting industrial subsidies to digital trade require updates.

**Fifth**, **Plurilateral negotiations** should be promoted as they allow like minded members come together to deliberate on a specific issue. This makes it easier and faster to negotiate than multilateral accord like passage of Trade Facilitation Agreement in 2013.

## Conclusion

The WTO holds immense relevance considering the rapid pace of globalization and technological advancement across the world. It is still the most fundamental organization to protect the trade

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interest of small and developing countries against the diktat of the developed world. However, the deadlock on contentious issues like agriculture subsidies must be resolved urgently, for WTO to stay relevant. Else, the regional trade agreements will continue to take WTO's place and this will prove detrimental to the interests of the developing countries.

Source: **Indian Express**, **The Hindu**, **Business Standard**, **Mint**

## Ban on Single-Use Plastic – Explained, pointwise

### Introduction

Plastic waste management is becoming a challenging task for countries across the globe and India is no exception to it. The use of plastic is on rise while its disposal and safe management hasn't been commensurate with increased usage. This has resulted in creation of landfills on land and garbage patches in oceans. Considering this, the Government of India has put a **ban on 'Single-Use Plastic' from July 1** under the **Plastic Waste Management Amendment Rules, 2021**. The Ministry for Environment, Forest and Climate Change had issued a gazette notification last year announcing the ban, and has now defined a list of items that will be banned from next month.

### What is Single-Use Plastic (SUP) and magnitude of its usage?

It refers to plastic items that are used once and discarded. The Plastic Waste Management Rules, amended in 2021, define single-use plastic as plastic item intended to be used once for the same purpose before being disposed of or recycled. There are different types of plastic: PET, High-density Polyethylene, Low-density Polyethylene, Linear low-density polyethene (LLDPE), PVC, Polypropylene and Styrofoam.
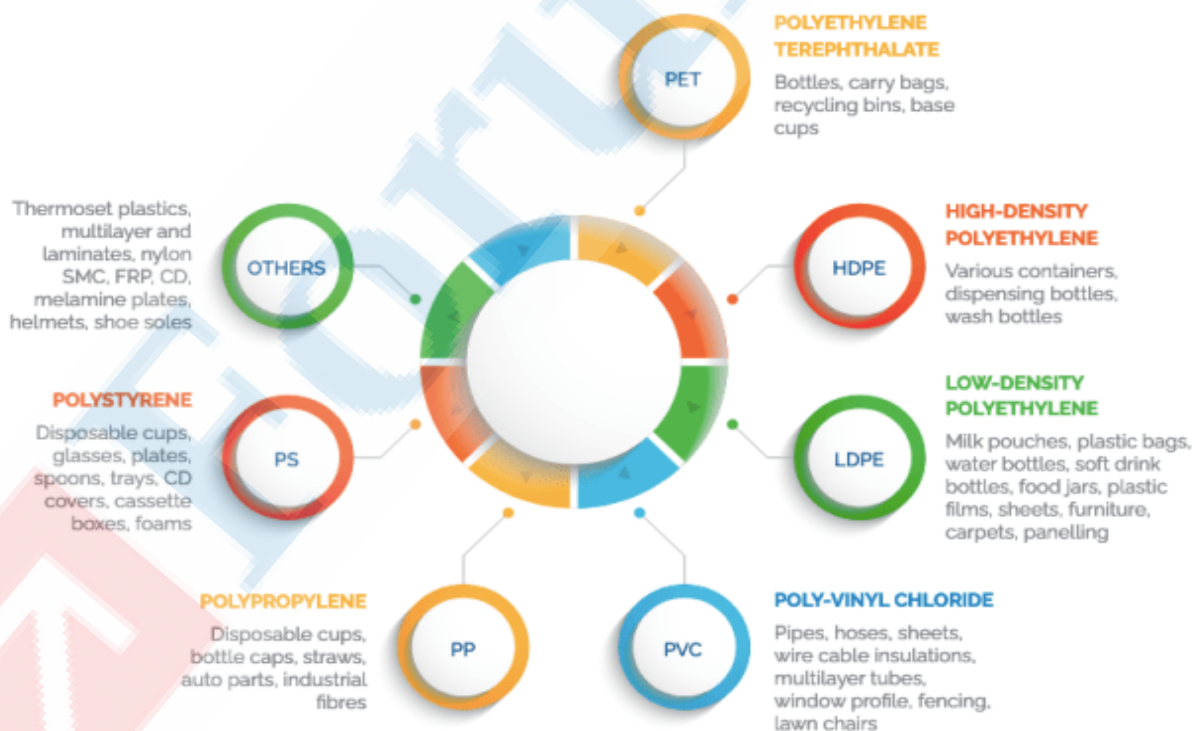


*Types of Plastics and their Applications. Source: NITI Aayog-UNDP Handbook Sustainable Urban Plastic Waste Management*

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There is also a category of multi-layered plastic made by combining different plastics and materials. For instance, wafers or gutka packets or shampoo sachets. SUP can belong to any of these categories.

Single-use plastic has among the highest shares of plastic manufactured and used. It is present in packaging of items, bottles (shampoo, detergents, cosmetics), polythene bags, face masks, coffee cups, cling film, trash bags, food packaging etc.

A 2021 report by the Minderoo Foundation (Australian philanthropic organization) said **single-use plastics account for a third of all plastic produced globally**. Single-use plastic also accounts for the majority of plastic discarded – 130 million metric tonnes globally in 2019. All of this is burned, buried in landfills or discarded directly into the environment.

The report found that India features in the top 100 countries of single-use plastic waste generation – **at rank 94**. The top three being Singapore, Australia and Oman.With domestic production of 11.8 million metric tonnes annually, and import of 2.9 MMT, India's net generation of single-use plastic waste is 5.6 MMT, and per capita generation is 4 kg.

## What is the current status and coverage of plastic ban?

The items on which the Central Pollution Control Board (CPCB) have announced a ban are earbuds; balloon sticks; candy and ice-cream sticks; cutlery items including plates, cups, glasses, forks, spoons, knives, trays; sweet boxes; invitation cards; cigarette packs; PVC banners

The Ministry had **already banned polythene bags under 75 microns in September 2021,** expanding the limit from the earlier 50 microns. **The ban will be extended to polythene bags under 120 microns** from December 2022. The ban is being introduced in phases to give manufacturers time to shift to thicker polythene bags that are easier to recycle.

As per **the Plastic Waste Management Rules, 2016**, there is also a complete ban on sachets using plastic material for storing, packing or selling gutkha, tobacco and pan masala.

## How will the ban on single-use plastic be enforced?

The ban on single-use plastic will be monitored by the CPCB from the Centre, and by the State Pollution Control Boards (SPCBs) that will report to the Centre regularly.

Directions have been issued at national, state and local levels. For example, all petrochemical industries have been instructed to not supply raw materials to industries engaged in the banned items. Directions have also been issued to SPCBs and Pollution Control Committees. They must modify or revoke 'consent to operate' issued under the Air/Water Act to industries engaged in single-use plastic items.

Those found violating the ban can be **penalized under the Environment Protection Act 1986**. It allows for imprisonment up to 5 years, or a penalty up to INR 1 lakh, or both. Violators can also be asked to pay Environmental Damage Compensation by the SPCB. In addition, there are municipal laws on plastic waste, with their own penal codes.

## How are other countries dealing with single-use plastic?

Bangladesh became the first country to ban thin plastic bags in 2002. New Zealand became the latest country to ban plastic bags in July 2019. China issued a ban on plastic bags in 2020 with phased implementation. As of July 2019, 68 countries have banned the use of plastic bags with varying degrees of enforcement.

Eight states in the US have banned single-use plastic bags, beginning with California in 2014. Seattle became the first major US city to ban plastic straws in 2018.

On July 2, 2021, the Directive on Single-Use Plastics took effect in the European Union (EU).

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## What are the harmful effects of plastic pollution?

**Longevity**: The chemical bonds that make-up plastics are strong and made to last. The decomposition rate of plastic typically ranges from 500 to 600 years, depending on the type. This make them one of the major environment pollutant.

**Greenhouse gas Emissions**: On the current trajectory of production, it has been projected that single-use plastic could account for 5-10% of greenhouse gas emissions by 2050.

**Landfill Creation**: The country is witnessing a rise in landfill creation especially across major cities like Delhi, Mumbai etc. The Ghazipur landfill in Delhi is soon expected to surpass the height of Qutub Minar. Single use plastic has played a crucial role in enhancing the extent and height of such landfills. Plastics keep on **releasing harmful toxins** in the adjacent areas **polluting local soils and groundwater**.

**Impact on Health**: When plastic remains in the environment for long periods of time and does not decay, it turns into microplastics. This enters food sources and then the human body, causing severe health problems.

**Impact on the Marine Ecosystem**: According to the International Union for Conservation of Nature, the world produces over 300 million tonnes of plastic every year, of which 14 million tonnes end up in the ocean. Marine species **ingest or are entangled by plastic debris**, which causes severe injuries and death.
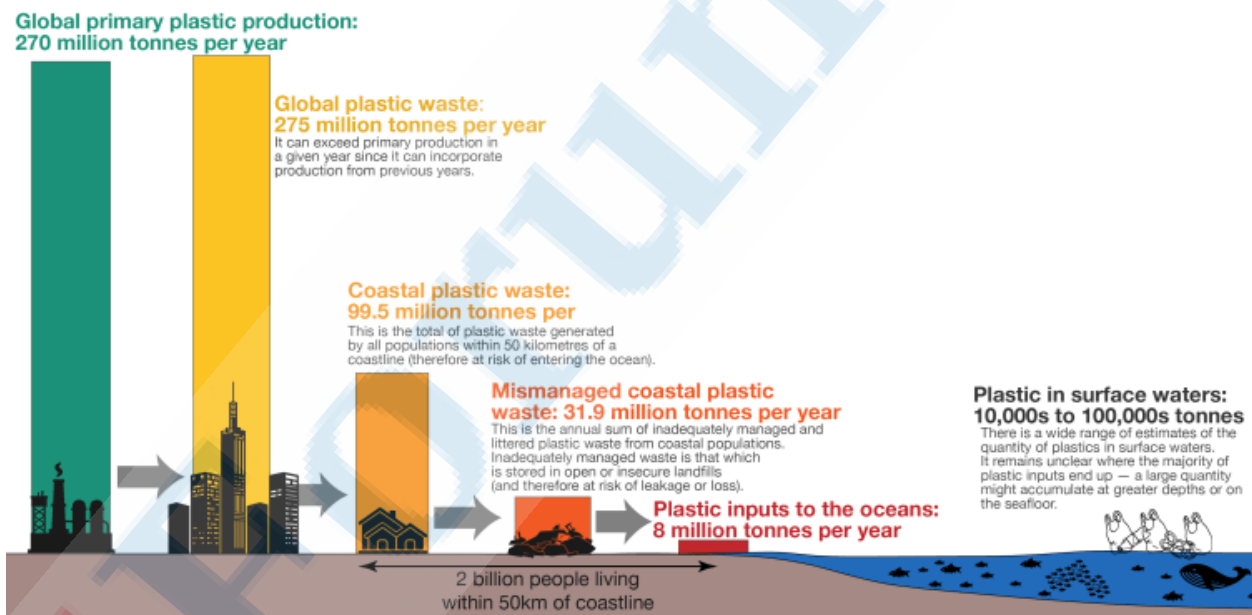


*Source: Our World in Data*

## What are the challenges in plastic waste management?

**First**, While manufacturers can use the same machine for 50- and 75-micron bags, the machinery will need to be upgraded for 120 microns. This will **enhance the cost of production** and put a greater burden on consumers. Similarly many sellers fear that the **alternatives will cost more** than single-use plastic. The availability of the **substitutes might not be enough to meet** the demand.

**Second**, there is **currently no dedicated international instrument** in place designed specifically to prevent plastic pollution throughout the entire plastics lifecycle.

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**Third**, the success would rely largely on how effectively these norms are governed by the Central and State Pollution Control Boards. Their **past records in plastic waste management are quite uninspiring**. This is testified by frequent violation of plastic rules in major cities like Delhi, Bengaluru etc.

**Fourth**, the **prevalence of corruption** impedes the effective implementation of ban and fails to create a substantial deterrence on violators. India's rank has slipped six places to 86th among 180 countries in Corruption Perception Index (CPI) 2020.

**Fifth**, **informalized Structure of Rag Pickers** inhibits a strong linkage between waste collectors and processing plants.

## What lies ahead?

**First**, an **international instrument** to manage plastic pollution can be formulated by parties of the UN Environment Assembly. Earlier this year, 124 parties of UNEA including India, signed a resolution to draw up an agreement. The agreement will make it legally binding for the signatories to address the full life of plastics from production to disposal, to end plastic pollution.

**Second**, the Government should support the **creation of sustainable bioplastics**. These plastics can be decomposed by the action of living organisms, usually microbes, into the water, carbon dioxide, and biomass. Recently, the BIS passed standards for biodegradable plastic.

**Third**, the masses should be sensitized over adverse impacts of plastic use by collaborating with organizations like **Hasiru Dala**. It is an organization that seeks to enhance the lives of waste-pickers and improve waste collection in Bengaluru.

**Fourth**, the Government should **take proactive steps** to ensure that plastic ban becomes a success. The recent launch of a public grievance app to track complaints of single plastic use is a laudable step in this regard.

**Fifth**, an **independent environment regulator** as envisaged by the Supreme Court should be created to oversee prudent implementation of the new rules.

## Conclusion

The ban on single-use plastic is just a small step towards attainment of sustainable development. The current scenario warrants that all the countries develop a higher degree of environmental consciousness and realize there **is no 'Planet B' in this whole universe**.

Source: **Indian Express**, **The Times of India**, **Outlook**


## [Kurukshetra June Summary] Rural Tourism: India an Incredible Tourism Destination – Explained, pointwise

## Introduction

India showcases rich heritage and natural abundance of many incredible places that are worthy enough to represent the nation globally. The Tourism sector has been instrumental in providing mass employment opportunities and substantially increasing income levels of both the formal and informal sectors of the economy. Realizing this, the government has undertaken various steps to promote the tourism sector. However, it has failed to unleash the true potential of its rural tourism. The Government must promote rural tourism as the majority of India resides in villages and has numerous things to offer to the tourists.

## What is Rural Tourism?

It is any form of tourism that showcases the rural life, art, culture, and heritage at rural locations, thereby benefiting the local community economically and socially. Numerous local traditions like plays, art forms, dances etc. enhance the cultural wealth of rural areas, making these attractive

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for the tourists. Lush green forests in south Indian villages, sacred groves etc. make them an ideal site to promote tourism.

## How is India an incredible tourism destination?

India is one of the world's oldest civilisations which offers a kaleidoscope of cultural experiences. The country has a rich heritage and numerous attractions.

**Adventure Tourism**: This involves exploration of remote areas and exotic locales and engaging in various activities. For adventure tourism in India, tourists prefer to go trekking to places like Ladakh, Sikkim, and the Himalayas.

**Beach Tourism:** India's vast coastline and islands provides ample opportunities for fun packed tourism. Kerala, Goa, Andaman & Nicobar Islands, Lakshadweep islands attract tourists in large numbers all around the year.

**Cultural tourism:** India is known for its rich cultural heritage and an element of mysticism, which is why tourists come to India to experience it for themselves. The various fairs and festivals that attract a large number of tourists are the *Pushkar* fair (Rajasthan), *Taj Mahotsav* (Uttar Pradesh), and *Suraj Kund* mela (Haryana).

**Eco tourism**: Ecotourism entails the sustainable preservation of a naturally endowed area or region. This is becoming more and more significant for the ecological development of all regions that have tourist value. A large number of National Parks and Biosphere Reserves offer vast opportunities in ecotourism like the Kaziranga National Park (Assam), Gir National Park (Gujarat), and Kanha National Park (Madhya Pradesh) etc.

**Medical tourism**: Tourists from all over the world have been thronging India to avail themselves of cost-effective but superior quality healthcare in terms of surgical procedures and general medical attention. The city of Chennai (Tamil Nadu) attracts around 45% of medical tourists from foreign countries.

## What is the current status of the Tourism Industry?

The travel and tourism Industry is one of the fastest-growing industries globally, with a growth rate of 3.5% vis-a-vis a global economic growth rate of 2.5% in 2019. The sector contributed around 10.4% to global GDP, generated 330 million employees worldwide, and accounted for 27.4% of global services exports.

However, COVID-19 had a detrimental impact on the travel industry worldwide, with the sector's contribution to global GDP and employment declining by 49% and 19%, respectively.

The tourism sector in India contributes immensely to foreign exchange reserves in the country and provides employment opportunities, both in the formal and informal sectors. In 2019, the sector accounted for 8.8% of the total employment, 5,8% of the total exports, and 5.9% of GDP. However, Indian Tourism Sector also suffered due to COVID-19. The sector now contributes only 4.7% to GDP, 7.3% to total employment, and 2.5% to total exports.

## What steps have been taken to promote Tourism in India?

*Swadesh Darshan* Scheme: It was launched by the Ministry of Tourism in 2014-15. It aims to develop theme-based tourist circuits on the principles of high tourist value, competitiveness and sustainability in an integrated manner. Under the scheme, 15 themes have been identified.These themes include Buddhist Circuit, Coastal Circuit, Desert Circuit, Rural Circuit, Heritage Circuit etc..

**PRASHAD Scheme**: The National Mission on Pilgrimage Rejuvenation and Spiritual Heritage Augmentation Drive (PRASHAD) was launched by the Ministry of Tourism in the year 2014-15. It is a Central Sector Scheme launched with the objective of integrated development of identified pilgrimage and heritage destinations.

**Adopt a Heritage Scheme**: It is an initiative of the Ministry of Tourism in collaboration with the Ministry of Culture and the Archaeological Survey of India. It was launched in September 2017

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on World Tourism Day. It aims to ensure quality & inclusive provision of amenities and facilities across heritage, natural, & tourist sites through active participation of private and public sector organizations. These organizations would be known as 'Monument *Mitras*' for their collaboration initiative.

## What is the need to focus on Rural Tourism?

**Huge Potential:** There is a huge potential to capture domestic and international tourists. Despite having a diverse culture and rich architectural heritage, India holds only a 1.2% share of the international tourism market (2019). While Spain has 5.7%, the USA – 5.4 %, China – 4.5% and the UK – 2.7%. Similarly, there has been a growing trend of short-break holidays in cities and proximity of rural areas allows them to act as great tourism destinations.

**Creation of Employment Opportunities**: The tourism industry generates both direct and indirect employment. When developed to its fullest potential, it could provide jobs to many young men and women who otherwise are increasingly migrating to cities. Rural tourism has the potential to generate large-scale productive employment that is multifaceted in nature, ranging from highly skilled to semi-skilled.

**Development of rural regions:** It will boost the overall rural economy as rural tourism will augment both consumption as well as investment potential of the rural regions.

**Curbing Over-tourism**: Over-tourism means a very high number of people visiting a few tourist destinations, which suffer from the excessive presence of tourism such as Shimla and Goa. Over-tourism has consequences like destruction of the natural ecosystem, increase in the amount of waste, inflation, migration of residents and so on.

**Raising India's Soft power**: If the concept of rural tourism is well marketed, then people from developed countries would be drawn towards India. Especially millennials who are fascinated about traditions, culture and art.

**Revival of arts**: Rural tourism can revive many of the arts and crafts traditionally being practiced in the rural communities but dying a slow death.

## What steps have been taken to promote Rural Tourism?

The Ministry of Tourism has designated **rural tourism as one of the Niche Tourism** sectors for growth in the country. The Ministry has developed a **Draft National Strategy and Roadmap for Rural Tourism**, which focuses on developing and promoting local products through tourism. It focuses on the following key pillars: **(a)** Model policies and best practices for rural tourism; **(b)** Digital technologies and platforms for rural tourism; **(c)** Developing clusters for rural tourism; **(d)** Marketing support for rural tourism; **(e)** Capacity building of stakeholders; **(f)** Governance and institutional framework.

The Ministry of Tourism has designated **the Rural Circuit** as one of the fifteen thematic circuits for development under the *Swadesh Darshan* Scheme.

## What more steps can be taken going ahead?

**First**, the Government must adopt **innovative approaches** to boost and promote different tourism segments such as niche tourism, wellness tourism, adventure tourism, and spiritual tourism. Given that India has been recognised as a destination for spiritual tourism for ages for both domestic and international tourists, the Government must unleash the potential of spiritual tourism.

**Second**, Villages **must learn from successful models of rural tourism** so as to achieve maximum output with minimum inputs. For instance, strategies of Pochampally Village in Telangana State can be adopted. It was selected as one of the best Tourism Villages by the United Nations World Tourism Organization (UNWTO) in 2021.

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**Read More**: Pochampally village in Telangana selected as one of the best Tourism Villages by United Nations World Tourism Organisation

**Third**, the Government needs to focus on handholding the States on a few significant parameters in rural India for tourism development: **(a) Infrastructure development:** Modern buses and stations at reliable frequency, taxi/ shared mobility, App-based integration of guides, parking/charging/refueling etc.; **(b)** Identifying and linking heritage spots in the given destinations; **(c)** Facilities like signage in English and other foreign languages; **(d) Tax issues**: One India, one tax system for tourist vehicles in order to protect the tourists from facing multiple taxations; **(e)** Promotion of homestays and high ended branded hotel rooms in resorts to fulfil the interest of staycations and workstations.

## Conclusion

Tourism in rural regions can only be maintained if an inclusive planning strategy based on a multi-action, multi-stakeholder participatory approach is adopted and implemented. This will help in unleashing the true potential of rural regions and ensure adherence to the concept of **Atithi Devo Bhava – Guest is our God**.

Source: Kurukshetra June 2022, **Ministry of Tourism**

**Space Economy in India – Explained, pointwise**

## Introduction

Space exploration commenced with the launch of Sputnik 1, the first artificial satellite, in 1957. The cold war era was characterized by the intense race between the erstwhile USSR and the US, to dominate the space. This space race was led by the Government owned agencies of the US and USSR. The global space economy has undergone considerable changes since then, with the entry of the private sector in space economy as the most prominent development. In the modern day, for the first time in 2020, humans accessed space in a vehicle not built by a government agency.
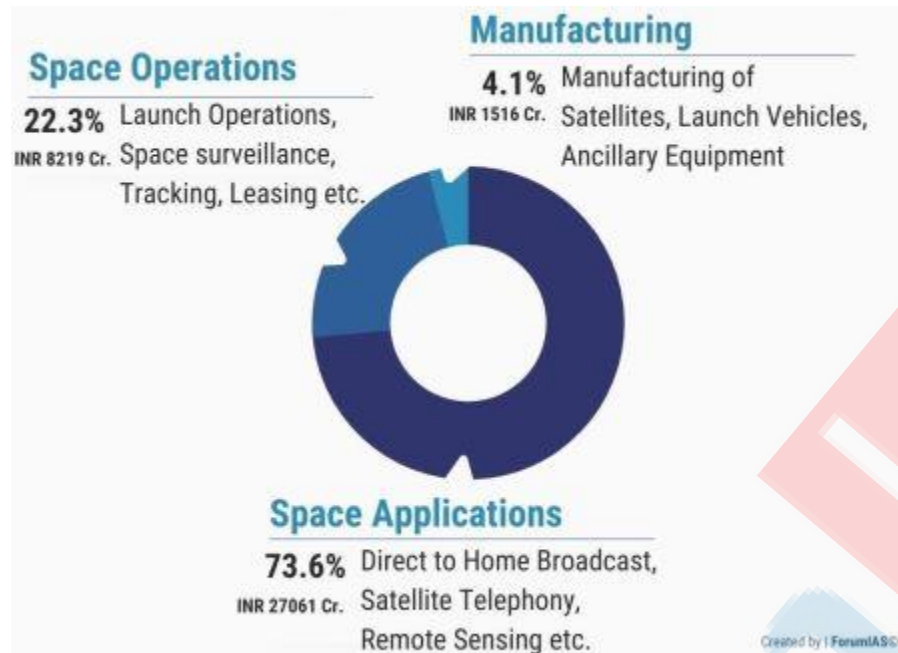
## What is the current status of the Space Economy?

The $447 billion global space market includes: **(a) Upstream market** (commercial satellite market, launch market, and institutional market); **(b) Midstream market** (operator revenue, ground infrastructure, and operations); **(c) Downstream market** (space services and consumer equipment).

Another basis of classification divides space economy into 3 components: **(a) Manufacturing of Space-related Equipment** (satellites, launch vehicles and ancillary equipment); **(b) Space operations** (launch operations, space surveillance, tracking, lease, brokerage, etc); **(c) Space Applications** (Direct to Home broadcast, satellite telephony, remote sensing, etc).

Researchers from the Centre for Development Studies (CDS) and the Indian Institute of Space Science and Technology (IIST) undertook a first-of-its kind attempt at measuring the size of India's space economy. The findings were outlined in a paper titled '**The Space Economy of India: Its Size and Structure**'

They arrived at a figure of INR 36,794 crore (approximately US$ 5 billion) for the 2020-21 fiscal. Further, the estimated size of India's space economy, as a percentage of the GDP, has slipped from 0.26% in 2011-12 to 0.19% in 2020-21. According to the paper, **space applications** accounted for the major chunk of this evolving space economy, constituting 73.57% (INR 27,061 crore) in 2020-21. It was followed by **space operations** (INR 8,218.82 crore or 22.31%) and **manufacturing** (INR 1515.59 crore or 4.12%).

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**Space Operations**
**22.3%** Launch Operations,
**INR 8219 Cr.** Space surveillance,
Tracking, Leasing etc.

**Manufacturing**
**4.1%** Manufacturing of
**INR 1516 Cr.** Satellites, Launch Vehicles,
Ancillary Equipment

**Space Applications**
**73.6%** Direct to Home Broadcast,
**INR 27061 Cr.** Satellite Telephony,
Remote Sensing etc.

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In terms of GDP, India's spending is more than that of China, Germany, Italy and Japan, but less than the U.S. and Russia. The Global Space Economy is poised to reach US$ 650 billion by 2030. India has the potential to capture a large share of this expanding sector.



Evolution of the space economy 2016-2030

In billion USD
700

642
515
370
285
350

2016        2021        2026        2030
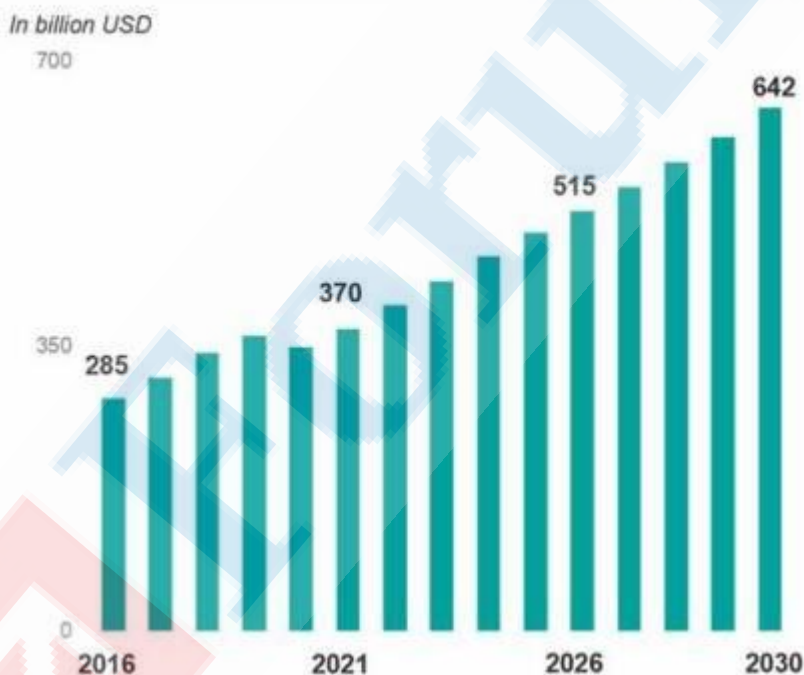
*Source: Euroconsult*

**What is the need to focus on the Space Economy?**

**Huge untapped potential**: India manages to occupy only 2%, or US$ 7 billion, of the global space economy. The small share isn't solely due to technology and resources but also because of policy.

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> **Read More**: [Yojana January Summary] India as a Space Power – Explained, pointwise

**Boosting the Economy**: Allowing private entities into end-to-end space activity would help in achieving a US$ 5 trillion economy by 2024. Further, the space economy market is said to grow over US$ 1 trillion by 2040.

**Low Cost**: The Indian space sector has the potential of launching space vehicles at a much lower cost. This was seen in the Mars Orbiter Mission which was 10 times cheaper than western missions. This will help in getting many foreign contracts.

**Rising Demand**: It is estimated that around 10,000 satellites will be launched into low-earth orbit by 2026. Further, the projected growth of small and miniature satellites has increased three times, growing from US$ 12.6 billion to US$ 42.8 billion. This provides ample opportunities for small and medium enterprises to enter into the sector.

**Presence of Budding Entrepreneurs**: According to a global report published in June 2021, India has 368 private space firms, placing it 5th in the world in size after the US, the United Kingdom, Canada, and Germany. With these many firms, India is leading China (288), France (269), and Spain (206) in the private space industry.

> **Read More**: A launch window for India as a space start-up hub

**What steps have been taken by the Government to boost the Space Economy?**

**Indian Space Association (ISpA)**: It aspires to be the collective voice of the Indian Space industry. ISpA will be represented by leading domestic and global corporations that have advanced capabilities in space and satellite technologies.

> **Read More**: Indian Space Association (ISpA) – Explained, pointwise

**Indian National Space Promotion and Authorisation Centre (IN-SPACe)**: It aims to provide a level-playing field for private companies to use the Indian space architecture. IN-SPACe will act as a channel between ISRO and any private players that want to participate in space activity, thereby culling lengthy bureaucratic procedures. It will benefit in two ways: **(a)** It will allow more research and scholarly work by individuals who have the capability. For example encouraging something similar to SpaceX in India; **(b)** It will allow ISRO to focus on more challenging missions and especially next-generation technology development.

**Opening the Space Sector**: The Government in June 2020 opened up the Space sector allowing the participation of the Indian private sector in the entire domain of space activities. This includes satellite creation, launches, and space-based services that were earlier not open to them.

*Antrix* **Corporation:** It is a government-owned company under the administrative control of the Department of Space. It was established in 1992 for commercially utilizing space products of ISRO, providing technical consultancy services and transferring technologies to industry.

**Draft Space Activities Bill, 2017**: The Bill aims to promote and regulate the space activities of India. It focuses on encouraging the participation of private sector agencies under the guidance and authorisation of the government through the Department of Space.

**New Space India Limited (NSIL)**: It is a Central Public Sector Enterprise under the Department of Space that was established in 2019. It has been mandated to transfer the technologies emanating out of the Indian space programme and enable Indian industry to scale up high-technology manufacturing base.

**What are the challenges in the development of the Space Economy?**

**Budgetary Constraints**: The CDS and IIST study noticed a decline in the budget for space-related activities. This led to a reduction in the size of the space economy in the last two years. The budget outlay in 2020-21 was INR 9,500 crore, shrinking from INR 13,033.2 crore in the previous fiscal.

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**Lack of Data**: The current CDS and IIST paper was a first-time attempt at scientifically measuring the size of the space economy. Further even this was unable to establish the size of the space-based remote sensing industry.

**Space Debris**: Since the market is open, more corporations can send their vehicles and satellites up into space, which is already crowded. By some estimates, there are over 15,000 traceable and over 200,000 1-10 cm pieces.

**Absence of a Legislative Framework**: The draft Space Activities bill was introduced in 2017 but has been pending since then.

**Brain Drain:** India produces the best brains of the world but is unable to retain them. People emigrate from the country for better opportunities and careers that might hamper development of the space sector.

**Lack of robust Dispute Settlement Mechanism:** This discourages private investment in the space sector e.g., the cancellation of Antrix-Devas deal has impacted investor confidence and hurt India's reputation as investment destination internationally.

## What more steps can be taken?

**First**, the **policies of opening the space sector** to private players should be duly implemented. They are likely to enlarge the size of the sector through enhanced private investment and improved integration with the global private space industry. The government should also enhance collaboration between Indian private players and big private players from across the globe like **SpaceX, Virgin Galactic** etc.

**Second**, the **FDI reform is crucial to further decentralize investments**. The US firm Hughes Communications announced a US$ 500 million investment but has not been able to get approvals since 2017. Therefore, IN-SPACe needs to act on its mandate and allow not only foreign entities but also domestic innovators to get around the bureaucracy.

**Third**, in case of **space debris**, coordination between the public and private sector will come into play. The government can decide on exactly how many programmes can be allowed in space and if they can partner in the removal of space debris.

**Fourth**, The **passage of the Space Activities Bill** should also be done in order to give private players greater clarity and protection. This should involve proper consultation and discussions with the concerned stakeholders.

## Conclusion

The current scenario presents an ideal opportunity for India to unleash the potential of space economy. In this regard, right policy initiatives and support are desired to make the space economy reach its target of US$ 50 billion by 2024.

Source: **[The Times of India](#)**, **[The Hindu](#)**, **[Mint](#)**

### Geoengineering Technologies: Applications and Concerns – Explained, pointwise

## Introduction

Climate Change is no longer a myth and the adverse impacts of the phenomena are increasingly becoming evident. Anthropogenic interventions have significantly enhanced the magnitude and extent of climate change. With record-breaking heat waves hitting many parts of the world over the last few months, scientific circles have been hotly debating whether countries should prepare to deploy geoengineering technologies to deal with such climate emergencies.

**Read More**: [Heat Waves: Rising Frequency and Intensity – Explained, pointwise](#)

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**What is Geoengineering?**

Geoengineering is an umbrella term for various experimental technologies. It refers to deliberate, large-scale intervention carried out in the Earth's natural systems to reverse the impacts of climate change. They are slowly but steadily gaining salience and broadly fall under two categories: **Solar Radiation Modification** (SRM)/**Radiative Forcing Geoengineering** (RFG) and **Carbon Dioxide Removal** (CDR) technologies.
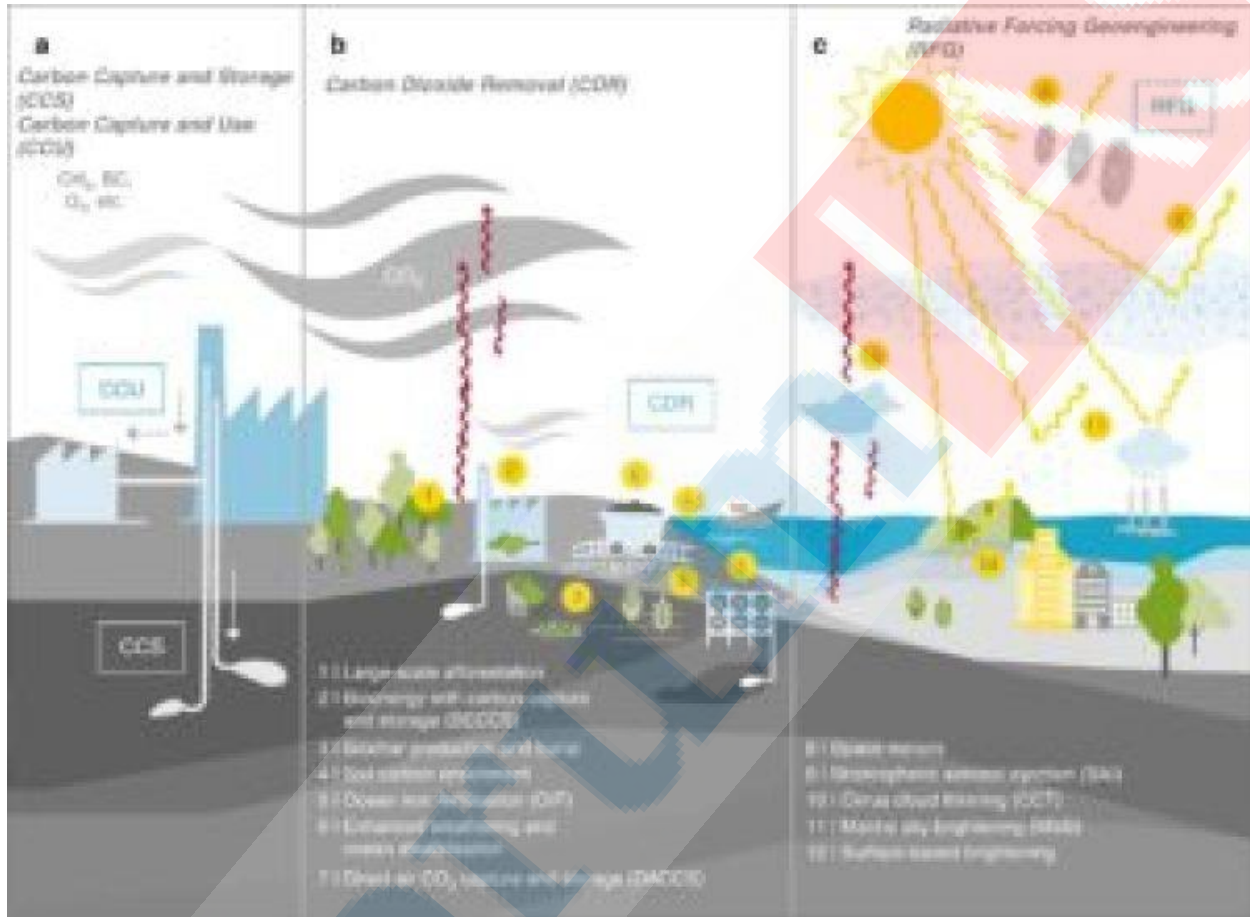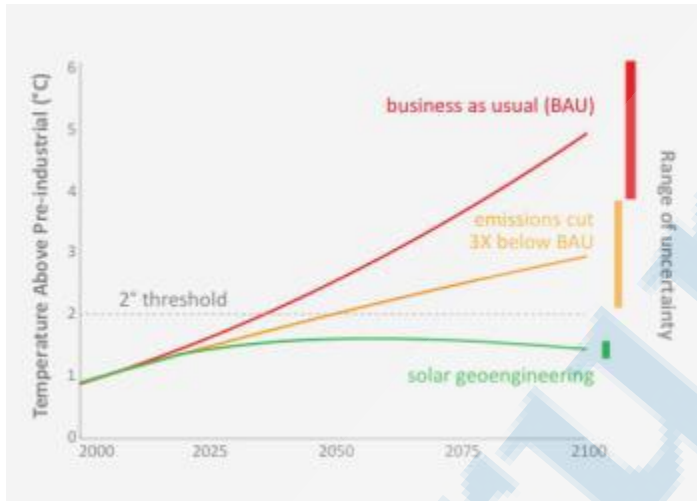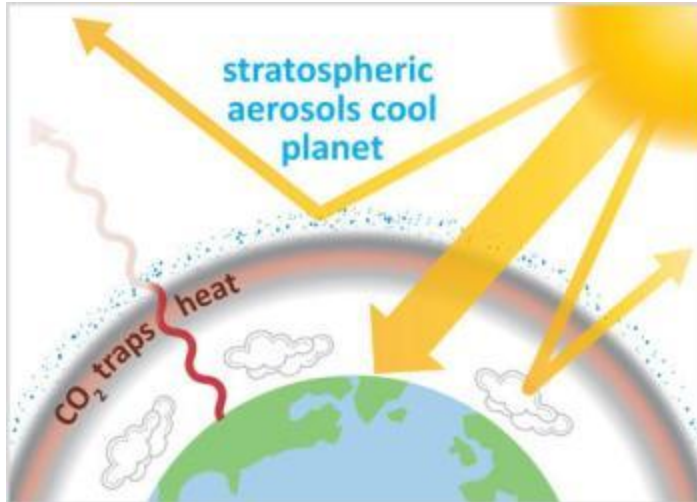


*Source: Nature*

**What is Solar Radiation Management/Modification (SRM) or Solar Geoengineering?**

SRM techniques aim to reflect a small proportion of the Sun's energy back into space. This counters the temperature rise caused by increased levels of greenhouse gasses in the atmosphere which absorb energy and raise temperatures. Some proposed techniques include:

**Albedo enhancement**: Increasing the reflectiveness of clouds or the land surface so that more of the Sun's heat is reflected back into space.

**Space reflectors**: Blocking a small proportion of sunlight before it reaches the Earth.

**Stratospheric Aerosol Injection (SAI)**: Introducing small, reflective particles into the upper atmosphere to reflect some sunlight before it reaches the surface of the Earth.

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*Souce: harvard.edu*

**Cirrus Cloud Thinning**: It focuses on eliminating or thinning cirrus clouds to allow heat to escape into space. These clouds are found at high altitudes, and often absorb more sunlight than they reflect.

## What is Greenhouse Gas Removal (GGR) or Carbon Geoengineering?

GGR techniques aim to remove carbon dioxide or other greenhouse gases from the atmosphere. It directly counters the increased greenhouse effect and ocean acidification. Some proposed techniques include:

**Afforestation**: Engaging in a global-scale tree planting effort.

**Biochar**: 'Charring' biomass and burying it so that its carbon is locked up in the soil.

**Bio-energy with carbon capture and sequestration**: Growing biomass, burning it to create energy and capturing and sequestering the carbon dioxide created in the process.

**Ambient Air Capture**: Building large machines that can remove carbon dioxide directly from ambient air and store it elsewhere.

**Ocean Fertilization**: Adding nutrients to the ocean in selected locations to increase primary production which draws down carbon dioxide from the atmosphere.

**Enhanced Weathering**: Exposing large quantities of minerals that will react with carbon dioxide in the atmosphere and storing the resulting compound in the ocean or soil.

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**Ocean Alkalinity Enhancement:** Grinding up, dispersing, and dissolving rocks such as limestone, silicates, or calcium hydroxide in the ocean. This will increase the ocean's ability to store carbon and directly ameliorate ocean acidification.
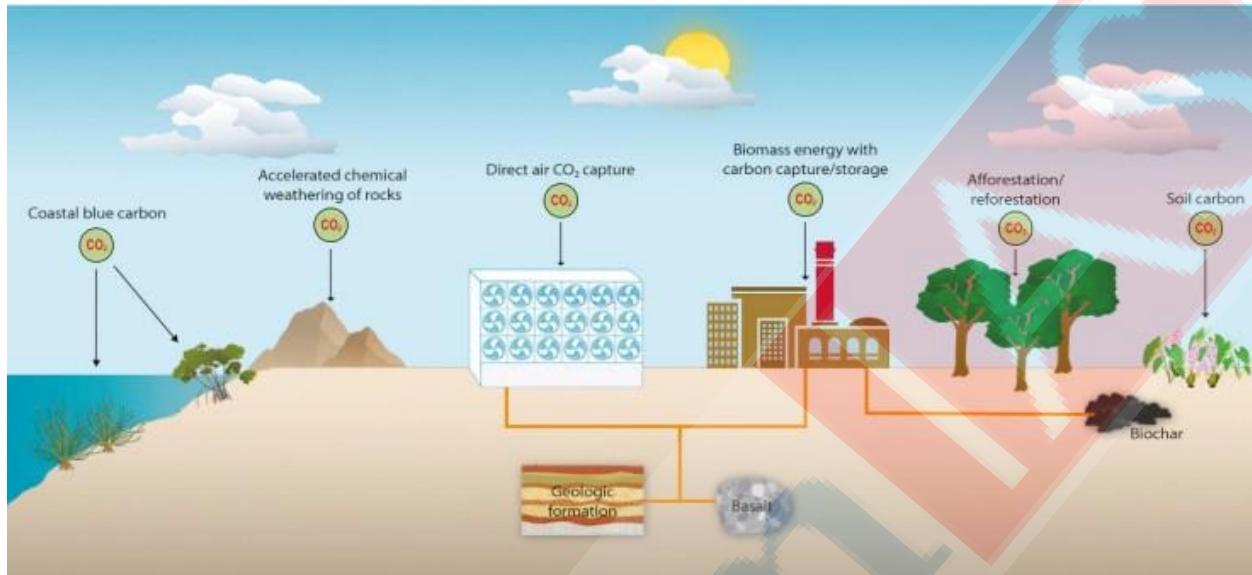


*Source: Center for Climate Engagement, University of Cambridge*

## What is the need to focus on geoengineering?

**First**, several modeling studies indicate that geoengineering might **reduce some of the worst effects of climate change**, such as lowering the warming and reducing the frequency of heatwaves and high-intensity storms.

**Second**, techniques like the stratospheric aerosol injection (SAI) are so **affordable** that a few dozen countries can easily deploy this technology unilaterally.

**Third**, it is becoming increasingly evident that the present trajectory of emissions cut may not be able to prevent the catastrophic impacts of climate change. Geoengineering technologies may be able to provide a quick solution, thus providing more time to shift away from fossil fuels.

## What are the risks associated with geoengineering?

**First**, many experts fear that it may **impair the self regulation capacity** of natural ecosystems thereby doing more harm in the long run.

**Second**, they may **distract attention from the need for deep cuts** to gross emissions which is achievable with the right political will and resource mobilization. Such measures thus pose pivotal problems of intergenerational justice

**Third**, the impacts will **not be limited to national borders**. For instance, unilateral use of SAI could lead to significant adverse effects in other countries, leading to conflicts. Similarly if governments ever gain control of changing the course of potentially damaging storms, diversions that direct storms toward other countries **may be seen as acts of war**.

**Fourth**, the **unintended consequences** could include an adverse impact on rainfall, crop production and ocean acidification. Large-scale spraying of aerosols into the atmosphere could also deplete the ozone layer, enlarging the ozone hole. Another big risk is that when the aerosol injection is terminated abruptly this will cause rapid warming, disrupting the water cycle and leading to **massive biodiversity loss**. The impacts of such a "termination shock" would be much worse than the effects of climate change such measures aim to avoid.

**Fifth**, there is also an **ethical argument** that 'do we have the right to manage and manipulate nature?'

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The IPCC's 5th Assessment Report observed that, "*SRM techniques entail numerous uncertainties, side effects, risks and shortcomings*" and "*raise questions about costs, risks, governance and ethical implications of development and deployment*".

## What are some of the geoengineering initiatives taken across the globe?

China has been implementing one of the world's largest weather-modification programmes to artificially enhance rain. It plans to expand capacity to cover nearly 60% of the country by 2025. The University of Cambridge created the Centre for Climate Repair last year to develop new methods for SRM and cloud brightening.

The Australian government has been testing marine cloud brightening to cool water temperatures near the Great Barrier Reef.

In India, cloud seeding has been tried in states such as Tamil Nadu, Karnataka and Maharashtra during droughts.

Enhanced Oil Recovery (EOR) and Carbon Capture in India is primarily being deployed for additional oil recovery from aged fields and fields with heavy oil such as in the Cambay and Barmer fields.

## What can be the approach going ahead?

**First**, countries can **focus on technologies that have surpassed the ideation stage** and reached the experimentation stage like Stratospheric aerosols injection (SAI). SAI aims to mimic large volcanic eruptions that have a cooling effect on the globe. For instance, the eruption of Mount Pinatubo in the Philippines in 1991 caused global cooling of 0. 6°C for the following two years. However, cautious approach is advisable. There should be numerous short-scale experiments before scaling up the process for a widespread application.

**Second**, a lot **more research** is required to understand the impacts of geoengineering on the broader regional ecosystem. Further, there is a need for international cooperation among educational and research institutes.

**Third**, India needs to play a **major role in framing global governance** around the use of geoengineering technologies. These technologies have global ramifications and must be governed by an international rules-based system.

**Fourth**, geoengineering **cannot be treated as a license to continue emitting more GHGs** with no changes to current consumption and production patterns. Specific technologies that can help us achieve negative emissions need to be publicly funded (most obviously through the diversion of fossil fuel subsidies).

## Conclusion

While geoengineering is highly risky, some experts argue that countries will deploy it if they fear large-scale casualties or economic disruptions due to extreme climatic events. In fact, considering the current trajectory of Earth's warming, countries will have to make these choices within a decade or two. So Governments should start discussions on establishing global governance mechanism to deter the unilateral deployment of these technologies, while supporting further research on the evolving technologies. However, geoengineering can only act as a supplement to scaling back of GHG emissions in all sectors, not a substitute.

Source: **The Times of India**, **Down to Earth**, **MIT**

Issues in the IBC Resolution Process and Possible Solutions – Explained, pointwise

## Introduction

India's Insolvency and Bankruptcy Code (IBC), 2016, was designed to focus on addressing stress in chronically sick companies through either resolution or liquidation. The code's need was felt by mounting non-performing assets (NPAs) in the banking sector that the prevalent system could

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not adequately fix. The IBC law and practice in India over the past 5 years has matured to focus on entire value chains in addressing enterprise sickness and on the resolution of disputes through means other than litigation. However, it still is surrounded with many challenges like delays, big haircuts etc. which makes it imperative to take some corrective steps.

## Key Terminology

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

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### What is the Insolvency and Bankruptcy Code (IBC)?

The IBC was enacted in 2016 and replaced all the existing laws with a uniform procedure to resolve insolvency and bankruptcy disputes. It allows creditors to assess the viability of a debtor as a business decision, and agree upon a plan for its revival or a speedy liquidation.

The Code created **a new institutional framework** to facilitate a formal and time bound insolvency resolution process and liquidation. The framework includes

**Insolvency Professionals**: They **administer** the resolution process, manage the assets of the debtor, and provide information for creditors to assist them in decision making.

**Insolvency Professional Agencies**:The insolvency professionals are registered with insolvency professional agencies. The agencies conduct examinations to certify the insolvency professionals and enforce a code of conduct for their performance.

**Information utilities**: They keep a record of debts given by creditors along with details of repayments/ dishonour of debt.

**Adjudicating authorities**: They give approval to initiate the resolution process, appoint the insolvency professional, and approve the final decision of creditors. Adjudicating authority for companies is National Company Law Tribunal (NCLT) while individuals have to approach debt recovery tribunal.

**Insolvency and Bankruptcy Board:** The Board **regulates** insolvency professionals, insolvency professional agencies and information utilities set up under the Code.

## Objectives of the Insolvency and Bankruptcy Code

- Consolidate and amend all existing insolvency laws in India.
- To simplify and expedite the Insolvency and Bankruptcy Proceedings in India.
- To protect the interest of creditors including stakeholders in a company.
- To revive the company in a time-bound manner.

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**How has the IBC performed till now?**

According to the Insolvency and Bankruptcy Board of India (IBBI) newsletter for January-March 2022, 64.7% of all the cases admitted for the corporate insolvency resolution process (CIRP) since 2016 have been closed.

Amongst this, 11% have been withdrawn, about 14 % settled, 30% liquidated and 9% resolved (wherein a resolution plan was approved).

Data released by the IBBI shows that the resolution rate of cases under CIRP is rather low and that the **number of cases seeing liquidation are three times more than those being resolved** e.g., of the 2,600 cases that were closed by December 2021, 55% ended in liquidation while only 16% were completed with proper resolution plans approved by the lender.
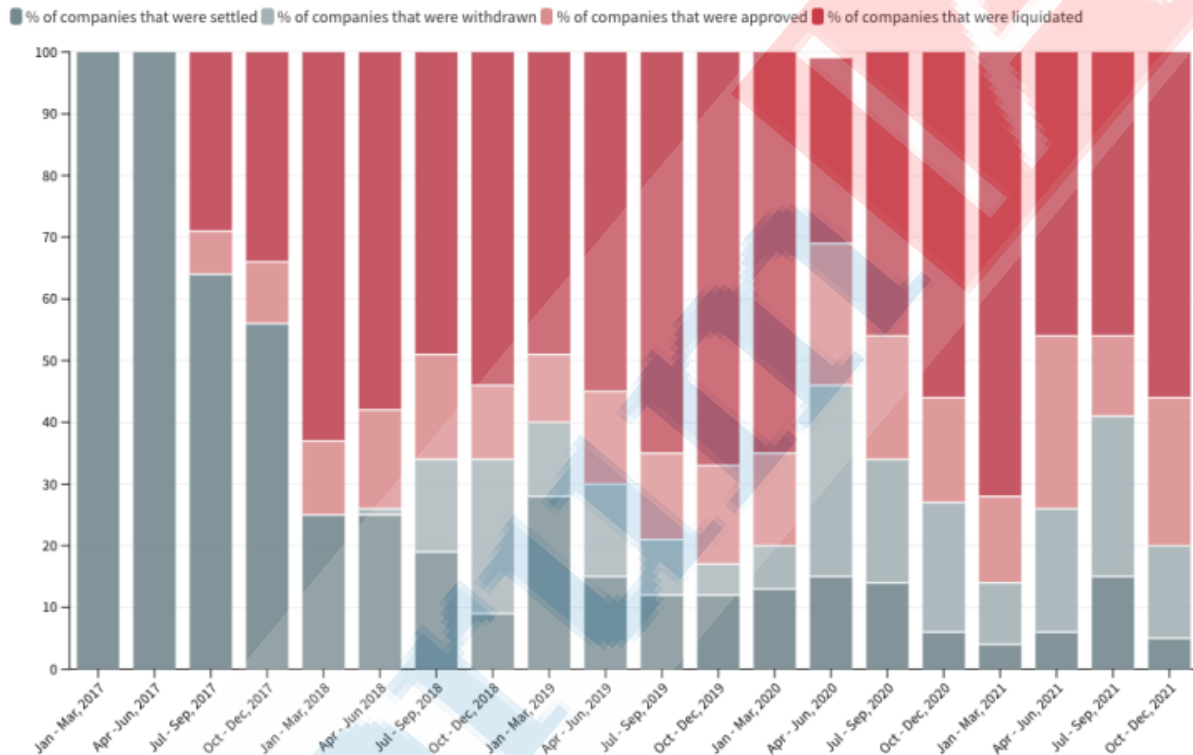


*Source: The Hindu. Cases settled are shown in dark grey. In the initial 6 months (January-June 2017) all 100% cases were settled. However, the percentage of cases settled has progressively come down. It was only 5% in Oct-Dec 2021 period. The cases of liquidation has gone up. 57% cases were liquidated in Oct-Dec 2021.*

The amounts recovered from the debtors have also been low. Since the IBC came into force, **only 32.9% of the claim amounts were recovered**. In January-March 2022, this figure stood at only 10.2% of the claim amounts.

**What have been the positive outcomes after the passage of the IBC?**

**First**, it has initiated a cultural shift in the dynamics between lender and borrower, promoter and creditor.

**Second**, Before enactment of the IBC, the recovery mechanisms available to lenders were through *Lok Adalat*, Debt Recovery Tribunal and SARFAESI Act. While the earlier mechanisms resulted in a low average recovery of 23%, the recoveries have risen to 43% under the IBC regime.

**Third**, it also helped in improving India's rank in insolvency resolution indicator of World Bank's Ease of Doing Business report. The rank improved to 108 in 2019 from 134 in 2014.

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## What are the challenges associated with the IBC?

**Delays in the process**: Resolution, and in some cases liquidation, have taken much longer than the mandated time. And the period of resolution has only worsened with time. e.g., of cases involving more than INR 1,000 Crore, the average resolution time was 274 days in FY2018. This has risen to 772 days in FY2022.



*Source: The Hindu. The above chart shows the average number of days to resolve a case. Darker the shade, more the number of days taken for resolution. As can be seen, the number of days to resolve have been progressively increasing e.g., cases involving less the INR 50 crore were resolved in 230 days (average) in FY 2018. It is 667 days in FY22. The resolution period of cases of INR 50-100 Crore has increased from 260 days (FY18) to 783 days (FY22). The trend is similar for higher amounts.*

The main reason for delay is litigation on the decisions. According to a study undertaken by Indian Institute of Insolvency Professionals, every corporate insolvency resolution process on average takes 3 litigation suits. The National Company Law Tribunal (NCLT) benches are bound to adjudicate on every application filed by any stakeholder, even if later found to be frivolous in nature.

Such an adjudication process, coupled with litigation, counter-litigation and multiple appeals, renders IBC timelines meaningless.

**Big Haircuts**: Longer delays result in larger haircuts, as the value of sick companies tends to diminish at an increasing pace over time. For instance, the lenders have had to take a haircut of 83% in the case of Alok Industries, a little less than 90% in the case of Reliance Infratel and **96% in the recent Videocon Group case**.

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

**Regulatory Fear**: Banks, especially those in the public sector, are unable to take pragmatic decisions due to regulatory fear. They feel any risk-taking that could potentially yield a low rate of dues recovery in the short term may **subject them to vigilance inquiries and audits**.

**Resource Deficit**: The Government had proposed to set up 25 additional single and division benches of NCLT in July 2019. They were established at various places including Delhi, Jaipur, Kochi, Chandigarh, and Amravati. However most of these remain non-operational or partly operational on account of lack of proper infrastructure or adequate support staff.

**Exclusion of promoters:** Promoters are excluded from bidding despite them not being wilful defaulters. Banks think that allowing promoters to bid for assets after they have defaulted creates a moral hazard. But there are many cases where default occurs for reasons beyond the control of the promoter.

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## What should be done?

**First,** there is a need to **increase the number of NCLT benches and appoint more competent professionals** who have better understanding of the financial system. This will ensure that the IBC platform is **not used as a recovery but more as a resolution tool**.

**Second**, there is a need to promote **mediation for out-of-court proceedings**, with legislative recognition for speedier dispute resolution. The success of mediation has been observed in the U.S where over half the bankruptcy courts explicitly authorizing mediation. It gained momentum in 1998 with the enactment of America's Alternative Dispute Resolution Act.

The Mediation Bill of 2021 is a step in the right direction. It requires disputants to try and settle civil or commercial disputes through mediation before approaching any court, within a mandated period.

**Third**, bankers should be protected for bona fide decision-making during the resolution process. A **similar provision like the 'business judgment' rule** that is available for board directors in many countries, should be introduced for them. It protects companies from frivolous lawsuits by assuming that, unless proved otherwise, management is acting in the interests of the corporation and its stakeholders.

**Fourth**, Promoters, who are not wilful defaulters, should be allowed to bid at NCLT. Banks might look into the promoter's track record and if the banks feel that track record does not inspire confidence, they should have the right to reject promoters.

## Conclusion

The Government should take steps to address the loopholes of the IBC in order to make the resolution process more transparent and effective. It will help recover the maximum amount possible from the defaulters. A quick resolution process will also help address the NPA crisis so the banks can issue fresh credit from the freed capital. This will have long-term positive impact on the economy.

Source: **Mint**, **Mint**, **The Hindu**, **Financial Express**

### Rare Earth Elements: Strategic Importance and Reducing Import Dependence – Explained, pointwise

## Introduction

India's growth trajectory is witnessing an inflection point. As the economy moves ahead on path of recovery, the foundations of a new economy are emerging. India has been witnessing a massive solar energy push, an Electric Vehicle (EV) ecosystem, and a speciality chemicals sector that is becoming a global hub. India is moving towards a greener, cleaner, and technologically enhanced economy. However, the transition to this economy is dependent upon a slew of strategic elements as inputs. From EV batteries to Solar Cells, from Nuclear Reactors to high-tech electronics these strategic elements are indispensable. These elements are 17 in number and together known as **Rare Earth Elements**. Controlling the supply chains of rare earth elements is an exercise in consolidating power over critical technologies. India is almost 100% import dependent for most rare earths. However, India has great potential for domestic production as it possesses the 5th highest reserves of rare earths in the world.

## What are Rare Earth Elements?

Rare earth elements (REEs) are a group of 17 chemically similar metallic elements in the periodic table. It comprises 15 lanthanides elements (lanthanum, cerium, praseodymium, neodymium, promethium, samarium, europium, gadolinium, terbium, dysprosium, holmium, erbium, thulium, ytterbium and lutetium), plus scandium and yttrium.

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The rare earths are actually not 'rare' in nature; they occur abundantly but are often not concentrated enough to undertake viable extraction.

**Characteristics**: REEs are characterized by high density, high melting point, high conductivity, and high thermal conductance. REEs are classified into Heavy REE and Light REE.

**Sources**: REEs do not occur in a free state. They are found in mineral oxide ores. The principal sources of rare earth elements are bastnaesite, xenotime (commonly found in mineral sand deposits), loparite (occurs in alkaline igneous rocks) and monazite.

## SEVENTEEN RARE EARTH ELEMENTS

| Rare earth name | Discovery year | Atomic name & number | Light/heavy REE | Critical/ Uncritical |
|---|---|---|---|---|
| Yttrium | 1788 | Y-39 | Heavy | Critical |
| Cerium | 1803 | Ce-58 | Light | Excessive |
| Lanthanum | 1839 | La-57 | Light | Uncritical |
| Erbium | 1842 | Er-68 | Heavy | Critical |
| Terbium | 1843 | Tb-65 | Heavy | Critical |
| Ytterbium | 1878 | Yb-70 | Heavy | Excessive |
| Holmium | 1878 | Ho-67 | Heavy | Excessive |
| Scandium | 1879 | Sc-21 | Heavy | Critical |
| Samarium | 1879 | Sm-62 | Light | Uncritical |
| Thulium | 1879 | Tm-69 | Heavy | Excessive |
| Praseodymium | 1885 | Pr-59 | Light | Uncritical |
| Neodymium | 1885 | Nd-60 | Light | Critical |
| Dysprosium | 1886 | Dy-66 | Heavy | Critical |
| Europium | 1886 | Eu-63 | Heavy | Critical |
| Gadolinium | 1886 | Gd-64 | Heavy | Uncritical |
| Lutetium | 1907 | Lu-71 | Heavy | Excessive |
| Promethium | 1947 | Pm-61 | | |

*Source: The Print*

### What is the utility of Rare Earth Elements?

Rare earths are used in small quantities but have **qualities that make them essential**. Neodymium, for example, is a critical component for permanent magnets and has the ability to carry material 1,300 times its own weight. Neodymium-based permanent magnets are key components in **EV traction motors and wind turbines**. Like neodymium, dysprosium is also an important component of permanent magnets that will be used in EVs and wind turbines.

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Europium is necessary for **LED bulbs and colour television screens**. Samarium is used in **optical lasers.**

Several rare earths also have important uses in emerging hi-tech medical technologies. Further they make the refining of crude oil into gasoline more efficient and are used in many specialty metal alloys. Their sector-wise uses include:

**Aerospace and Defence:** Used in precision-guided munitions in missiles, high-power sonar on ships and submarines, stealth helicopters, etc.

**Health care**: used in medical imaging devices, such as MRIs, modern surgical machines.

**Clean Energy**: Used in wind turbines, electric car batteries and energy-efficient lights (LEDs and CFLs).

**Nuclear Energy**: useful for controlling nuclear reactions and is used in control rods.

**Electronics**: Used as phosphors in cathode ray tubes, fluorescent lamps and X-ray intensifying screens.

**Chemicals, Oil Refining, and manufacturing**: Make the refining of crude oil into gasoline more efficient and are used in many specialty metal alloys.

**What is the current status with respect to the reserves of Rare Earth Elements?**

National

In India, significant rare earth minerals found are ilmenite, sillimanite, garnet, zircon, monazite, and rutile, collectively called Beach Sand Minerals (BSM).

Monazite is the principal source. Monazite is mainly found in Odisha, Andhra Pradesh, Tamil Nadu, Kerala, West Bengal, and Jharkhand. According to the India Minerals Yearbook (2019), India had 12.47 million tonnes of Monazite Resources.
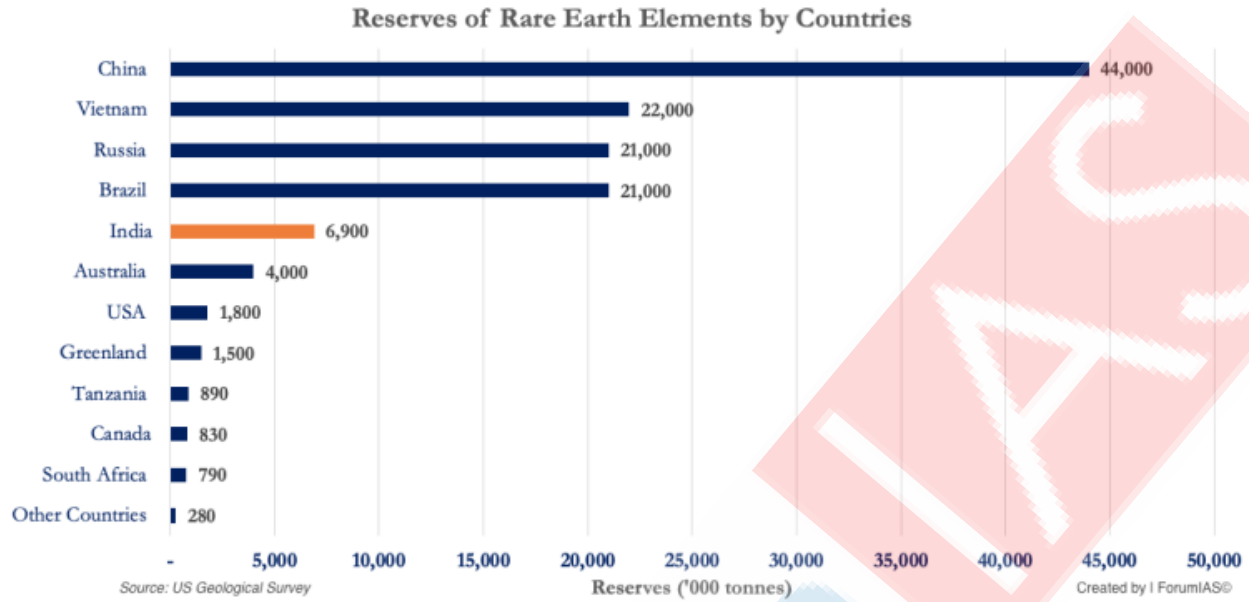
They are classified as atomic minerals and are therefore not at par with other minerals. The reason that they are classified as atomic minerals is because some of these elements occur in the earth's surface along with thorium and uranium which are radioactive minerals.

International

The total world reserves are estimated at 120 million tonnes of rare earth oxides equivalent content (REO). Out of this, China alone accounts for 44 million tonnes followed by Vietnam and Russia.

China holds the leading position among producers of rare earth oxides with 140 thousand tonnes. The other major producers are Myanmar, Australia, USA, Russia and Malaysia.

Concentrated/partially-processed intermediate products are further processed at many locations in Europe, USA, Japan and China.

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Reserves of Rare Earth Elements by Countries

| Country | Reserves ('000 tonnes) |
|---|---|
| China | 44,000 |
| Vietnam | 22,000 |
| Russia | 21,000 |
| Brazil | 21,000 |
| India | 6,900 |
| Australia | 4,000 |
| USA | 1,800 |
| Greenland | 1,500 |
| Tanzania | 890 |
| Canada | 830 |
| South Africa | 790 |
| Other Countries | 280 |

Source: US Geological Survey                        Reserves ('000 tonnes)                        Created by | ForumIAS©

## What is the strategic significance of Rare Earth Elements?

**Multiple Uses**: They are used in multiple hi-tech applications and processes like EVs, Medicinal appliances, LEDs etc. that domestic production of such elements becomes inevitable.

**Rising Demand:** The multifarious uses of rare earth elements in new age technologies shows that their demand is going to rise in future. For instance, the current demand of neodymium in India is small, at around 900 tonnes per annum, because domestic manufacturing of EVs and wind turbines is still limited. However, as manufacturing of EVs and wind turbines picks up, the demand for neodymium is estimated to rise sharply by 6-7 times by 2025 (6,000 tonnes) and by 18-20 times by 2030 (20,000 tonnes).

**Reducing Import Bill**: India is almost 100% import dependent for most rare earths which creates a huge pressure on foreign exchange. Further, prices of rare elements are consistently rising due to the rising demand. For instance, the global price of neodymium has risen sharply from under US$ 100 per kg in 2018 to over US$ 200 per kg at present.

**Highly Concentrated Supply Chain**: The global supply scenario for rare earths is highly concentrated, much more than oil and hydrocarbons, which poses a strategic challenge. Until a few years ago, China controlled 90% of the supply of rare earths. Now, after aggressive production by the US, Australia and Canada, China's share is down to 60% but still dominant. In 2010, following dispute with Japan over Senkaku Islands in the East China Sea; **China shut down exports of Rare Earth Elements to Japan**. Given India's border dispute, China might resort to similar tactics in future.

**Huge potential**: India has greater reserves than the US and Australia, only behind China, Vietnam, Russia, and Brazil. With Russia embroiled in conflict, the onus is on India to emerge as a supplier not just for domestic use but for international consumption.

## What are the reasons behind the limited production of Rare Earth Elements in India?

**First**, rare earth materials are not concentrated enough in many geographical locations with respect to **commercial viability**. It is expensive to commercially produce them.

**Second**, at present they are classified as atomic minerals. The **mining for rare earths is reserved exclusively for government companies**. Currently, there are only two companies – Indian Rare Earths Ltd (IREL, owned by GoI) and Kerala Minerals and Metals Ltd (owned by Kerala government) that can mine them. Further, their production capacities and technological capabilities are limited which is why India is import dependent.

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**Third**, **IREL's primary source of revenues is not rare earths**. Most of its income comes from the production and marketing of other minerals contained in beach sands. Since its revenue does not depend upon rare earth elements, **IREL has little need to produce and research**. IREL has poor incentives to refocus itself as a globally competitive rare earth extraction and processing firm. This has restricted India to be a low-cost exporter of rare earth oxides instead of higher value-added products.

**Fourth**, the present system (clubbing rare earth elements with atomic minerals) ends up **separating the rare earths ecosystem from other R&D ecosystems** like electronics or metallurgy. This severely impacts the overall umbrella of strategic research, undercutting the interdisciplinary nature of modern research work. R&D is dominated by DAE and the Bhabha Atomic Research Centre (BARC), with negligible participation by the Academia and private sector. The situation is similarly disintegrated with regards to exploration. The Geological Survey of India (GSI), Mineral Exploration Corporation Limited (MECL) and Atomic Minerals Directorate for Exploration and Research (AMD) operate in overlapping spheres while working in siloes.

**Fifth**, **Beach sand mining** was permitted until a few years ago but was **banned in 2016** in an attempt to conserve strategic minerals including rare earths and thorium.

## What steps can be taken to boost domestic production?

**First**, the **Ministry of Mines has recently proposed moving the 17 rare earths** elements outside the ambit of atomic minerals so that commercial mining by private entities and other PSUs can take place. Further, Private players can be mandated not to extract thorium and uranium from monazite rock or beach sands and restrict themselves to rare earths.

**Second**, Based on availability and criticality of rare earths, the **Ministry of Mining has conducted an analysis for prioritising efforts in both exploration and foreign acquisition**. India has an established relative abundance of Light Rare Earths: elements from Lanthanum to Samarium. The initial focus can be on extraction of these elements. Efforts are already on to discover Lithium deposits as well. A joint venture of 3 PSUs, named Khanij India Bidesh Limited (KABIL), has been entering into long-term contracts for India's critical mineral needs.

**Third**, the government **can create a new Department for Rare Earths (DRE)** under the Ministry of Mines. This DRE should oversee policy formulation and focus on attracting investment and promoting R&D. It could coordinate with other agencies to **partner directly with groupings such as the Quad**. This will help in building up a strategic reserve as a buffer against global supply crises.

**Fourth**, the government should also create an autonomous regulator, **the Rare Earths Regulatory Authority of India (RRAI)**. It would resolve disputes between companies in this space and check compliance.

**Fifth**, IREL can be de-merged into two different entities with appropriate amendments to the Atomic Energy Act. One entity can focus exclusively on Thorium extraction and can be retained under the Department of Atomic Energy. The other entity can specialise in other available rare earth processing and can be under the control of the proposed DRE.

**Sixth**, a **consolidation in the exploration of rare earths is necessary**. The National Mineral Exploration Policy, 2016 had a proposal to set up the **National Centre for Mineral Targeting** (NCMT) to replace the present system of having committees within the Geological Programming Board of the Geological Survey of India. NCMT has not been created yet.

**Seventh**, **Private industry must be incentivised** and enabled to set up processing capabilities beyond the extraction phase. Such a move will be crucial for higher value added products having robust domestic supply chains. Private Industry linkage is necessary to promote R&D Ecosystem as well.

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**Eighth**, the Government should have **Rare Earth Strategic Reserves**, similar to the Strategic Petroleum Reserves. Having Rare Earth Strategic Reserves can help provide a **consistent demand environment**, as well as a **fallback at times of any unfavourable action** by the Chinese Government.

## Conclusion

The time is right to focus on boosting the indigenous supply of rare earth metals that currently contribute a total value of nearly US$ 200 billion to the Indian economy. A sustained supply is also essential to reduce its dependence on Chinese imports and truly realize the vision of *Atmanirbhar Bharat.*

Source: **The Times of India**, **Business Insider**, **Indian Minerals Yearbook**, **Firstpost**


## Pre-Legislative Consultation Framework in India – Explained, pointwise


## Introduction

Pre-legislative Consultation is a process where a Bill is properly scrutinized by all stakeholders prior to its enactment, to assess its Constitutionality and rights-compliance. The purpose is to enhance accountability of the Government leading to better policy formulation. The 17th Lok Sabha has passed about 150 Bills in less than 3 years of its existence. On an average, 15 Bills have been passed in each session. In contrast, the 16th Lok Sabha had passed 133 Bills in its entire 5-year duration. While the productivity of the Lok Sabha can be applauded, the speed has come at the cost of debate and deliberation; the two core ideas of democracy that the Parliament stands for. This suggests that the current the Pre-legislative Consultation framework in India requires a relook.

## What is the current Pre-legislative Consultation Framework in India?

**Consultation**: In 2014, the Ministry of Law and Justice **issued a Pre-Legislative Consultation Policy (PLCP)**.

Under the Policy, the Union Government is required to place legislative proposals (Bills, Rules, Regulations etc.) in the public domain for a period of at least 30 days before they were submitted to the Cabinet for consideration.

Each such draft proposal must be accompanied by a brief note: **(a)** Justifying its necessity; **(b)** Financial implications; **(c)** Impact on the environment; **(d)** Impact on the Fundamental Rights of the people; **(e)** The social and financial costs of the Bill.

Comments received from the public need to be summarized and placed on the website of the Department or the Ministry concerned. These also need to be included in a note to the Cabinet along with the draft proposal.

**Scrutiny by Parliament**: Bills go through varying levels of discussions and scrutiny in the Legislature. When a Bill is introduced in a House of the Parliament the Presiding Officer can refer it to the appropriate Parliamentary Committee. The Parliamentary Committee deliberates the Bill in detail e.g., the Parliament took 5 years to examine the Bill to regulate surrogacy before passing it in 2021. However, the process is by-passed many times because the scrutiny is not mandatory e.g., the Constitution Amendment Bill to enable 10% reservation in education and employment for Economically Weaker Sections was passed by the Parliament in just 2 days. The Presiding Officers of either House didn't send it for scrutiny.

In the 16th Lok Sabha (2014-19), only 25% of the Bills introduced were referred to Committees. In contrast, 71% and 60% of the Bills were examined by Committees during 15th (2009-14) and 14th (2004-09) Lok Sabhas, respectively.

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## Post-Legislative Scrutiny in India

The lacunae is not just in the Pre-Legislative process. In India, there is **no framework for post-legislative scrutiny** to understand how the legislation has worked on the ground.

- Usually, the concerned Ministry appoints an expert committee to evaluate the working of the law. However, this is not mandatory.
- The **Comptroller and Auditor General** (CAG) occasionally conduct **performance audits** e.g., the performance audit of the implementation of the Food Security Act (2013). However, due to heavy workload, CAG can't audit the working of every law. In the last decade, the **CAG audited fewer than five non-financial laws**.
- **Law Commission of India** also scrutinzes some laws. It is constituted by the Government for 3 years with **specific terms of reference**. The scrutiny is more focused on the legal aspects of laws. Likewise, it reviews very limited number of legislations.
- Most developed countries have specialized mechanisms for reviewing laws. Some countries in Europe have **provisions related to review mechanisms within the law**. These provisions mandate periodic Reviews with specified timeframe and manner.

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**What is the need to strengthen the Pre-Legislative Consultation Framework?**

**Non Obligatory Nature of the Current System**: It is not obligatory for the Government to adhere to the established procedures. In the current Lok Sabha (17th), less than 20% of the introduced Bills have been referred to Parliamentary Committees (till September 2020). Since the introduction of the 2014 Pre-Legislative Consultation Policy, 227 of the 301 Bills (75%) introduced in Parliament have been presented **without any prior consultation**. Of the 74 placed in the public domain for comments, at least 40 did not adhere to the 30-day deadline.

Further, the Government is under no obligation to justify why a given suggestion was excluded from the final draft.

**Improving efficiency of legislations:** An effective Pre-Legislative Consultation Framework will ensure that any law or scheme must be based on the principle that its benefits outweigh the costs. It will also ensure that among the various alternatives available, the chosen one confers maximum net benefits.

**Better Policy Formulation**: People engagement would get enhanced if the Pre-Legislative Consultation Framework is strengthened. People engagement will result in greater acceptability and better policy formulation. Direct consultation with general public democratizes access to Constitutional Rights and values. For instance, **the Right to Information Act** is seen as a landmark legislation when highlighting the role of civil society actors in the drafting of a Bill.

**Augmenting Trust in the Legislature**: A robust framework will result in improving the transparency and accountability in the legislative process thereby enhancing trust of the masses in legislature.

**Prevent Dominance of the Executive**: The Executive is an integral part of the Legislature, and when coupled with the anti-defection law, it assumes unfettered control over the Legislature. In such a scenario an effective Pre-Legislative Consultation Framework is desired to control its dominance and ensure accountability to the Legislature.

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**Overcoming the limitations of the Judiciary**: Pre-Legislative Consultation will help in better formulation of laws and address concerns of all stakeholders. This will reduce litigation post the passage of laws. The Chief Justice of India recently remarked that poorly drafted laws result in lot of ambiguities leading to litigation and undue burden on the Judiciary.

This will also address the concerns regarding Judicial over-reach to an extent. The expansion of the scope of review by an unelected Judiciary raises concerns regarding Constitutional and democratic legitimacy.

## What is the proposed Legislation and Expenditure Accountability Bill, 2022?

The Bill has been introduced as a Private Member's Bill in April 2022 in the Rajya Sabha. It is based on the **Organization for Economic Cooperation and Development (OECD) recommendations on policy-making practices**. The Bill goes two steps further than the 2014 Pre-legislative Consultation Policy.

**First**, it is a Bill, which means that if it becomes an Act, it will be **legally binding** on the Government.

**Second**, it adds the **dimension of a post-legislative check** with fail-safe mechanisms.

The specifics of the bill revolve around two technical assessments: a **Legislation Impact Analysis** or LIA (and correspondingly, a scheme impact analysis for public schemes) and a **Post-Implementation Assessment (PIA) report**.

The LIA report must offer an assessment of potential costs and benefits to society, the objectives of the intervention with clear measurable outcomes, and the experience of other countries, among other things.

The **PIA has three aspects**: **(a) Performance measurement,** which evaluates schemes and laws against the objectives defined in the LIA; **(b) Impact assessment**, which evaluates qualitative aspects like social, environmental and legal effects and spillovers; **(c) Perception surveys** that measure people's satisfaction.

The Bill requires laws and schemes to have **expiry dates (sunset clauses**). Such a provision would grant the Legislature an opportunity to re-make laws and schemes, thus ensuring that the nation stays up to date on the evolving dynamics of the world. Moreover, if a law or scheme fails its PIA test in three consecutive reviews, it would automatically be repealed.

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## Recommendations of the Council on Regulatory Policy and Governance

- The policy should have clear objectives and frameworks for implementation.
- Adhere to **Principles of Open Government**, including **transparency** and **participation in the regulatory process** to ensure that regulation serves the public interest.
- Establish mechanisms and institutions to **actively provide oversight of regulatory policy**.
- **Integrate Regulatory Impact Assessment** (RIA) into the early stages of the policy process for the formulation of new regulatory proposals.
- **Conduct systematic programme reviews** of the stock of significant regulation against clearly defined policy goals.
- **Regularly publish reports** on the performance of regulatory policy and reform programmes.
- Develop a consistent policy covering the role and functions of regulatory agencies in order to provide greater confidence that regulatory decisions are made on an objective and impartial.
- Ensure the effectiveness of systems for the review of the legality and procedural fairness of regulations.
- Apply **risk assessment**, **risk management**, and **risk communication strategies** to the design and implementation of regulations to ensure that regulation is targeted and effective.
- **Promote regulatory coherence** through co-ordination mechanisms between the supranational, the national and sub-national levels of government.
- Foster the development of regulatory management capacity and performance at sub-national levels of government.
- Give consideration to all relevant international standards and frameworks.

Source: OECD

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*Recommendations of OECD's Council on Regulatory Policy and Governance, 2012*

## What can be done going ahead?

**First**, the proposed 2022 Bill demands considerable effort by the Executive to undertake proper evaluations of schemes and legislative moves. It can **lay the groundwork for a new institutional mechanism** to ensure self-probity in public expenditure and law-making.

**Second**, the media **should do constructive reporting of legislative functioning** and enlighten the masses about the probable impacts of a proposed legislation on their rights and interests. Along with this, **civil society groups** can support the stakeholders for raising their voice in a structured and impactful way.

**Third**, the **impacted stakeholders of any legislative Bill need to sideline their rigid opinions** and ideologies in order to build consensus with fellow stakeholders and the Government. They need to realize that policy-making is an exercise in compromise and that nobody can expect to get their way every time.

**Fourth**, the Government (Executive) has to be mindful of the established procedures and practices. **Proper scrutiny by Parliamentary Committees** can address loopholes in the proposed legislations and reduce the possibility of subsequent backlash (as happened with the Farm Laws). So the process should not be by-passed. **Pre-legislative Consultation can be made mandatory for all Bills**, along with exceptions in case the Government feels that urgent legislation is required to address a particular issue.

**Fifth, The Rules of Procedure and Conduct of Business in the Lok Sabha/Rajya Sabha** can be amended. If the Government does not accept the recommendations of a Standing/Select Committee, then the Minister in charge of the Bill must submit a memorandum to Parliament explaining the reasons for rejecting such recommendations.

## Conclusion

The Government needs to strengthen the Pre-Legislative Consultation Framework in order to improve transparency and accountability of the legislative process. This is needed to enhance

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the Constitutional culture in India under which masses believe that the exercise of State power is limited by the Constitution.

Source: **Mint**, **Mint**, **Indian Express**, **The Hindu**, **The Leaflet**

## Gig Economy in India and the Issues faced by Gig Workers – Explained, pointwise

### Introduction

The rapidly burgeoning gig workforce is ushering in a new economic revolution globally. India is at the frontier of this revolution with its demographic dividend of half-a-billion labour force and the world's youngest population, rapid urbanisation, widespread adoption of smartphones and associated technology. The gig economy is poised to undergo rapid expansion in the coming decade. While the gig economy sector has several upsides with respect to growth and livelihood opportunities, there are some serious concerns that need regulation. NITI Aayog has released a report with comprehensive perspective and recommendations on the gig-platform economy in India. The recommendations can help address the concerns of gig workers in India.
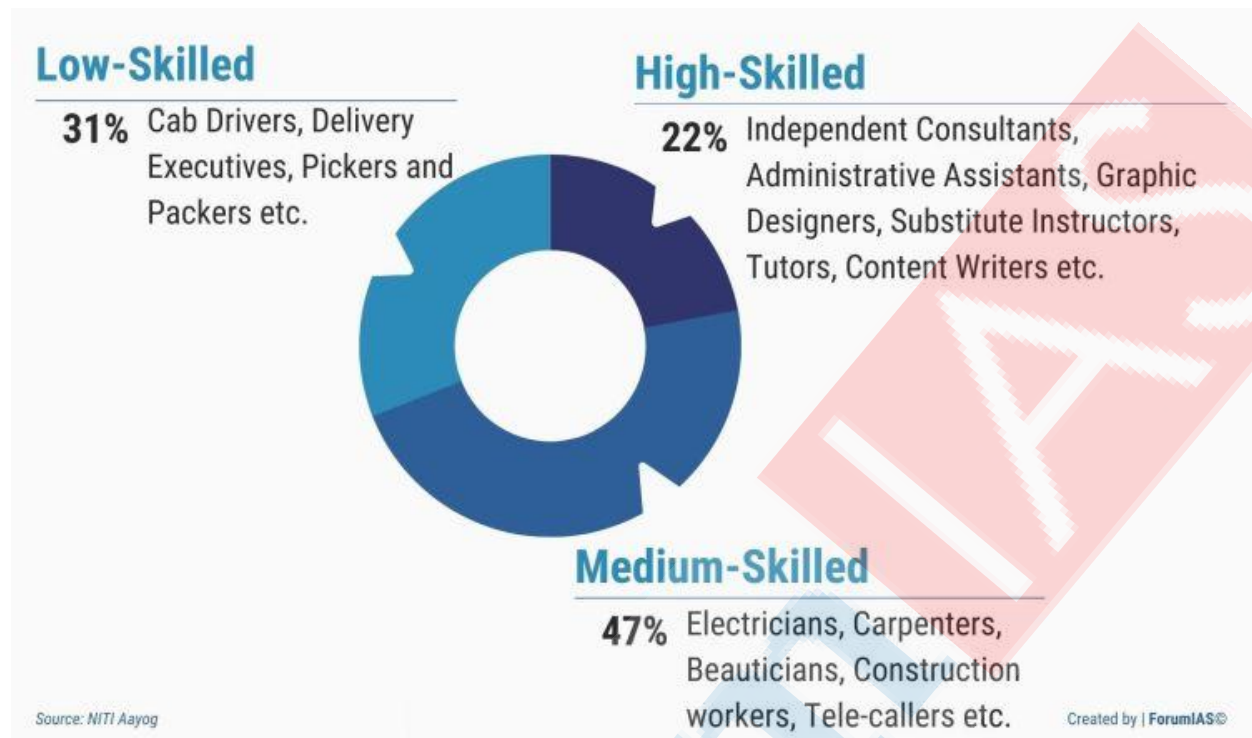
### What is Gig Economy and Gig Worker?

Gig Economy is the evolving economic model wherein the **firms hire workers on a part-time flexible basis rather than as full time employees**. The Code on Social Security, 2020 defines gig workers as those engaged in livelihoods outside traditional employer-employee relationship.

The workers work as **freelancers or independent contractors**. They generally have flexible and adaptable working hours based on individual preferences.

The jobs in gig economy **typically require interacting with the users through online platforms** e.g., the drivers engaged with cab hailing platforms (Uber, Ola etc.), delivery workers engaged with restaurant aggregators (Zomato, Swiggy etc.), or tutors delivering lectures over online platforms. The workers engaged in such jobs are called Gig Workers.

Gig Workers can be broadly classified into two categories — **platform** and **non-platform-based workers**. **(a)** Platform workers are those whose work is based on **online software apps** or **digital platforms**. **(b)** Non-platform gig workers are generally **casual wage workers** and **own-account workers** in the conventional sectors, working part-time or full time.

The Gig workers can also be classified on the basis of skills. These are high-skilled, medium-skilled and low-skilled workers. According to the NITI Aayog Report, at present, about 47% of the gig work is in medium-skilled jobs, about 22% in high-skilled jobs, and about 31% in low-skilled jobs. Trends show that the **concentration of workers in medium skills is gradually declining** and that in low skills and high skills is increasing.

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**Low-Skilled**
**31%** Cab Drivers, Delivery Executives, Pickers and Packers etc.

**High-Skilled**
**22%** Independent Consultants, Administrative Assistants, Graphic Designers, Substitute Instructors, Tutors, Content Writers etc.

**Medium-Skilled**
**47%** Electricians, Carpenters, Beauticians, Construction workers, Tele-callers etc.

Source: NITI Aayog                                                                 Created by | **ForumIAS**©

According to a recent survey by a private firm, Quick Commerce, Healthtech, Fintech, and e-Commerce are the top sectors in the Indian gig economy. Within the gig workforce, work-from-home jobs account for 33% of the roles and 67% were on-field roles.

**What is the size of Gig Economy in India?**

According to NITI Aayog Report, India's gig workforce currently stands at 77 lakh (2020-21). It is expected to rise to 2.35 crore by 2029-30. By 2029-30, gig workers will form 4.1% of India's total workforce, rising from 1.5% in 2020-21. Currently 27 lakh gig workers (35% of gig workers) are engaged in retail trade and sale, while 13 lakh (17%) are engaged in transportation sector. There are 6 lakh workers (8%) in manufacturing and another 6 lakh (8%) in finance and insurance.

However, a report by the Boston Consulting Group expects India's gig economy to rise to 90 million jobs (9 crore) in the next 8-10 years. Another industry report indicates that by 2024, more than 75% of the services industry will be staffed by gig workers. A report by Ernst and Young observed that Indian Freelancers hold a **24% share of the global online gig economy.**
According to a report by ASSOCHAM (Associated Chambers of Commerce and Industry of India), the gig sector has the potential to **grow to US$ 455 billion** by 2024.

**What are the advantages of Gig Economy?**

**Benefits to Gig Workers**: Gig workers have the **flexibility to work according to their convenience and availability**. There are less restrictions related to fixed work-hours, attendance etc. Workers have some flexibility in choosing their work hours. Some workers take gig jobs on a part-time basis to **supplement their income** from regular jobs.

**Cost Efficiencies for Companies**: The **companies are able to save costs** on hiring full time employees. They are able to provide services more economically to the users.

**Jobs for Low-skilled workers**: Gig economy **provides jobs to many low and semi-skilled workforce** with minimum conditions.

**Gain Experience**: It enables the young undergraduates to gather valuable work-experience before joining formal employment.

**Economical**: Many gig workers work remotely and save costs (e.g., on office commute).

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## What are the disadvantages of Gig Economy?

**Job Security**: Most gig workers work on a day-to-day basis, and can be **terminated from their jobs without any notice.** Many gig workers were laid off during the pandemic.

**Lack of Benefits**: Gig workers have **no social security benefits** like ESI, PF or insurance. They have no paid leaves so **failure to work means loss of wage**. **Gig/Platform workers are not covered in all the labour codes**, specifically the 'Code on Wages, 2019' which prescribes minimum wages for various jobs. **There is no wage regulation** and the workers are at the mercy of aggregators.

**Work Conditions**: Most workers have to **put in long hours of work in order to make the job viable**. A large components of workers' wages consists of **incentive which coerces workers to work for long hours**. This reduces the advantage of 'flexible work' in gig economy. There is **lack of transparency on incentive structures.**

**Hidden Charges**: Many aggregators/platforms are burning cash by giving large discounts to users in order to capture larger market share. Companies try to sustain this by **charging high commissions on gig workers**.

**Low Bargaining Power**: Platform workers have little or no voice. Technology has tilted the **power and bargaining scales strongly in favour of the platform companies.**

Platforms have multiple other issues like **(a)** Frequent and random changes to the commission structure, **(b)** Delays in payments, **(c)** Deliberate miscommunication of earnings potential to attract gig workers; **(d)** Lack of access to basic amenities.

## What are the recommendations of the NITI Aayog Report?

The NITI Aayog Report, '**India's Booming Gig and Platform Economy**' has analysed the gig economy from gig workers' perspective and has made several recommendations.

**Accelerating Access to Finance for Workers**: Access to institutional credit may be enhanced through financial products specifically designed for platform workers and those interested to set-up their own platforms. FinTech and platform businesses may be leveraged to provide cash flow-based loans to workers.

**Skill Development for Workers**: Platform-led models of skilling and job creation need to be promoted for the gig and platform sector. Platforms can collaborate with the Ministry of Skill Development and Entrepreneurship, and the National Skill Development Corporation (NSDC) to nurture skilled workers and micro-entrepreneurship.

Transformational upskilling for workers presently engaged in the informal sector in trades such as construction, driving and other services can be undertaken. This will create avenues for horizontal and vertical mobility for workers to take up jobs in the gig and platform sector, empowering them to augment their earnings.

**Platformization**: A **Platform India** Initiative can be launched on the lines of Start-up India. The purpose would be to increase access to the platforms. This can be achieved by simplification and handholding, funding support and incentives, skill development, and social financial inclusion. The horizon of platforms can be broadened e.g., Self-employed individuals engaged in the business of selling regional and rural cuisine, street food, etc. may be linked to platforms.

**Enhancing Social Inclusion**: Gender Sensitisation and Accessibility Awareness Programmes for workers and their families should be undertaken. Platform businesses can undertake partnerships with Civil Society Organizations (CSOs) to enable different sections of workers such as women workers and PwDs to take up employment opportunities in the platform sector through skill development, access to finance and assets.

Platform businesses can **create a more enabling environment for women and PwD workers** through changes in the work-design and workplace facilities.

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**Extending Social Security**: Platforms can offer paid leaves, and access to insurance along with pension and retirement benefits. Gig and platform firms may consider providing income support to workers. This will help in providing assured minimum earnings and social security from income loss in the wake of uncertainty or irregularity in work.

NITI Aayog has proposed **RAISE Approach for operationalizing the Code on Social Security (CoSS), 2020**.

# RAISE Framework

NITI Aayog has proposed a five-pronged RAISE approach to ensure realisation of full access to social security for all gig and platform workers.

**Recognise** the varied nature of platform work to design equitable schemes.

**Allow** augmentation of social security through innovative financing mechanisms.

**Ensure** benefits are readily accessible to workers.

**Incorporate**, while designing schemes, the specific interests of platforms, factoring the impact on job creation, platform businesses and workers.

**Support** workers to subscribe to government schemes and welfare programmes through widespread awareness campaigns.

Source: NITI Aayog                                                                                          Created by | ForumIAS©

## What are the provisions for Gig Workers in the Code on Social Security 2020?

The Code on Social Security, 2020, gives a legal identity to the term 'gig worker'. The Code defines gig worker as a **person who performs work or participates in a work arrangement and earns from such activities outside of traditional employer-employee relationship.**

Chapter IX of the Code deals with Unorganized, Gig and Platform workers. Section 114 of the Code mentions that the **Central Government may frame and notify suitable security schemes for the gig and platform workers**.

The matters covered in the section 114 of the code are; **(a)** Life and Disability Cover; **(b)** Accident Insurance; **(c)** Health and maternity benefits; **(d)** Old age protection; **(e)** Creche; **(f)** Any other benefit determined by the Government.

The Code recommends that schemes may be funded through a combination of contributions from Union and State governments, as well as gig platform aggregators.

The **National Social Security Board** will have **oversight of the welfare of gig economy workers**, and will include representatives of both aggregator companies and gig workers.

The Code also mandates that the **Union government establish a Social Security Fund for gig economy workers**.

## What are the issues to be addressed in the Code?

The code should **define the employee-gig worker relationship**. The EU law determines this relationship in terms of levels of aggregator supervision. This could be a tricky exercise in India

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since there are many categories of self-employed workers who typically **divide their time between multiple employers** e.g., food delivery agents or cab aggregators.

There is a need to **balance the benefits to gig workers against the cost advantages** that platforms and aggregators derive from their low-cost business models.

There is no clarity on **how the costs of social security will be distributed among stakeholders**; the workers, the aggregators, Union and State Governments. The law lists various possibilities — Government contribution, a mix of Government and private sector money, Corporate Social Responsibility funds or even a 1 – 2% cess on revenues of these companies. The implementation process must be clarified and codified.

Another concern is the **absence of redress** for gig workers in the Code. Labour Courts exist, but they are expensive for ordinary workers to access. Instead, a **responsive appeal institution** needs to be created.

## Status of Gig Workers Globally

The status of gig workers is also undergoing transition in major global economies.

- In November 2020, the **US State of California** in a ballot **allowed platforms to classify gig workers as 'independent contractors'**. With this classification, they were kept out of obligatory benefits. The ballot was **termed unconstitutional** by a County Superior Court in California in August 2021.
- The **Supreme Court of the UK** ruled that **Uber must treat its drivers as workers** and not self-employed.
- The **European Commission** is considering proposals that could lead to **classification of gig workers as employees**. This will entitle them to **security and legal protections** that include minimum wage, collective bargaining, paid leave, unemployment and sickness benefits, and pensions. The Commission also wants to **increase transparency** around the management of employees via algorithms, including the right for workers to contest automated decisions.
- The **Supreme Court of Spain** in May 2021 gave 90 days to food delivery companies to **convert their workers to 'staff'**. The Court also asked the companies to provide **greater transparency** on the **working of their Apps**.

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## Why are platform companies reluctant to assign employee status to Gig workers?

If gig workers are classified as employees, platforms/aggregators will have **higher operating costs and lower utilization of the workforce**. To rectify, the platforms will have to cut down the number of employees, which will impact the customer experience by increasing service delivery time. The power of the platform model lies in the ability to deliver a great customer experience along with high operating efficiency by relying on gig workers. The **whole business model will fail in absence of these cost efficiencies**.

## What is the way forward?

**First**, Platform companies should explore ways to ensure that every gig worker, irrespective of the number of hours put in every month, will be paid an equivalent living/minimum wages.

**Second**, Uber UK has committed to provide the national living wage, paid holiday time equivalent to about 12% of driver's earnings along with a pension plan to its driver. Other companies can replicate this model.

**Third**, the provisions of Code on Social Security should be put into effect. However, the implementation should be undertaken in a gradual manner. Platform companies should be

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provided time to adjust their business to the new conditions that will increase their costs. NITI Aayog's RAISE Approach can be adopted.

**Conclusion**

Gig Economy has the potential to create jobs for India's large workforce, especially the low-skilled workers. The Government must take appropriate steps to support the expansion of gig economy and platforms. At the same time, the interests of the gig workers must be protected to provide them with just work conditions as well as social security benefits. Achieving the balance will need some effort from all stakeholders.

Source: **The Hindu**, **Mint**, **Business Standard**, **NITI Aayog**

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