



## 7 PM COMPILATION

**October, 2022**

### **Features of 7 PM compilation**

- ❖ Comprehensive coverage of a given current topic
- ❖ Provide you all the information you need to frame a good answer
- ❖ Critical analysis, comparative analysis, legal/constitutional provisions, current issues and challenges and best practices around the world
- ❖ Written in lucid language and point format
- ❖ Wide use of charts, diagrams and info graphics
- ❖ Best-in class coverage, critically acclaimed by aspirants
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- ❖ Best cost-benefit ratio according to successful aspirants

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**Sub topic:- mechanisms, laws, institutions and Bodies constituted for the protection and betterment of vulnerable sections.**

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**Topic:- Environment and Bio-diversity**

**Sub topic:- Conservation, environmental pollution and degradation.**

[Kurukshetra October Summary] Promoting Women Agripreneurship – Explained, pointwise

**Topic:- Social Justice**

**Sub topic:- mechanisms, laws, institutions and Bodies constituted for the protection and betterment of vulnerable sections.**

CCI (Competition Commission of India): Provisions, Working and Challenges – Explained, pointwise

**Topic:- Indian Constitution and Polity**

**Sub topic:- Statutory, regulatory and various quasi-judicial bodies.**

## United Nations Security Council (UNSC) Reforms – Explained, pointwise

### Introduction

India's External Affairs Minister (EAM) visited the United Nations (UN) for the 77th session of the United Nations General Assembly (UNGA) in September 2022. The United Nations Security Council (UNSC) Reform was the main agenda of India's EAM. In his address to the UNGA, the EAM said that the need to reform the UN Security Council cannot be denied forever. The Minister met his counterparts from Germany, Brazil and Japan under The Group of Four (G4) banner. The group is primarily focused on UNSC reform, and permanent membership of the body for G4 members. There is a near consensus among all UN members that the UNSC need to be reformed. However, the manner of the reform has remained contentious. This has stalled the reforms for long.

### About the Structure and Functioning of the UNSC

The Security Council has 15 members. 5 members are permanent, China, France, Russia, the United Kingdom, and the United States. They are collectively known as the P5. The 10 non-permanent members are elected for 2-year term by the UNGA. To be elected, a Member State must receive at least two-thirds of all votes cast. The members are chosen according to the region; **African Group** (3), **Latin America and the Caribbean** (2), **Asia-Pacific** (2), **Western Europe and Others** (2), and the **Eastern Europe** (1).

The 5 permanent members have the **power of veto**. Under Article 27 of the UN Charter, Security Council decisions on all **substantive matters** require the affirmative votes of three-fifths (i.e. 9) of the members. A negative vote or a "veto" by a permanent member **prevents adoption of a proposal**, even if it has received the required votes. Abstention is not regarded as a veto in most cases, though all five permanent members must vote for adopting any **amendment of the UN Charter** or any **recommendation of the admission of a new UN member state**. The decisions of the UNSC (known as resolutions) are binding on all members.

### Functions of the UNSC

Under the United Nations Charter, the functions of the Security Council are:

- **Maintain international peace** and security in accordance with the principles and purposes of the UN.
- **Investigate any dispute** or situation which might lead to **international friction**.
- **Recommend methods** of adjusting such disputes or the **terms of settlement**.
- **Formulate plans** for the establishment of a system to **regulate armaments**.
- **Determine the existence of a threat** to the peace or **act of aggression** and to recommend what action should be taken;
- Call on Members to **apply economic sanctions** and other measures not involving the use of force to prevent or stop aggression.
- **Take military action** against an **aggressor**.
- **Recommend** the admission of **new Members**.
- **Recommend** to the General Assembly (GA) the **appointment of the Secretary-General** and, together with the GA, to elect the **Judges of the International Court of Justice**.

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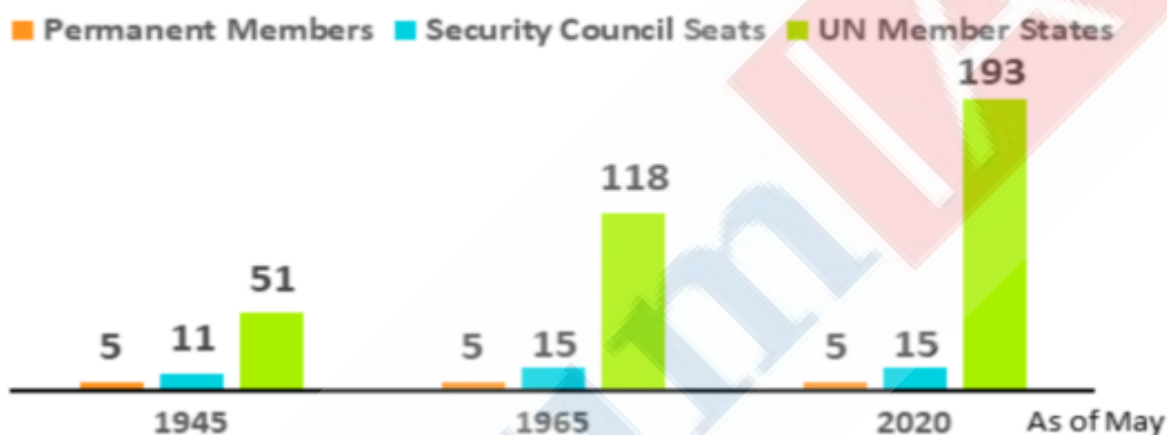


### What is the need for UNSC Reforms?

**First**, the current composition of the UNSC reflects the geopolitical situation of 1945. The scenario has changed a lot since then. New economic and military powers have risen since then,

**Second**, the UNSC had 11 members in 1945 (5 Permanent and 6 non-permanent). The UN member states stood at 51. The UNSC was expanded to the present strength in 1965 by adding 4 new non-permanent members. Since then, the membership of the UN has expanded to 193. The membership of the UNSC has remained stagnant. The Council's present composition is no longer representative of a world. Africa in particular does not have the representation on the Council that its current importance require.

### Number of UN Member States



Source: [Ministry of Foreign Affairs, Japan](#)

**Third**, Alongside stipulating a geographically balanced distribution of seats, the Charter of the United Nations also expressly states that countries that make considerable contributions to the UN should be members of the Security Council.

**Fourth**, The issues that the Security Council deals with have diversified over the past 75 years including: peace-building, conflict prevention, non-proliferation, counter-terrorism and protection of civilians. Hence there is a need for a more broad-based Council.

**Fifth**, In recent years, members' clashing interests have frequently hampered the Council's capacity to respond to significant conflicts and emergencies, such as Syria's civil war, Russia's Ukraine War, and the COVID-19 pandemic.

**Sixth**, In the absence of reform, there is a danger that decision-making processes could be shifted to other forums even though such forums do not have the binding effect and legitimacy of the Security Council. That is not in anyone's interest.

A Council that is more reflective of the contemporary geopolitical realities of the world = A more effective Council

A more representative Council = A more effective Council

A more democratic Council (incorporating inclusive and participatory decision-making) = A more effective Council

A Council with a membership that includes regional powers will be more capable = A more effective Council

*Source: United Nations University. A reformed UNSC that is more representative, democratic and inclusive will be a more effective UNSC.*

In one of the debates on reforms, India's representative to the UN argued that, "... an enlarged Council would **address the democratic deficit**, which prevents **effective multilateralism**, a multilateralism that is based on a **democratically-evolved global consensus**".

#### **What are the proposed plans for UNSC Reforms?**

The debate for UNSC Reforms was intensified after the end of the Cold War. However, there are diverse views regarding the reforms' measures and manner. Different groups have been formed, that are pushing for widely different reform measures like expansion of total membership, permanent vs non-permanent seats, status of veto powers etc.

## Membership Reforms

	G4 (Group of Four) (※position presented in the IGN document in 2015)	AU (African Union) (※position presented in the draft resolution by Africa in 2005)	CARICOM (Caribbean Community)	L69	UFC (Uniting for Consensus)
Member	Brazil, Germany, India and Japan	54 African countries	14 CARICOM member states	India, Jamaica, PNG, Saint Vincent, etc.	Italy, Republic of Korea, Mexico, etc.
Permanent Seats	11 (+6) Africa(2), Asia-Pacific(2), Latin America and Caribbean(1), Western Europe and other(1)				5 (status quo)
Non-Permanent Seats	14 or 15 (+4 or +5) Africa(1 or 2), Asia-Pacific(1), Eastern Europe(1) Latin America and Caribbean(1)	15 (+5) Africa(2), Asia-Pacific(1), Eastern Europe(1) Latin America and Caribbean(1)	16 (+6) Africa(2), Asia-Pacific(1), Eastern Europe(1) Latin America and Caribbean(1), SIDS(Small Island Developing States)(1)	Up to 21 (+11) increase of non-permanent seats and creation of new category of membership based on longer term non-permanent seats	
Veto	The new permanent members shall not exercise the veto-right until a decision has been taken during a review (15 years after the reform)	The veto should be abolished but so long as it exists, it should be extended to all members including the new permanent members	Same as the left In addition, efforts must be made to limit its use	Ready to consider formulas on how to best limit its use	

※G4 expressed its support to the Common African Position (CAP) in the G4 Ministerial Joint Press Statement (September 2021).

Issues to be discussed:

- Categories of Membership
- Regional Representation
- Question of the Veto
- Size of an Enlarged Council and Working Methods of the Council
- Relationship between the Council and the General Assembly

Source: United Nations University. Different Groups have proposed different plans for expansion of permanent and non-permanent membership as well as the veto power. The African Bloc (AU) is also called the Ezulwini Consensus.

The creation of the '**Open-ended Working Group on the Question of the Equitable Representation on and Increase in the Membership of the Security Council and Other Matters Related to the Security Council**' (the UN committee with the longest title) has formalized the debate and proposition of various reforms.

### Power to Veto Reforms

The most contentious issue has been the power to veto. The Working Group has been considering a number of propositions in relation to the veto.

**Abolishing the Veto:** This is considered an unlikely scenario. It would require the P5 countries to relinquish it voluntarily as they have the capacity to veto any proposal that it be abolished.

**Two Veto Requirement:** Two vetoes be required to defeat a majority resolution.

**Extension of the Veto:** To create new permanent members without the veto would create two classes of permanent members within the Council. However, some Member States argue that extension of veto rights will further limit the effectiveness of the UNSC.

**Limitation of the use of the veto:** The use of veto powers should be limited only to Chapter VII enforcement decisions. Chapter VII of the UN Charter deals with the '*Action with Respect to Threats to the Peace, Breaches of the Peace, and Acts of Aggression*'. The P5 want to retain this power especially for important matters like the appointment of the Secretary General. A further suggestion is that veto should be limited to international purposes, not national interests.



**Justification of the use of the veto:** It has been suggested that any use of the veto should require an explanation to the General Assembly.

### Procedural Reforms

Many Member States call for a greater level of transparency, responsibility and accountability in all the procedures of the Security Council. It has been proposed that the decisions by the Security Council to intervene should also be scrutinised and monitored by the General Assembly and the International Court of Justice (ICJ). It believed that proper accountability for great executive powers, such as deciding on war or peace, required the oversight of a judicial body capable of determining whether an action was within relevant international law.

### What are the challenges to UNSC Reforms?

There is an overwhelming international consensus that the UNSC needs to be reformed. However, there are considerable challenges in effecting these reforms.

**First,** The biggest obstacle to achieving comprehensive Security Council reform is that it will require an **amendment to the UN Charter**. Any enlargement of the Council, removal of permanent membership or official change in voting procedures by removal of the veto, would require an amendment to the Charter. In order to amend the Charter, there needs to be agreement of two-thirds of the General Assembly and two-thirds of the Security Council, including the Permanent Members.

**Second,** the P5 members are not ready to relinquish their power to veto. Nor they are enthusiastic about sharing the power with 'new' members.

**Third,** each permanent seat contender is opposed by some other member e.g., permanent membership of India is opposed by China and Pakistan, Japan is opposed by China, Brazil is opposed by Argentina and Germany is opposed by Italy. In fact, the United for Consensus (Coffee Club) has been instrumental in holding back reforms to the United Nations Security Council. The prime movers of the club include Italy, Spain, Australia, Canada, South Korea, Argentina and Pakistan.

Thus the biggest challenge to UNSC reforms is the lack of consensus on the reform measures.

### What are the arguments in favor of Permanent Membership of India?

**First,** India is soon going to become the most populous nation in the world. India is home to ~18% of the world's population with 1.4 billion people. Such a large population needs permanent representation at the world stage.

**Second,** India recently became the 5th largest economy in terms of GDP (Nominal). India is already the 3rd largest economy in terms of GDP (PPP).

**Third,** India is also a rising military power. India has been ranked 4th in the Global Firepower Index, behind the US, Russia and China, and ahead of the P5 nations, the UK and France. India's capabilities are rapidly expanding in multiple fields like space exploration.

**Fourth,** India has always taken principled stands on international affairs. India led the Non-aligned Movement and supported a multi-polar world. India gave the principle of **Panchsheel** (Mutual respect for sovereignty, non-aggression, non-interference, equality and peaceful coexistence) whose relevance is timeless. **Panchsheel** principles can be highly significant to UN Charter to work towards peace and security in cooperation. Moreover, India has been a champion of Disarmament and elimination of WMDs including Nuclear weapons.

**Fifth**, India has also regularly contributed to the UN-Peacekeeping Missions. As of September 2021, India had ~5500 peacekeepers, though the number has come down from ~8,000 in the 2000s.

#### What should be the approach going ahead?

**First**, the Security Council should better reflect on the current global realities and incorporate more geographically diverse perspectives. It must demonstrate flexibility and willingness to compromise in the name of greater credibility and legitimacy.

**Second**, Developing countries vision of development for the South and the role on the UN in promoting and achieving such vision needs to be strongly and consistently articulated.

**Third**, The UN's role as the core global governance institution should not be undermined by the UN reform. Rather, such process should result in a strengthened mandate for the UN as the primary global governance institution to be able to exercise coordinative functions over the work of the major multilateral economic policymaking institutions like the World Bank, the IMF and the WTO.

**Fourth**, India should continue to push hard for UNSC reforms. Foreign Policy experts suggest that a pragmatic approach should be to accept a permanent status without the power to veto.

#### Conclusion

The road of UNSC reform is not easy. Despite the consensus on the need reforms, Member States have failed to agree on a number of issues. The role of P5 nations is going to be vital in this regard. If they agree to expansion of the UNSC, including permanent membership, rest of the Member States will follow suit in support. The P5 members should realise that a more democratic and representative Security Council would be better-equipped to address global challenges, and that there are more pressing issues to be tackled at the global level than merely preserving their prerogatives. The reformers—India, Japan, Germany, and Brazil, or the G4—should maintain their multilateral diplomacy in order to build a democratically evolved global consensus on restructuring the UN Security Council.

**Syllabus:** GS II, Important International institutions, agencies and fora their structure, mandate; Effect of policies and politics of developed and developing countries on India's interests; Bilateral, regional and global groupings and agreements involving India and/or affecting India's interests.

**Source:** [The Hindu](#), [The Hindu](#), [The Times of India](#), [United Nations University](#)

### Draft Telecommunication Bill, 2022 – Explained, pointwise

#### Introduction

The Department of Telecommunications (DoT), under the Union Ministry of Communications has released the Draft Telecommunication Bill, 2022 for public comments. The Bill seeks to replace the colonial era legislation that regulated the sector, the Indian Telegraph Act, 1885. Experts have praised the Bill for some progressive steps. At the same time concerns have been raised about some provisions that provide excessive powers to the Union Government regarding regulating the sector.

**What is the current regulatory framework for Telecommunication Sector?****Legislations and Rules**

The telecoms industry is regulated by the following central legislations: **(a)** the Indian Telegraph Act, 1885 (Telegraph Act); **(b)** the Wireless Telegraphy Act, 1933 (WT Act); **(c)** The Telegraph Wires, (Unlawful Protection) Act 1950; **(d)** the Telecom Regulatory Authority of India Act, 1997 (TRAI Act); **(e)** the Information Technology Act, 2000 (IT Act).

Additionally, there are several policies, circulars and notifications which are issued by the Department of Telecommunications (DoT), and the Union Government.

Audio-visual distribution is regulated under: **(a)** the Cable Television networks (Regulation) Act, 1995; **(b)** the Cinematograph Act, 1952; **(c)** the Sports Broadcasting Signals (Mandatory Sharing with Prasar Bharati) Act, 2007; **(d)** the Press Council Act, 1978; **(e)** the Information Technology (Intermediary Guidelines and Digital Media Ethics Code) Rules, 2021 (IT Rules 2021). The **Consumer Protection (E-Commerce) Rules, 2020**, have also been notified to regulate e-commerce entities and may also extend to social media platforms.

**Regulatory bodies**

The Department of Telecommunications (DoT), Ministry of Communications, TRAI, and the Ministry of Information and Broadcasting (MIB) regulate the sector.

**Telecommunications Engineering Centre (TEC)** is responsible for drawing up of standards, generic requirements, interface requirements, service requirements and specifications for telecom products, services and networks.

The audio-visual media distribution industry is regulated by the MIB, as well as the **Central Board of Film Certification (CBFC)**.

Self-regulatory bodies, namely, the **Professional News Broadcasters Standards Authority, Internet and Mobile Association of India (IAMAI)**, the **Indian Broadcasting Foundation**, and the **News Broadcasting Standards Authority**, and the **Broadcasting Content Complaints Council** govern the sectors.

Further, the MIB has notified the following bodies for IT Rules, 2021 compliance: **(a)** Confederation of Online Media (India) – Indian Digital Publishers Content Grievance; **(b)** Web Journalists Standards; **(c)** Professional News Broadcasting Standards; **(d)** The Digital Publisher Content Grievances Council (IAMAI).

**What is the need for the Telecommunication Bill?**

The telecommunication ecosystem in India today has **117 crore subscribers** and **employs 4 crore people**. The sector contributes around **8% of India's GDP**.

The existing regulatory framework for the telecommunication sector is primarily based on the Indian Telegraph Act, 1885. The nature of telecommunication, have undergone a massive change since the era of 'telegraph'. The **challenges associated with the communication technologies of present day** like the 5G, Internet of Things are not covered under the existing legislations. Hence there is a **need for a comprehensive legal framework** that reflects the nature and need of telecommunication technology of 21st century.

Moreover, Telecom **Spectrum** has become a **vital and strategic resource** in the present times. There is a lack of comprehensive legal framework regarding the Spectrum like auction of spectrum. The draft Telecommunication Bill seeks to address this gap.



Through the Indian Telecommunication Bill, 2022, the Union Government aims to **consolidate and amend the existing laws** governing the provision, development, expansion and operation of telecommunication services, telecom networks and infrastructure, in addition to assignment of spectrum.

The draft Telecommunication Bill, consolidates three separate acts that govern the telecommunications sector — Indian Telegraph Act 1885, Indian Wireless Telegraphy Act 1933, and The Telegraph Wires, (Unlawful Protection) Act 1950.

#### **What are the salient provisions of Draft Telecommunication Bill?**

**First**, The draft Bill incorporates some major expansions to the existing definitions of telecommunication services. 'Over-The-Top' (OTT) communication services have been included in the telecommunication services. This expands the definition widely to include all instant messaging, video, call applications like WhatsApp, Zoom, Telegram, Signal that run as services over the internet using data.

**Second**, The draft Bill deals with Licensing and Registration. It grants the Union Government the 'exclusive privilege' to 'provide telecommunication services', operate networks and issue licences to telecom service providers. As OTT platforms have been covered under Telecommunication Services, they may also have to seek licences to operate in India.

**Third**, the draft Telecommunication Bill provides for messages or communication over any telecommunication services to be intercepted and disclosed in the event of a public emergency.

**Fourth**, the Bill also covers issues related to Spectrum allocation. The Bill states that the Union Government shall assign spectrum to best serve the common good and **ensure widespread access to telecommunication services**. It may notify a National Frequency Allocation Plan (NFAP) for the use and allocation of spectrum.'

**Fifth**, The Draft Telecommunication Bill has provided a framework governing payment defaults by licensees, registered entities, or assignees, and allows the government to write-off of such amounts or part thereof. The Bill intends to **reduce the burden on telecom companies** by reducing the penalties levied. It seeks to make most of the offences cognisable.

**Sixth**, The draft Bill also accords the Union Government with powers to defer, convert into equity, write off or grant relief to any licensee under extraordinary circumstances, including financial stress, consumer interest, and maintaining competition, among other things. It also proposes to **replace the Universal Service Obligation Fund (USOF) with the Telecommunication Development Fund (TDF)**. USOF is the pool of funds generated by the 5% **Universal Service Levy** that is charged upon all telecom fund operators on their Adjusted Gross Revenue. The USOF has largely been used to aid rural connectivity.

**Seventh, Right of Way (ROW)**: The Bill tries to achieve through law, a 'right of way' (ROW) enforceable at the State and at the Municipal Corporation level. It lays down a framework in which a public entity that owns the land has to grant 'right of way' permission expeditiously unless it gives a substantive ground for refusal.

#### **What are the concerns with the Draft Telecommunication Bill?**

According to the Industry and Privacy experts, there are three broader aspects of the new proposed framework that stand out as major concerns and threaten the fundamental rights of Indian citizens: (a) Widely expanded definitions of telecommunication and licence requirements

for internet-based applications; **(b)** Threats to online privacy and the undermining of strong encryption and surveillance concerns; **(c)** The provisions to suspend the internet at a time when India already suffers the highest number of internet shutdowns in the world.

**First**, the **licence regime for OTT services** is likely to have two consequences; **(a)** The cumbersome KYC process where users will have to register for usage as they do for SIM cards and phone connections. This is a deep concern from a surveillance and freedom of speech aspect as well; **(b)** This may also spur data localisation demands, one that has been a controversial provision in the now withdrawn Personal Data Protection Bill, 2019.

**Second**, Given that OTTs have also been defined as telecom services, industry stakeholders have raised the concern of end-to-end encryptions being weakened or possibly broken in order to intercept the communications. Thus, the draft Telecommunication Bill appears to have ignored appeals for surveillance reforms including the landmark ruling in 2017 by the Supreme Court, affirming the right to privacy as a fundamental right enshrined in Article 21 of the Constitution of India.

**Third**, On the occurrence of any public emergency or in the interest of the public safety, the Union or State Governments can **order the suspension of communication services** on any telecommunication network. Internet shutdowns are a **threat to an open and free internet** and also cause immense economic losses amounting to billions of dollars.

**Fourth, Bankruptcy provisions:** Though the intent of the bankruptcy provisions in the draft Telecommunication Bill is noble, the Union Government might face huge difficulties in executing them. The Bill also **overrides provisions of the Insolvency & Bankruptcy Code (IBC)**, which might complicate resolution proceedings.

**Fifth**, The draft Bill plans to **confine TRAI's powers to making recommendations only if requested by the DoT**. At present, TRAI has no powers of enforcement of its directives and can't levy penalties on telecom companies. If this Bill is passed, TRAI can't even make suo moto recommendations, and will become defunct.

**Sixth**, experts argue that regulatory framework should regulate aspects related to infrastructure and hardware of telecommunication network. It should interfere with 'layers of software' that ride over the hardware. This can lead to **stifling of innovation in telecommunication technologies**.

#### **What should be the approach going ahead?**

The Draft Telecommunication Bill is open for comments by public till October 20, 2022. After that the Government will review the suggestions and may make changes to the provisions of the Bill, before introducing the Bill in the Parliament.

The Government must address the concerns related to privacy of the users. In addition, the provisions in conflict with the IBC can also be reviewed and rectified in order to remove any confusion and delay in proceedings.

#### **Conclusion**

The draft Telecommunication Bill in its present form, while vague on certain provisions, points towards the general direction in which the Union Government wants to take telecom sector and its regulation. As India embarks on its *Amritkaal* phase, there have been calls for liberation from



the colonial mindset. Hence, the Government must remove the provisions which are similar to the colonial-era legislations.

**Syllabus:** GS II, Government policies and interventions for development in various sectors and issues arising out of their design and implementation; GS III, Infrastructure.

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

### CDS, Chief of Defence Staff: Benefits and Challenges – Explained, pointwise

#### Introduction

The Government has appointed Lt. General Anil Chauhan as the next Chief of Defence Staff (CDS) of India. The post has been vacant since the death of the country's first CDS Gen. Bipin Rawat in a helicopter crash in December 2021. The appointment has been welcomed by defence experts. It is expected that the new CDS would carry on the reforms process in defence forces initiated by the Gen. Rawat. Indian defence forces face considerable challenges, including the possibility of two-front war with hostile neighbours. Making the forces future-ready would be one of the top priorities of the CDS.

#### About the Chief of Defence Staff (CDS)

The Chief of Defence Staff (CDS) is the **highest-ranked officer** of India's armed forces. The CDS is the Chairperson of the Chief of Staff Committee (CoSC). He is the single-point military adviser to the Union Government and brings synergy in the matters of the tri-services i.e. the Army, Navy and Air force. A CDS is a 3- or 4-Star General belonging to any of the three sectors of the Indian armed forces.

The post of the CDS was first officially recommended by the Group of Ministers (GoM) in 2001 based on the recommendations of the **K Subrahmanyam Committee** (Kargil Review Committee (KRC)) in 2000. However, there was no significant movement in this regard. Subsequently, similar recommendations were given by the **Naresh Chandra Task Force** (2012) and the **Lieutenant General D. B. Shekatkar Committee** in 2016.

The decision to create the post of CDS was taken by the Cabinet Committee on Security in December 2019. Gen Bipin Rawat took charge as the first CDS on January 01, 2020. The post of the CDS has been aimed to enhance the quality of Military Advice to Political Leadership through integration of Service inputs and to develop and foster expertise in defence matters for better and more informed decision making.

Simultaneously, the **Department of Military Affairs (DMA)** was created in the Ministry of Defence (MoD) on January 01, 2020. The DMA has been created with the purpose of promoting jointness of tri-services in various areas such as procurement, training and staffing.

Together, these two reforms have been termed as the most important reforms in the defence organization.

#### What are the recent amendments in relation to the post of CDS?

The Union Government had recently amended defence laws to allow any serving or retired 3-star officer under the age of 62 to be eligible for the post of Chief of Defence Staff (CDS). The amendment has **expanded the pool of officers** that are eligible to the post of CDS to include

the Lieutenant Generals, Air Marshals, and Vice Admirals. Earlier only 4-star Generals, (the Service Chiefs, Generals, Air Chief Marshals, Admirals) were eligible.

The Amendment has also allowed the Union Government to extend the tenure of the CDS as per requirements subjected to a maximum age of 65 years. Service chiefs have a tenure of 3 years or until the age of 62, whichever is earlier.

#### What are the roles of the CDS?

**First**, The CDS **heads the Department of Military Affairs** and acts as its ex-officio Secretary. The mandate of the Department of Military Affairs includes **facilitation of restructuring of military commands** for optimal utilisation of resources by bringing about jointness in operations, including through **establishment of joint/theatre commands**.

**Second**, The CDS is the **Permanent Chairperson of the Chiefs of Staff Committee** and a member of the **Defence Acquisition Council** and the **Defence Planning Committee**.

**Third**, the CDS acts the **principal military advisor to the Defence Minister** on all matters related to the tri-services and military advisor to the **Nuclear Command Authority**.

**Fourth**, the CDS has a responsibility for **coordination among the three services** in equipment and arms procurement, training and staffing.

**Fifth**, the CDS assigns **inter-services prioritisation to capital acquisition proposals** (i.e., procuring new equipment) based on the anticipated budget.

**Sixth**, the CDS is also charged with **bringing about reforms in the functioning of the three services** with the aim to **augment combat capabilities** of the Armed Forces by reducing wasteful expenditure.

#### Why are the benefits of the CDS?

Several initiatives have been undertaken since the creation of the CDS.

**First**, It is necessary to have a professional body to render **single-point military advice** to the Government on matters of national security. The Department of Military Affairs (DMA), by virtue of being a truly integrated department, will achieve better results at all levels through effective coordination between the Armed Forces and the Civil leadership. This will help **facilitate inter-service integration** and **better civilian-military coordination** in the Nation's Higher Defence Organisation.

**Second**, It will also strengthen the **process of Joint Planning, Operations and Procurement**, thereby making Armed Forces more effective. Under this new Department, the Logistics structure is being fully revamped to make it more efficient. In this regard, three **Joint Services Study Groups** (JSSG) are developing common logistic policies for Services that will enhance all supply chain functions such as planning, procurement, inventory-maintenance, distribution, disposal and documentation. A pilot project based on the establishment of three Joint Logistic Nodes (JLN) at Mumbai, Guwahati and Port Blair has already been rolled off.

**Third**, A concerted effort is being made to move forward from a **Single Service approach to integrated planning and execution**. Towards this, three **Joint Doctrines** have been formulated in the last one year, while four new joint doctrines namely Capstone, Space, Cyber and Intelligence Surveillance and Reconnaissance (ISR) are at an advanced stage.

**Fourth**, in order to enhance Combat Capability and balance defence expenditure, more than 270 logistic installations of the Indian Army have been closed or scaled down, resulting in substantial savings to the exchequer. It will also help in increasing the 'Teeth to Tail' ratio.

#### Teeth to Tail Ratio

The **teeth-to-tail ratio** (T3R) is the amount of military personnel required to supply and support ('tail') each combat soldier ('tooth'). Teeth-to-tail ratio is often inversely related to its technological capabilities. A force with a high teeth-to-tail ratio will have more personnel devoted to combat, but these soldiers will lack the support provided by the tail. Such support includes the logistics and communication infrastructure on which modern forces depend. A force with a higher teeth-to-tail ratio may have more combat troops, but each will be less effective.

**Fifth**, A holistic review of the training methodology is also underway to modernise, integrate and rationalise training, as also to ensure optimal utilisation of infrastructure and resources.

**Sixth**, A 'Tri-Services Joint Working Group' has also been setup to study and work out the nuances of **integrating Communication Networks** between the Services.

#### What are the challenges?

**First**, bringing **jointness in operations** including through establishment of **integrated theatre commands** is a complex task. This may invariably encroach upon the domain of the services chiefs and will face resistance during conception and implementation.

#### *Proposed Integrated Theatre Commands*

**Read More:** [Integrated Theatre commands in India – Explained, pointwise](#)

**Second**, Another hurdle will be to **prioritize the budget allocation** and acquisition of latest technologies in order to meet the requirements of the tri-services. The 3 services have competing claims (e.g., to build new aircraft carrier for the Navy or more fighter jets for the Air Force), and it will be difficult to establish balance. The CDS will have to ensure efficient logistics resource management and avoiding duplicity of effort. This can be carried out by streamlining the current policies and preparing a Joint Logistics Doctrine.

**Third**, In the operational realm, the biggest challenge will be aligning operational preparedness to meet a **2-front threat**. Combined with the threat of proxy war, makes it a **two and a half front war**.

**Fourth**, the biggest and foremost challenge is to prepare the military for **next-generation warfare**. This includes Non-Contact Operations (Like cyber/information warfare), Low Intensity Conflict, Asymmetric Warfare and Network Centric Warfare. There are also challenges related to **raising the technology threshold** and dealing with nuances of multi domain warfare. In fact, the nation has to be prepared, as some of these threats cut across all boundaries, extending beyond the military domain.

#### What steps can be taken going ahead?

**First**, The CDS has to make an integrated capability development plan to ensure a synchronised modernisation among the services. A **National Security Strategy** will be of great help in laying down the pathways to achieving security, thus assisting in inter-services prioritisation.

**Second**, the integration between the DMA and MoD needs to be enhanced with time and more cross postings at higher levels will help in achieving the desired civil-military balance.

**Third,** There is need to incentivise the entry of private sector in defence industry and hand holding of the defence industry by respective service in trying to develop weapons and equipment. The services need to take ownership but the CDS/DMA can drive the initiatives..

**Fourth,** Greater synergy is also required with economic and diplomatic/foreign affairs. **Military to military cooperation can assist in improving bilateral relations.** It will be beneficial to grouping of nations like the QUAD and SCO.

### Conclusion

The Indian armed forces are in midst of a transition. New age technologies are changing the nature of warfare. Non-contact warfare is gaining primacy and more lethality. China intends to replace the US as the global superpower. It has reflected in China's aggression in Ladakh. It is in this backdrop that the transformation of the armed forces and the integration of the services must take place. The role played by the CDS assumes criticality in this regard.

**Syllabus:** GS III, Various Security forces and agencies and their mandate.

**Source:** [Indian Express](#), [Indian Express](#), [The Times of India](#), [IDSA](#), [PIB](#)

## Services Sector in India – Explained, pointwise

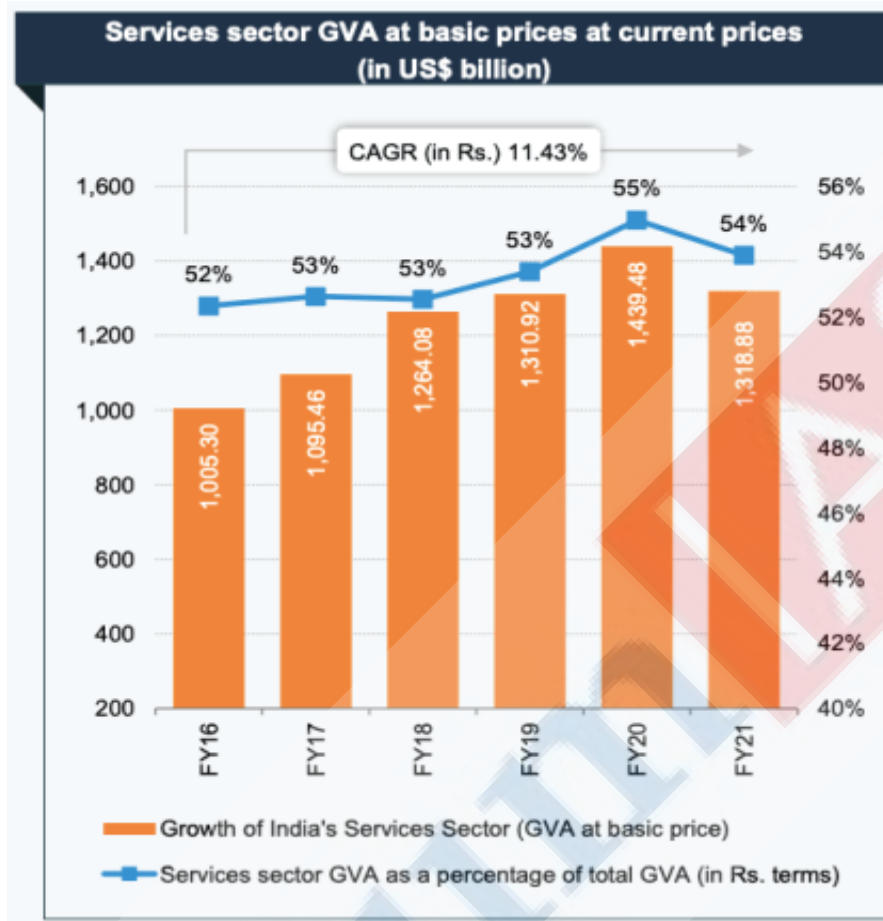
### Introduction

The services sector is the most dominant sector of Indian economy in terms of the GDP. It has also attracted significant foreign investment, and is major contributor to India's exports. It also provides employment to ~30% of India's workforce. Services sector in India covers a wide variety of activities such as trade, hotel and restaurants, transport, storage and communication, financing, insurance, real estate, business services, community, social and personal services, and services associated with construction. Services Sector is poised to play a vital role in achieving the goals of US\$ 5 trillion economy in the medium term and a developed economy status in the long term.

### What is the importance of Services Sector to India's Economy?

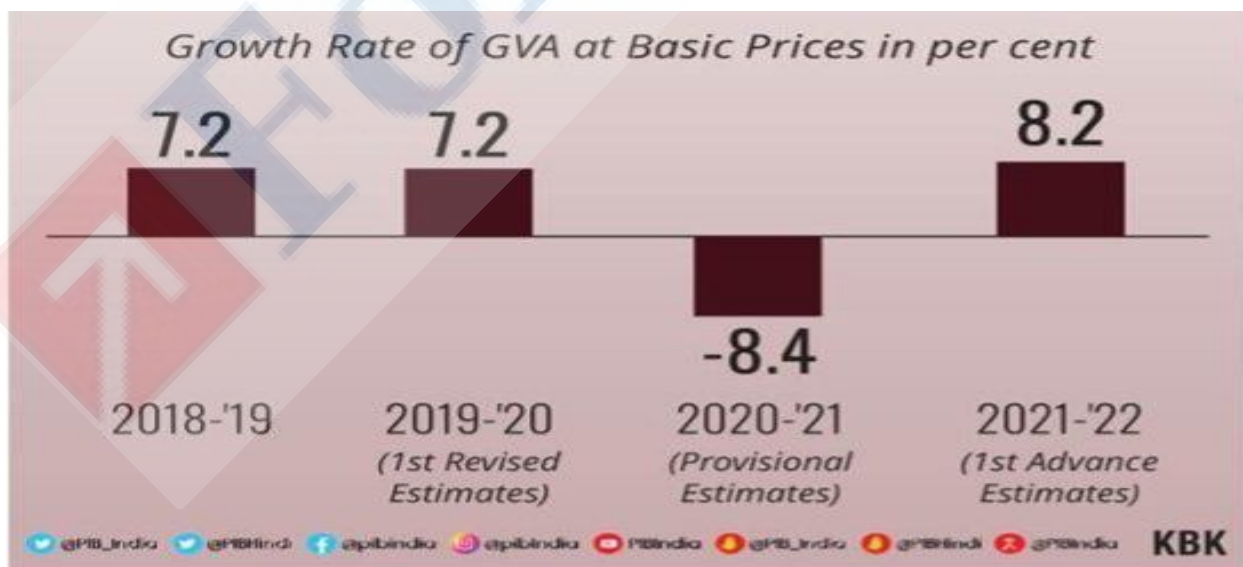
**Contribution in GVA:** The services sector of India remains the engine of growth for India's economy and contributed 53% to India's Gross Value Added at current prices in FY21-22.





Source: IBEF

The sector has consistently grown at the annual rate of ~7% in the last few year (barring 2020-21 due to pandemic).



Source: mygov.in

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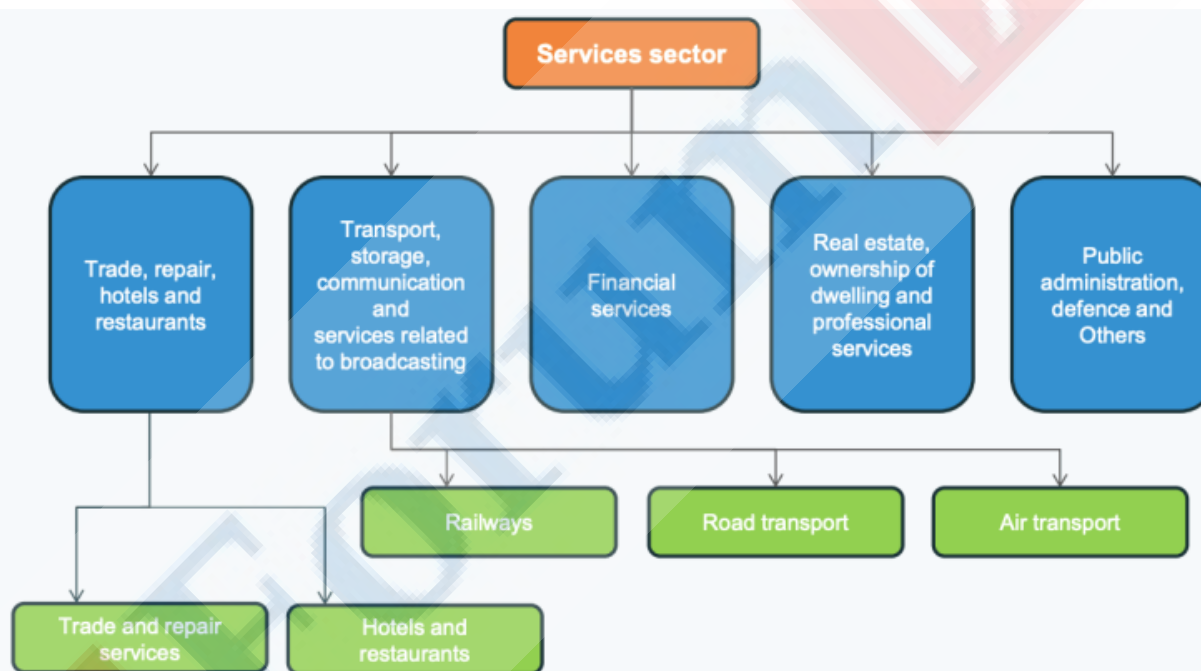


Overall, the Services Sector grew by 10.8% Year on Year (YoY) in first half (H1) 2021-22. The overall Services sector GVA is expected to grow by 8.2 per cent in 2021-22,

**Contribution to Exports:** According to the WTO, India's services export market share improved from 3% in 2010 to 3.5% in 2019 and 4% in 2020 and 2021. Despite the impact of COVID-19, there was an increase of ~25% in net exports of services in 2021-22. The Government has set a target of services export of US\$ 350 billion in FY2022-23, 37% higher than ~US\$ 255 billion exports in 2021-22.

**Helpful in FDI inflows:** The Services Sector in India was the largest recipient of FDI inflows worth US\$ 94.19 billion between April 2000-March 2022. The services category ranked 1st in FDI inflow as per data released by the Department for Promotion of Industry and Internal Trade (DPIIT).

**Contribution in Start-ups and Patents:** Start-ups in India have grown remarkably over the last six years, most of which belonged to Services Sector. More than 61,400 start-ups have been recognized in India as of January 2022.



Source: IBEF. Sub-sectors of Services Sector in India

### What are the future prospects of the Services Sector in India?

Upcoming sectors are expected to contribute to rapid expansion of services sector in India: **(a)** By 2025, healthcare industry is expected to reach US\$ 372 billion; **(b)** India's digital economy is estimated to reach US\$ 1 trillion by 2025; **(c)** By end of 2023, India's IT and business services sector is expected to reach US\$ 14.3 billion with 8% growth; **(d)** Artificial Intelligence (AI) is expected to boost India's annual growth rate by 1.3% by 2035, according to a discussion paper by Niti Aayog

The implementation of the Goods and Services Tax (GST) has created a common national market and reduced the overall tax burden on goods. It is expected to reduce costs in the long run-on

account of availability of GST input credit, which will result in the reduction in prices of services. India's software service industry is expected to reach US\$ 1 trillion by 2030.

### What factors have contributed to growth of Services Sector in India?

**Rise in demand:** The service sector bloomed when businesses were outsourced from foreign countries (especially the developed countries) to India for communication, advertisement, computer service, and banking. Because of this high demand, there was high growth in the service sector. Rise in domestic population increased demand for services. The necessity for basic services like hospitals, educational institutions, post and telegraph services, police stations, courts, transportation and banking services have increased with increase in population.

**Technology and Structural Changes:** The Indian economy has undergone several technological and structural changes. It comprises a change in economic reliance from primary to tertiary industries. Technical advancements have also led in a shift in outsourcing, leading in the expansion of the service industry. Technology also aided growth in primary and secondary sectors. The development in agriculture and industrial sector has increased the need of services such as transportation, storage and trade.

**Economic Reforms in 1991:** The growth in the service sector in India has been linked to the reforms of the 1990s. The service sector started to grow in the mid-1980s, but growth accelerated after the economic reforms in 1991. Reforms in the service sector led to privatisation, the removal of FDI restrictions, and streamlining of approval procedures among others. With economic growth and the rise in per capita income, demand changed from necessary to discretionary consumption and propelled the growth of services. Elasticity of demand for services at high incomes has contributed to the growth of the sector. As per income of the people increased the demand for services like tourism, retailing, catering and elite education also increased.

**Attractive ecosystem:** The Government's move to launch 'Start-up India' aims to create an inclusive ecosystem for entrepreneurs and push for innovation. Services are a big part of this system. The technology infrastructure required for such an ecosystem has increased the potential for the sector in India. Low setup cost make this sector an attractive investment destination. India also has a reasonably well-developed financial market.

**Skilled Manpower:** A large pool of skilled IT manpower has made India into a global outsourcing hub. It now commands a 55% share in the global sourcing market.

**Improved Productivity:** An other factor behind development of service sector is increase in productivity of labour. Due to better technology and improved labour productivity there is a increase in output of manufacturing goods and agriculture with less labour.

**Global Technology Hub:** India is the digital capabilities hub of the world, with the presence of 75% of global digital talent. In the next five years, the Ministry of Electronics and Information Technology is working to increase the contribution of the digital economy to 20% of GDP. The government is working to build cloud-based infrastructure for collaborative networks that can be used for the creation of innovative solutions by entrepreneurs and startups. In the past five years (until July 2021), India filed >4000 artificial intelligence (AI) patents.

### What are the challenges faced by the Services Sector in India?

**Lack of Government Incentives:** Many experts feel that Government have not provided incentives to the services sector on the same lines as the manufacturing sector e.g., under the export promotion scheme for manufacturing, MEIS (Merchandise Exports Incentive Scheme),

merchandise exporters benefited to the extent of over INR 40,000 crore in 2018-19. The corresponding benefit for service exporters under SEIS (Services Exports Incentive Scheme) was ~INR 4,000 (10% of merchandise exporters).

Similarly, the Government provides incentives like tax exemptions for green-field manufacturing projects. Such incentives are missing for creating infrastructure for services sectors like tourism, building of hotels, hospitals and universities etc. There is lack of PLI schemes for services sector.

**Trade Restrictions:** Services sector is hampered by restrictions placed by foreign governments like restrictions on movement of service professionals, domestic certification requirements for foreign service providers tax on offshore income of Indian service firms etc. These restrictions limit the export potential of India's Services Sector. Similarly, India also performs poorly on OECD's Services Trade Restrictiveness Index (STRI) e.g., out of 50 sample countries, only Thailand and Indonesia were more restrictive than India.

**Skilled Manpower:** While there is a large pool of talented professional, it is not enough to support the growth of the sector. Industry experts lament that many graduates lack employable skills and considerable effort is required to train them.

**Infrastructure:** Lack of infrastructure (like transportation, connectivity, communication) limit the potential of services sectors like tourism and hospitality etc.

**Access to Finance:** Many small services firms lack access to affordable finance to scale up their operations. Lack of finance hampers access to technology, up-skilling of people, up-gradation of systems and processes that impacts their competitiveness.

#### How can the challenges be addressed?

**First**, the Services Sector in India requires structured policy interventions by the Government. The Government should launch a 'Services from India' initiative on the lines of Make in India. Government should consider greater tax incentives, and PLI like scheme for Services Sector to support an increase in services exports.

**Second**, Services need to be accorded a greater priority in trade negotiations. Focus of India's FTAs has been on merchandise trade. Although the trend is changing, the India-Australia ECTA has several measures to facilitate India's service exports (like mutual recognition of professional services, avoiding double taxation on offshore income of Indian service firms in Australia etc.). This should be ensured in India's upcoming FTAs.

**Third**, India should also push for setting standards for global data governance. Resolving data and privacy barriers will provide a big impetus to outsourcing of consultation services. India's services sector can be the biggest beneficiary.

**Fourth**, IT Sector contributes ~55% of total services sector. The Government should make a comprehensive roadmap for further diversification of the services sector. Sub-Sectors like Healthcare, Tourism (including medical tourism), Banking/Financial Services, Telecommunication need to be supported for further expansion.

#### Conclusion

The service sector is India's largest and fastest expanding industry. It has the highest labour productivity and is expected to increase rapidly in the future. The proportion of services in overall commerce in India is greater than the worldwide average. By increasing investment, creating jobs and human capital, and improving infrastructure, the service sector will be able to contribute to

inclusive growth. It is critical for a developing country like India, which has a huge, young population, to create quality jobs and climb up the value chain. The Government must provide a stable and transparent policy environment along with incentives on the lines of manufacturing sector to further enhance the contribution of services sector in India.

**Syllabus:** GS III, Indian Economy and issues related to growth and development,

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

### **Circular Economy: Meaning, Benefits and Opportunities – Explained, pointwise**

#### **Introduction**

Technology has fundamentally altered the ways of working and living in the modern civilisation. The economic growth models are extremely resource intensive. The ecological footprint has risen sharply in the last few decades. The pace of consumption of resources has exceeded the earth's bio-capacity to regenerate the resources. Environmentalists are calling for a fundamental readjustment in the production and consumption models. In this context, Circular Economy can ensure a sustainable utilization of resources. Adoption of Circular Economy is even more crucial for India. With a very high population base, and a significant proportion of population with low living standard, sustainable growth is imperative based on optimal resource utilization. With a growing population, rapid urbanization, climate change and environmental pollution, India must move towards a circular economy.

#### **What is the meaning of Circular Economy?**

The circular economy is a model of production and consumption, which involves **sharing, leasing, reusing, repairing, refurbishing and recycling existing materials and products as long as possible**. In this way, the life cycle of products is extended. This is a departure from the traditional, **linear economic** model, which is based on a **take-make-consume-waste pattern**. This model relies on large quantities of cheap, easily accessible materials and energy.





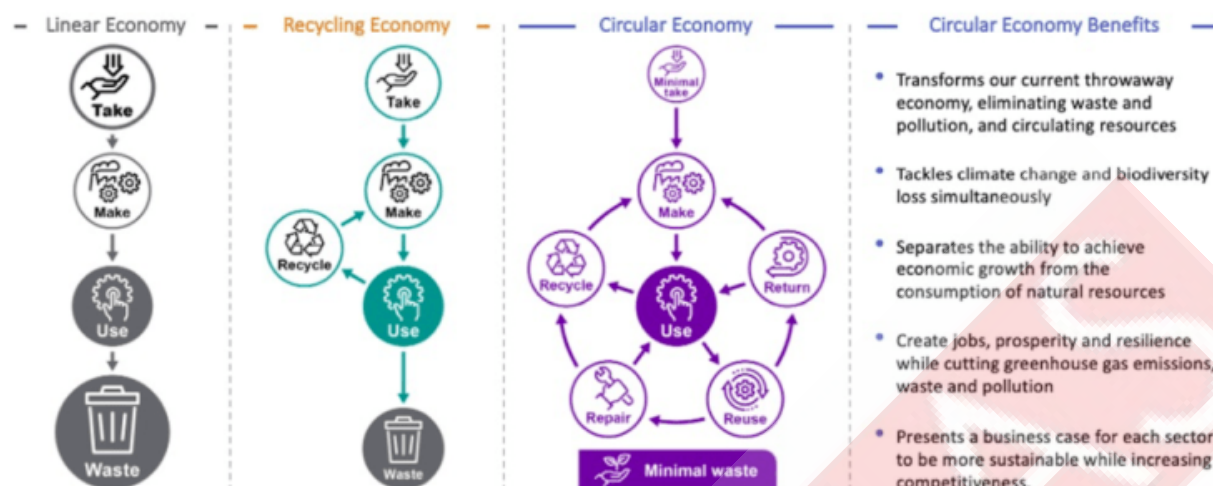
Source: European Parliament

Circular Economy is based on three principles, driven by design: **(a)** Eliminate waste and pollution; **(b)** Circulate products and materials (at their highest value); **(c)** Regenerate nature.

In a circular economy, waste is minimized. Products and raw materials are **designed to be reused** as long and intensive as possible over and over again. Waste is the new raw material.

Circular Economy is not just about recycling waste materials. Recycling begins at the end of the product's lifecycle, when it is thrown away. The circular economy goes right back to the beginning to **prevent waste and pollution from being created in the first place**. It is based on the premises that the environmental challenges have already reached a stage where even recycling alone won't be enough to address them. Hence, **Circular Economy is distinct from Recycling Economy model**. One example of Circular Economy is the use of microbial biodegradable polymers produced from agro-food waste residues for packaging of food items. This will **eliminate use of plastics** and the need of recycling. Waste generation is minimal in Circular Economy.





Source: World Economic Forum

According to the Circularity Gap Report 2020, the global economy is only 8.6% circular. This means that over 90% of the resources that enter the economy (100 billion tonnes per year) are wasted.

### What are the benefits of Circular Economy?

**Protection of the environment:** Circular economy benefits the environment by consuming fewer natural resources, and thus reduces ecological footprint. It helps lower the emissions and produces less polluting waste. It helps in preservation of biodiversity, as there is less pressure on natural resources like forests.

**Benefits for the local economy:** There is emphasis on promoting production models that rely on reuse of nearby waste as raw material.

**Drives employment growth:** Circular Economy fosters the development of a new, more inventive, and competitive industrial model, resulting in higher economic growth and more employment opportunities.

**Promotes resource independence:** Reusing local resources can reduce reliance on imported raw materials. It can help in achieving self-sufficiency.

### What are the needs and opportunities for Circular Economy in India?

Need

**Pressure of Population:** India will be most populous nation soon. According to a World Bank Report, there are more than 190 million people in India living on less than US\$ 2.15 per day (poverty line). Lifting them out of poverty will put a massive strain on natural resources.

**Limited Resources:** India's resource base is limited with only 2% of world's landmass and 4% of freshwater resources, while accounting for ~18% world's population. Linear Economy model will constrain India's manufacturing.

**Environmental Concerns:** According to the Global Footprint Network, India's Ecological Footprint has been rising consistently. Consequently India's Biocapacity deficit has increased from -0.1 gha in 1961 to -0.8 gha in 2018. Moreover, as resource intensity of India's economy increases, the emissions are also rising.

## INDIA (2018)

GDP PER PERSON  
\$2086POPULATION  
1,352,640,000Biocapacity  
per person

0.4

gha

Ecological Footprint  
per person

1.2

gha

BIOCAPACITY  
RESERVE(+)/DEFICIT(-)

-0.8

gha

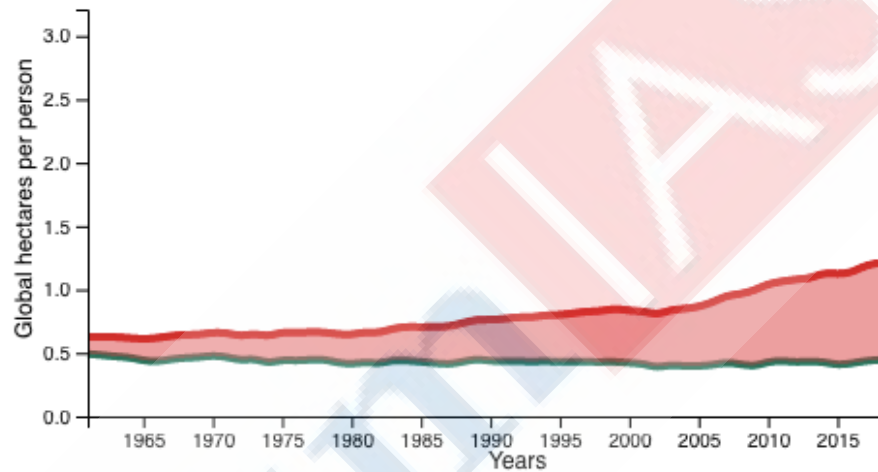
Ecological Footprint and

Biocapacity

From 1961 to 2018

Ecological  
Footprint per  
personBiocapacity per  
person

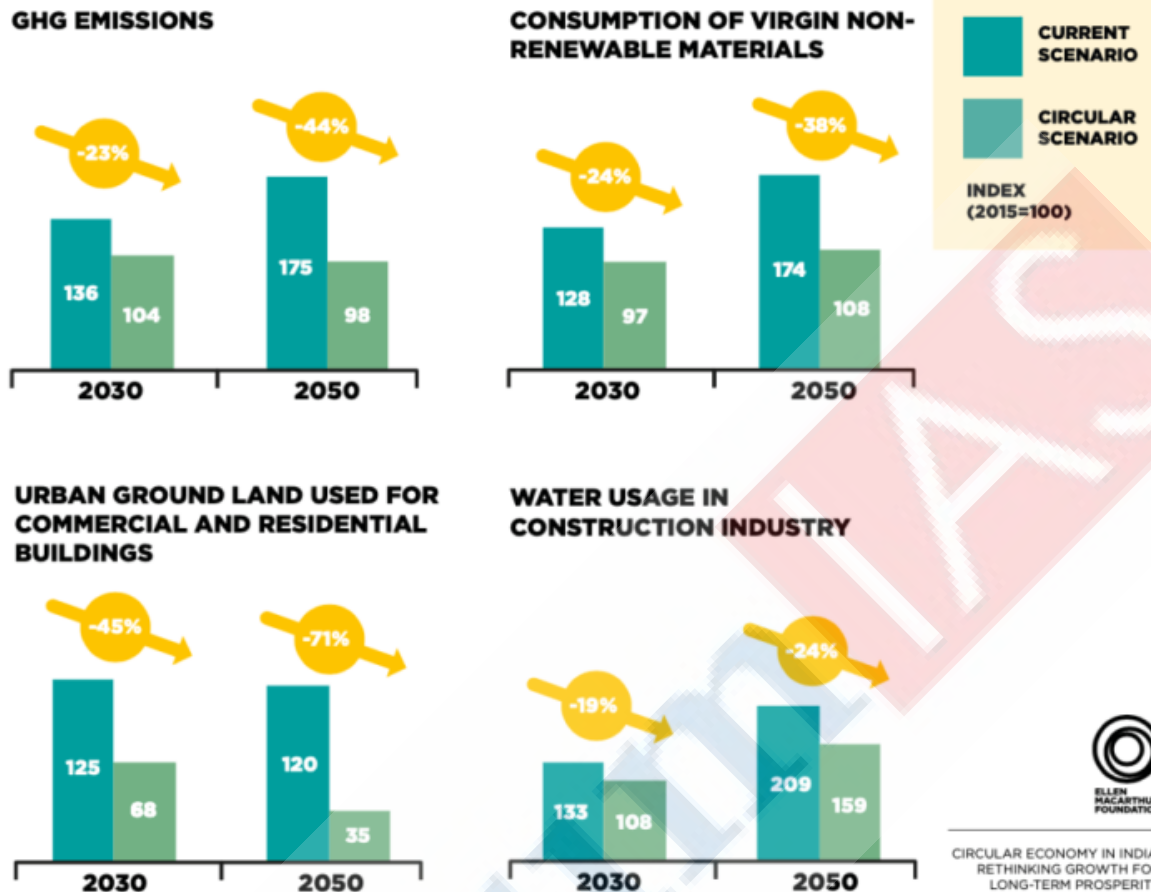
Learn More



Data Sources: [National Footprint and Biocapacity Accounts 2022 edition \(Data Year 2018\)](#); GDP, World Development Indicators, The World Bank 2020; Population, U.N. Food and Agriculture Organization.

Source: [Global Footprint Network](#)

A circular economy development path could significantly mitigate negative environmental externalities. For example, greenhouse gas (GHG) emissions could be 23% lower in 2030 and 44% lower in 2050 compared with the current development scenario.



Source: Ellen MacArthur Foundation, *Circular Economy in India: Rethinking Growth for Long-term Prosperity*

**Resource Dependence:** Finite supplies also means India is dependent on other countries for raw materials. Resource dependence increases imports and raises current account deficit. It also puts a strain on Government finances.

**Economic Benefits:** According to EM Foundation, a circular economy development path in India could create annual value of ₹14 lakh crore (US\$ 218 billion) in 2030 and ₹40 lakh crore (US\$ 624 billion) in 2050 compared with the current development scenario. By adopting circular economy approaches, businesses could achieve **material cost savings** and **increase their profits**.

**Technology Hub:** Leveraging digital technology to enable the circular economy could reinforce India's position as a hub for technology and innovation.

### Opportunities

Sectors such as food, agriculture, fashion, construction, mobility, and rare earth materials are expected to provide the biggest opportunities for circular economy in India.

**Construction:** India is urbanising at an unprecedented rate, against a backdrop of resource constraints. An estimated 700-900 million square metres of new commercial and residential space a year needs to be built to cope with the increasing demand. Circular Economy Principles

can be incorporated into design of the infrastructure (like buildings, water, sanitation, waste treatment infrastructure) to create more effective material cycles. More systemic planning of city spaces, integrated with circular mobility solutions, can contribute to higher air quality, lower congestion, and reduced urban sprawl.

**Food and Agriculture:** (a) Combining **local knowledge** and **traditional methods** (like working with a large variety of species) with **modern technology** (like precision farming, and digitally enabled asset- and knowledge-sharing systems) could **increase yield** while significantly **decreasing requirements for resources** such as water, synthetic fertilisers, and pesticides; (b) Reducing food waste across the supply chain could make the Indian food system even more effective. This would require **optimising production** and **digitising food supply chains** to match supply and demand more easily; (c) **Urban and peri-urban farming** can bring food production closer to consumption, reducing food waste and transportation requirements.

**Mobility:** Demand for personal mobility in India is expected to double or even triple by 2030. Circular economy principles can contribute to a mobility system that would meet the growing needs of the Indian population, especially in cities, while limiting negative externalities, such as GHG emissions, congestion, and pollution. (a) An **on-demand mobility system**, embracing **vehicle-sharing trends** (like bike, car sharing) and **leveraging digital innovation** (App similar to cab-hailing Apps that can link users for car sharing), could provide efficient and effective transportation with **high vehicle usage and occupancy rates**; (b) **Vehicle as a service model** can provide convenient last-mile connectivity and can create convenient door-to-door journeys; (c) Taking reparability, remanufacturing, and recycling into account in vehicle design can reduce the need for materials and energy. Building vehicles that rely on zero-emission propulsion technology could reduce negative externalities.

#### **What steps have been taken by the Government to promote Circular Economy?**

The Government of India has been actively formulating policies and promoting projects to drive the country towards a circular economy.

**First,** The Government has notified various rules, such as the Plastic Waste Management Rules, e-Waste Management Rules, Construction and Demolition Waste Management Rules, Metals Recycling Policy, etc. The Rules are geared towards reducing waste generation and maximizing recycling of waste.

**Second,** NITI Aayog has undertaken several initiatives to address the challenges in the **utilization of waste as resource** and to evolve a perspective on the recycling industry in India. Progress has been made in promoting the **usage of fly ash and slag produced in the steel industry in other sectors**.

**Third,** NITI Aayog has organized international conference on 'Sustainable Growth through National Recycling' and has prepared strategy papers for resources efficiency in sectors like Steel, Aluminium, Construction and Demolition and e-waste.

**Fourth,** To expedite the transition of the country from a linear to a circular economy, 11 committees have been formed for 11 focus areas. The committees will prepare comprehensive action plans for transitioning from a linear to a circular economy and monitor their effective implementation.



Focus Area	Concerned Line Ministry
Municipal Solid Waste and Liquid Waste	Ministry of Housing and Urban Affairs
Scrap Metal (Ferrous and Non-Ferrous)	Ministry of Steel
Electronic Waste	Ministry of Electronics and Information Technology
Lithium Ion (Li-ion) Batteries	NITI Aayog
Solar Panels	MNRE
Gypsum	Department for Promotion of Industry and Internal Trade
Toxic and Hazardous Industrial Waste	Department of Chemicals and Petrochemicals
Used Oil Waste	Ministry of Petroleum and Natural Gas
Agriculture Waste	Ministry of Agriculture and Farmers' Welfare
Tyre and Rubber Recycling	Department for Promotion of Industry and Internal Trade
End-of-life Vehicles (ELVs)	Ministry of Road Transport and Highways

### What can be the approach going ahead?

**First,** The Government can incentivize India's production systems to adopt practices around the principles of circular economy so that they not only reduce resource dependency but also gain competitiveness. This requires a close collaboration between the Government and industry.

**Second,** Businesses can integrate circular economy principles into their strategy and processes. They can train current and prospective employees on circular product design and new business models. They can also collaborate with other businesses, policymakers, and the informal economy to drive the change.

**Third,** Circular and local models have proven to be more resilient and efficient in addressing the needs of the masses. The Government should encourage local alternatives to enable local supply chains.

**Fourth,** so far the focus of Government's effort has been more on recycling. Now the focus should shift up the value chain to include principles of circular economy in the design and manufacturing stages. The effort should be geared towards creating enabling regulatory frameworks and removing policy barriers.

**Fifth,** The Government can also support circular models through public procurement and infrastructure. This could help kick-start those models to stimulate their wider adoption in the market.

**Sixth,** Circular economy principles should be embedded into education. Bringing circular economy principles into education, from school through to professional development, can equip learners with the right systems thinking skills and mindsets to become active shapers of a circular economy.

### Conclusion

As India embarks on its path to become a developed economy, adopting a Circular Economy model will ensure that this growth is sustainable with minimal impact on environment.

**Syllabus:** GS III, Conservation, Environment Pollution and Degradation.

**Source:** [Economic Times](#), [Mint](#), [PIB](#), [EM Foundation](#)

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## India's Overseas Development Cooperation – Explained, pointwise

### Introduction

As India is developing and modernising, the Government of India is improving its efforts to help the poorer nations across the world, both towards ending poverty and improving living standards. India's role in international overseas development cooperation and partnership has undergone significant transformation over the past years. India is now becoming a net donor of development cooperation/assistance from being a chronic beneficiary. However, India's overseas development assistance and cooperation suffer from various challenges, which must be rectified to enhance its effectiveness.

### How has India's Overseas Development Cooperation evolved over time?

India's overseas development cooperation began right after the independence. India found its development partnership approach through the ethos of the national movement. Colonization, Apartheid and underdevelopment were among the major challenges in the 1950s. Despite its resource constraints, India offered its development experience to countries which wished to engage.

In 1949, India began with cooperative efforts for Burma and Indonesia, through technical cooperation. This was successful, and became the basis for expansion to several initiatives in Asia and Africa. India's overseas development cooperation remained **unconditional** and **responsive to partner priorities**. It emphasised capacity-building, particularly the development of human resources e.g., India established the **Imperial Military Academy in Harar, Ethiopia in 1958**. It trained the military officers of several African countries, and showed an early regional approach.

To undertake capacity-building programmes, India launched the **Indian Technical and Economic Cooperation (ITEC) Programme in 1964**. ITEC offered India's institutions and experience for sharing. It covered both civilian and military aspects. ITEC initially covered Asian countries, then expanded to Africa and now covers over 150 countries, including in Central Asia, Latin America, the Caribbean, and the South Pacific. The ITEC programme has annual budget of ~INR 200 crores.

Over the years, India has contributed to plurilateral funds for achieving these development goals including through the **India-Brazil-South Africa, (IBSA) Fund** and **India-UN Development Partnership**.

With the faster pace of development post 1991-reforms, India's overseas development assistance (ODA) has also picked up pace.

### What is the current status of India's Overseas Development Cooperation/Partnerships?

#### Funds

According to the [dashboard](#) provided by the Ministry of External Affairs (MEA), between 2008-2022 (till July) India has allocated funds worth **INR 85,059 Crore** as **grants and loans**. Of this, INR 70,221 Crore has been disbursed. India's Grants and Loans are **mostly limited to neighbourhood nations**: Afghanistan, Bangladesh, Bhutan, Nepal, Maldives, Mauritius, Mongolia, Myanmar, Seychelles and Sri Lanka. Bhutan has been by far the biggest recipient of India's overseas development assistance (ODA) through loans and grants, receiving ~54% (INR 46,196 Crore) of the allocated funds.

In addition, the Government has also provided **Lines of Credit (LoCs)** worth **US\$ 22.8 billion** between 2014-2022 (till September), with record US\$ 7.2 billion worth of LoCs extended in 2016-17. In contrast to grants/loans, India's overseas development assistance (ODA) through LoCs is **more diverse with countries in Africa and Caribbean as the major recipients**. According to information available in MEA's dashboard, India has extended LoCs to 66 nations between 2014-22. According to data available with EXIM Bank, India has provided LoCs worth US\$ 28 billion between 2002-03 and 2018-19.

### Instruments

India's overseas development assistance (ODA) is based on a framework with 4 broad elements: **(a) Lines of Credit (LOCs)** under the **Indian Development and Economic Assistance Scheme (IDEAS)**; **(b) Grants and Loans**; **(c) Capacity-building training programmes** especially under the **Indian Technical and Economic Cooperation (ITEC)** programme; **(d) Bilateral grant assistance projects**. All overseas partnerships contain some combination of the above, e.g., In Mozambique, support for solar panel production was through three elements: capacity building of scientists through training at Central Electronics, a line of credit for infrastructure support and a grant element.

Besides bilateral projects, the Government has recently taken steps toward **triangular cooperation** with few developed nations and the UN agencies. Agreements/Memorandums of Understanding (MoUs) have been signed with the **United States, the European Union, Japan, World Food Programme, the UNDP**, etc. Some triangular projects are already being implemented in Afghanistan and Africa.

Depending on the priorities of partner countries, India's development cooperation ranges from commerce to culture, energy to engineering, health to housing, IT to infrastructure, sports to science, disaster relief and humanitarian assistance to restoration and preservation of cultural and heritage assets.

### Institutional Arrangement

India launched the **India Aid Mission (IAM)** in Nepal in 1952, before the US had established the US Agency for International Development (USAID, 1961). It was later rechristened as the Indian Cooperation Mission (ICM).

**India Development Initiative (IDI)** was launched in 2003. Subsequently, the **Indian Development and Economic Assistance Scheme (IDEAS)** was launched in 2005 for managing credit lines. In 2007, the IDI was suspended. A new India International Development Cooperation Agency (IIDCA) was announced to be set up but it was never established.

A **Development Partnership Administration (DPA)** was established within the Ministry of External Affairs in 2012. It has various divisions that handle different projects and regions.

## Divisions of the DPA

The DPA has three Divisions: DPA – I, DPA – II and DPA – III. They handle different projects.

### DPA-I

- All Lines of Credit (LoC), grant projects in the East, South and West African regions.
- Grant assistance projects in Bangladesh and the Sri Lanka Housing project.

### DPA-II

- Over 8500 civilian and 1500 defence training slots allocated under **Indian Technical and Economic Cooperation Programme** and **Special Commonwealth Assistance for Africa Programme** to 161 partner countries. 47 empanelled institutions conduct around 280 courses annually.
- Grant assistance projects in Southeast Asia, Central Asia, West Asia and in Latin American countries.
- Humanitarian and disaster relief.

### DPA – III

- Implementation of grant assistance projects in Afghanistan, Maldives, Myanmar, Nepal and Sri Lanka

Source: Ministry of External Affairs

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## What are the issues in India's Overseas Development Cooperation?

**Institutional Arrangement:** India's overseas development assistance (ODA) programme lacks proper institutional arrangement. The divisions of DPA lack proper structure with overlapping regional and functional jurisdictions. Ideally, divisions could have been made on a regional basis (like Africa, East Asia, Latin America etc.) or functional basis (handling LoCs, Grants, Capacity building programmes).

**Institutional Capabilities:** The DPA also struggles with lack of capabilities to implement the projects. Project implementation in foreign nations faces several challenges like statutory approvals and clearances. There is a **need for constant monitoring and coordination** with agencies of foreign countries. Similarly, there are internal constraints like ensuring the adequacy and predictability of budget allocations, approval/appraisal procedures with Ministry of Finance, selecting competitive firms from India to undertake projects abroad etc. Addressing these challenges require specialised skills. DPA is lacking in such capacity when compared to other agencies like the USAID.

**Transparency:** There is lack of transparency and visibility in terms of allocations and outcomes. There is no central database that can provide a comprehensive visibility on all the grants/LoCs extended, projects undertaken or the capabilities developed abroad. The lack of information in public domain limits review and establishing efficacy of the India's cooperation efforts. This, in turn, undermines the accountability of the Government's initiatives.

**Approach:** There is no stated policy on India's overseas development cooperation. This leads to lack of consistency in methods of assistance/cooperation, selection of projects, or allocation of funds. This is in contrast to Japan's ODA or China's BRI.

## What should be the approach going ahead?

**Policy and Vision:** Foreign Policy experts suggest that the Government must bring out a policy on India's Overseas Development Cooperation, stating its vision, objectives, principles and goals. This will replace the current ad-hoc approach and make India's cooperation more objective. Some experts even suggest enacting an **India Overseas Development Cooperation Act**, to enable



Parliament's oversight over the cooperation programme. This is similar to **UK's International Development Act (2002)** which detailed the country's objective to contribute towards global poverty reduction. The UK was one of the first countries to provide aid without being tied to any domestic policy considerations, making the 2002 Act an effective and successful framework.

## Policy Framework for India's Overseas Development Cooperation

### Vision for India's Development Cooperation

- **Non-Conditionality:** The development partnerships must be based on mutually agreed terms
- **Promoting a 'Partnership among Equals':** All development partnerships must be on an equal footing, without domination or undue influence.
- **Mutual Accountability:** Both India and development partners must be accountable to each other.

### Operating Principles

- Mutual Benefit.
- Transparency and Fiscal Integrity.
- Accountability.
- Sustainability.
- Inclusiveness.

### Goals and Development Priorities

- Capacity Development and Technology Transfer.
- Gender Empowerment and SDGs.

Source: Towards a White Paper on Policy: Jindal Journal of Public Policy

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**Autonomous Body:** There is a need to establish an autonomous agency to undertake the cooperation activities abroad. DPA in its current form lacks adequate authoritative powers. The **US AID is an independent agency** of the US Federal Government established under the the **Foreign Assistance Act** (1961). The DPA can be made a more autonomous entity empowered to address long-term and short-term strategies. The Brazilian Cooperation Agency, affiliated to the country's foreign ministry, has a mandate to **negotiate, coordinate, implement and monitor technical cooperation projects and programmes**. Similar powers should be accorded to the DPA.

**Enhance Visibility:** There is a need to enhance visibility on the all the projects undertaken with the corresponding spending. A comprehensive database should be developed. The present dashboard only lists year-wise allocation/disbursal of funds, but provides no details of projects. Proper visibility will enable analysis, periodic review and revision of India's international development cooperation policy.

**Widen Cooperation:** The Government can also move beyond government-to-government negotiations and agreements to include more plural and diverse stakeholders like representatives from the private sector, academia, philanthropic institutions and civil society. Collaborations with the private sector and civil society can be achieved by engaging with existing platforms such as the **Forum for Indian Development Cooperation (FIDC)** (an initiative by the DPA, academia and civil society organisations, and launched in 2013) that has been working to raise awareness on various dimensions of development cooperation policies through public engagement at the domestic level.



**Sharing Domestic Capabilities:** Going forward, India should actively promote learnings from its domestic initiatives like Aadhar, JAM Trinity, Ayushman Bharat, CoWin, UPI etc. in other developing countries and help them achieve development outcomes.

### Conclusion

India's overseas development cooperation and assistance initiatives have enabled India to win goodwill, especially among developing countries. India's programmes have been successful because of the equal involvement of the partners as well as non-conditionality of India's cooperation. Now the Government must focus on reforms to make the programme more structured. This will enable India to play a more constructive role in reshaping the global order which is going through a phase of uncertainty.

**Syllabus:** GS II, India and its neighbourhood relations.

**Source:** [Indian Express](#), [ORF](#), [Money Control](#), [Ministry of External Affairs](#), [Indian Council on Global Relations](#)

## India's Approach to Multilateralism – Explained, pointwise

### Introduction

The External Affairs Minister (EAM) of India visited the United Nations (UN) for the 77th session of the United Nations General Assembly (UNGA) in September 2022. At the session, the EAM reiterated the need for '**reformed multilateralism**' through which the United Nations Security Council should reform itself into a more inclusive organisation. In 2020, The Prime Minister had first called for 'reformed multilateralism' that "...reflects today's realities, addresses contemporary challenges...". The international geopolitics is in a state of flux. The role of global multilateral institutions amidst the US-China struggle for global supremacy, Russia-Ukraine conflict, COVID-19 pandemic among others has led to a crisis of legitimacy. India's approach to multilateralism has been to call for reforms of these institutions as well as to engage with all stakeholders to secure India's economic and geopolitical interests.

### What is the meaning of Multilateralism?

According to the UN, it is difficult to capture the nature of multilateralism through a single definition. Multilateralism means a **form of cooperation between at least three States**. It is often defined in opposition to bilateralism and unilateralism.

However, Multilateralism is not simply a question of the number of actors involved. It involves adherence to a common goal based on the respect of a shared system of norms and values. It is based on founding principles such as consultation, inclusion and solidarity. Multilateralism is determined by **collectively developed rules** that ensure sustainable and effective cooperation. It guarantees all States the same rights and obligations. Multilateralism is therefore both a method of cooperation and a form of organization of the international system.

### What has been historic evolution of India's approach to Multilateralism?

Cold War Era

India's approach to multilateralism is characterised by the **Policy of Non-alignment** from the Cold-War era. At the time of Independence, the world was caught in Cold-war between the West and the Soviet-bloc. India saw merit in joining a number of multilateral groups like the G77, Non-Aligned Movement (NAM), Bandung Asian-African Conference of 1955 etc. India understood

the strength of numbers. This method (as collective like NAM) would allow the voice of poor nations to be heard at the international forum. India's approach to multilateralism was a way of magnifying its influence in international affairs until it could exert influence more materially. India didn't join ASEAN (when offered membership) because India considered that ASEAN was created under American control.

### Post Cold-War

After the Cold War and post-globalization, regional groupings expanded because nations, including India, **needed interdependencies for prosperity and security**. With the opening of India's economy, India realized the necessity of regional and multilateral organizations for its growth and stability. India actively pursued memberships and engagements with the forums that were considered crucial to secure India's interests. India has joined diverse groupings like **G20, Quad, SCO, BRICS, RIC** (Russia-India-China), **BIMSTEC** etc. India actively pursued for memberships of security related groups like **Missile Technology Control Regime** (MTCR, got membership in 2016) and the Nuclear Suppliers Group (NSG). According to an estimate, India is a member of more than 2000 international organizations out of 6000 organizations in the world active today.

### What are the perceptions about India's Approach to Multilateralism?

Many nations, especially in the West, consider as a 'Naysayer' when it comes to negotiating international rules and working together on issues like climate change, nuclear proliferation, trade, and other similar issues. For instance, **India has been blamed for breakdown of Doha Round of trade negotiations at the WTO in 2008**. India is also blamed for lack of consensus on public stockholding of food grains and the subsidies at the WTO. India's withdrawal from the Regional Comprehensive Economic Partnership (RCEP) in 2019 further crystallized its image of preferring bilateral arrangements over multilateral mechanisms when it comes to trade. More recently, India was blamed at the Glasgow Climate Summit (CoP 26) for **diluting the global pledge to reduce use of coal by replacing 'phase out' of coal with 'phase down'**.

However, many foreign policy experts argue that India's efforts to secure its national interests shouldn't be seen as its opposition to rules and principles of multilateralism. Multilateralism prioritises cooperation and mutual respect over the interests of individual states. But all the nations act to protect their own interests while negotiating, and give concessions on cooperation as long as their interests are secured. India's follows the same approach.

### What are the present day challenges to global order and Multilateralism?

Recent geopolitical developments have put the global order in a phase of uncertainty.

**First**, the COVID-19 epidemic revealed the institutional limitation of the bodies like United Nations/WHO/WTO. Countries shut down their borders and the supply networks collapsed. There was a severe shortage of vaccines. India's efforts for TRIPS waiver for vaccines were shot down by the US and the EU.

**Second**, the UN has proved to be ineffective in reigning-in the Russia-Ukraine war. Many UN resolutions have been blocked by Russia's veto. Nor has the UN been able to limit Russia's actions in Ukraine.

**Third**, The growth of China and its belligerence and aggressiveness in the South China Sea, the Indo-Pacific, and increasingly across the world have highlighted the limitations of United

Nations-style multilateralism. China has been using its strength to create its own global structure, and is focused on reducing the influence of the West in a new global order.

### What has been India's approach to Multilateralism?

India's multilateral actions have been based on pragmatism since the 1980s. It has worked to **advance and protect its core interests through multilateral engagement**, to resist or ignore international rules when necessary, and to be open and willing to shape and ratify such rules where national and global interests align.

India has taken principled stands on various issues like nuclear proliferation and weapons control, international trade, climate change, and the United Nations Security Council.

**Read More:** [United Nations Security Council \(UNSC\) Reforms – Explained, pointwise](#)

India's engagement with multilateral institutions and its interventions have evolved with changing interests e.g., during the initial years after independence, India's focus was more on **decolonization and the desire for autonomy in foreign policy** and development. But over the years, these ideas have given way to positions that are influenced by rational considerations. **Economic interests** came into play and become more salient as India's engagement with the international economy grew. India **actively pushed GATT/World Trade Organization** to liberalize tariffs in industries like services and agriculture where Indian firms have a competitive advantage. At the World Health Organization, India endorsed a strong set of rules to curb rising tobacco use worldwide, having seen the raging effects of tobacco consumption at home.

India's trade approach marries a healthy mix of **pursuing regional and multilateral arrangements**. India has actively participated in both the WTO and the regional trade agreements. For example, after the failure of the Doha Round in 2008, India turned to regional trade deals to help its economy grow. India's free trade agreements with the Association of Southeast Asian Nations (ASEAN) and the signing of the South Asian Free Trade Agreement (SAFTA) indicate a firm commitment to regional frameworks. Hence, a significant characteristic of India's trade policy is following a multi-track approach that **favours both regionalism and multilateralism**.

In its efforts to secure its interests, India has continued to engage with countries in the opposing blocs, for instance, India is member of both Quad (with Australia, Japan and the US) and the SCO (with Russia and China). India uses SCO to secure its strategic interests in Central Asia.

**Read More:** [Shanghai Cooperation Organization \(SCO\) – Explained, pointwise](#)

The Quadrilateral Security Dialogue (Quad) is based on common political principles as democracies and a shared interest of a belligerent China. Moreover, India has used bilateral and trilateral frameworks, especially joint naval exercises, with countries like the US, Australia, Singapore, and France to send strategic messages. With these drills, India has shown readiness to respond to China's coercive actions in the maritime domain. India will likely rely on bilateral defence relationships with the West (US, France etc.) to pursue its key security objectives in the maritime governance across the Indian ocean.

### Conclusion

India's present day diplomacy is driven by actively pursuing India's economic and security interests. India's multilateral approach is neither obstructionist nor motivated by a desire to hamper global initiatives. With continued economic progress, India's interests and stakes in the



international system will expand. Realizing this India is calling for a rules based global order with reforms of the multilateral institutions.

**Syllabus:** GS II, India and its neighbourhood relations.

**Source:** [The Hindu](#), [Mint](#), [United Nations Office](#), [ORF](#)

### **CSR, Corporate Social Responsibility in India: Provisions, Status and Challenges – Explained, pointwise**

#### **Introduction**

India is one of the first country in the world to impose a statutory obligation of Corporate Social Responsibility (CSR) for corporations through the Companies Act, 2013. India is perhaps the only country that makes both the spending and reporting of CSR obligations mandatory. The Government has also made it clear that CSR spending is not mere charity or donations without any benefits. The Government has also made a conscious attempt to keep the CSR legislation aligned with India's commitment to the Sustainable Development Goals (SDGs). The CSR landscape in India has expanded significantly; more and more corporations are now engaging constructively realizing their social obligations. Yet, there are several challenges which need to be addressed, to further enhance the efficacy of CSR activities in ensuring sustainable and inclusive development.

#### **What is the meaning of CSR?**

According to the United Nations Industrial Development Organization (UNIDO), Corporate Social Responsibility is a management concept whereby companies **integrate social and environmental concerns in their business operations** and interactions with their stakeholders. CSR is a way of running the businesses by which corporate houses **contribute towards social good**. CSR is based on **sense of responsibility** of the companies towards the community and the environment in which they operate.

It is **closely linked to sustainability** (creating economic, social, and environmental value) and ESG (Environmental, Social, and Governance). CSR is generally understood as being the way through which a company achieves a **balance of economic, environmental and social imperatives** ('Triple-Bottom-Line- Approach'), while at the same time addressing the expectations of shareholders and stakeholders.

#### **Evolution of CSR**

In the 1950s, CSR was understood to be an obligation toward society. By the 1960s, the concept shifted to being viewed as a connection between corporate houses and society. During the decades spanning from the 1970s to the 1990s, definitions of CSR expanded to encompass a number of other aspects, including stakeholders, ethics, voluntariness, philanthropy, environmental stewardship, and the **Triple Bottom Line i.e. people, planet and profit**. The dimensions of corporate social responsibility in the 21st century have a much broader scope; it also includes the improvement of the quality of life of citizens; human and labour rights; environmental concerns; issues relating to corruption; issues relating to transparency and accountability.



Phases of Development of CSR		
Phase-1	Phase-2	Phase-3
Social Responsibility is considered as Corporate obligation.	Social Responsibility is connected to the core business.	Social Responsibility is not only connected to core business but it is also proactive in nature.
Organization acknowledges responsibility in certain areas towards legal and traditional stakeholders.	Organization acknowledges responsibility towards all the direct stakeholders.	Organization acknowledges responsibility towards all the stakeholders.
Emphasis is on generating policy statement.	Policies are well written and documented.	Policies are well written, embedded and translated across the organizations.
As the level of commitment is very low social activities are limited and ad-hoc in nature.	Social activities are well planned and strategic in nature.	Social activities are undertaken on an ongoing basis.
Organizations in this phase have high concern for profits and low concern for society.	Organizations concern for profits as well as society is high.	High concern for profits as well as society.

### What is the CSR framework in India?

**Legal Basis:** The Corporate Social Responsibility concept in India is governed by **Section 135 and Schedule VII of the Companies Act, 2013** and **Companies (CSR Policy) Rules, 2014**. The Rules provide the criteria for assessing the CSR eligibility of a company, Implementation and Reporting of their CSR Policies etc. The Act and the Rules have created one of the most elaborate CSR mechanism and implementation strategy.

**Criteria:** The Companies Act has made it mandatory for certain corporations to undertake CSR activities. The Act requires companies with: **(a)** a net worth of INR 5 billion (500 crore) or more or; **(b)** An annual turnover of INR 10 billion (1000 crore) or more or; **(c)** Net profit of INR 50 million (5 crore) or more, to **spend 2% of their average net profits of 3 years on CSR**. Prior to that, the CSR clause was voluntary for companies, though it was mandatory to disclose their CSR spending to shareholders.

Every company to which CSR criteria are applicable shall constitute a **Corporate Social Responsibility Committee**. The CSR Committee should consist of 3 or more directors, with at least 1 independent director. The activities to be undertaken under CSR are prescribed by the Government in Schedule VII of the Companies Act.

**Penal Provisions:** In case a company fails to comply with the provisions relating to CSR spending, transferring and utilising the unspent amount, the company will be punishable with a fine ranging from INR 50,000 to INR 25 lakh. The officers responsible for CSR are liable for imprisonment up to 3 years or a fine between INR 50,000-5 lakh or both.

**Amendment in 2019:** Before the amendment, if a company was unable to fully spend its CSR funds in a given year, it could carry the amount forward and spend it in the next fiscal, in addition to the money allotted for that year.

The amended Act requires companies to deposit the unspent CSR funds into a fund prescribed under Schedule VII of the Act within the end of the fiscal year. This amount must be utilized within three years from the date of transfer, failing which the fund must be deposited in to one of the specified funds.

## Initiatives included under CSR (Schedule VII, Companies Act, 2013)

- **Eradicating hunger**, poverty and malnutrition, promoting health care and sanitation.
- **Promoting education**, employment enhancing vocation skills and livelihood enhancement projects.
- Promoting **gender equality**, empowering women, setting up homes/hostels for women and orphans; setting up old age homes, measures for reducing inequalities faced by socially/economically backward groups.
- Ensuring **environmental sustainability**, ecological balance, protection of flora and fauna, animal welfare, agroforestry, conservation of natural resources including contribution to the Clean Ganga Fund.
- Protection of **national heritage, art and culture**; setting up public libraries; promotion and development of traditional art and handicrafts.
- Measures for the benefit of **Armed Forces**, CAPF veterans, their dependents and widows.
- Training to **promote sports** (rural, paralympic and olympic sports).
- Contribution to the **PM's National Relief Fund/PM CARES Fund** or any other fund set up by the Union Govt.
- Contribution to **incubators** or **R&D projects** in the field of **science, technology, engineering and medicine**, funded by the Union/State Governments or PSUs; Contributions to public funded Universities;
- **Rural development projects** and Slum area development.
- **Disaster management**, including relief, rehabilitation and reconstruction activities.

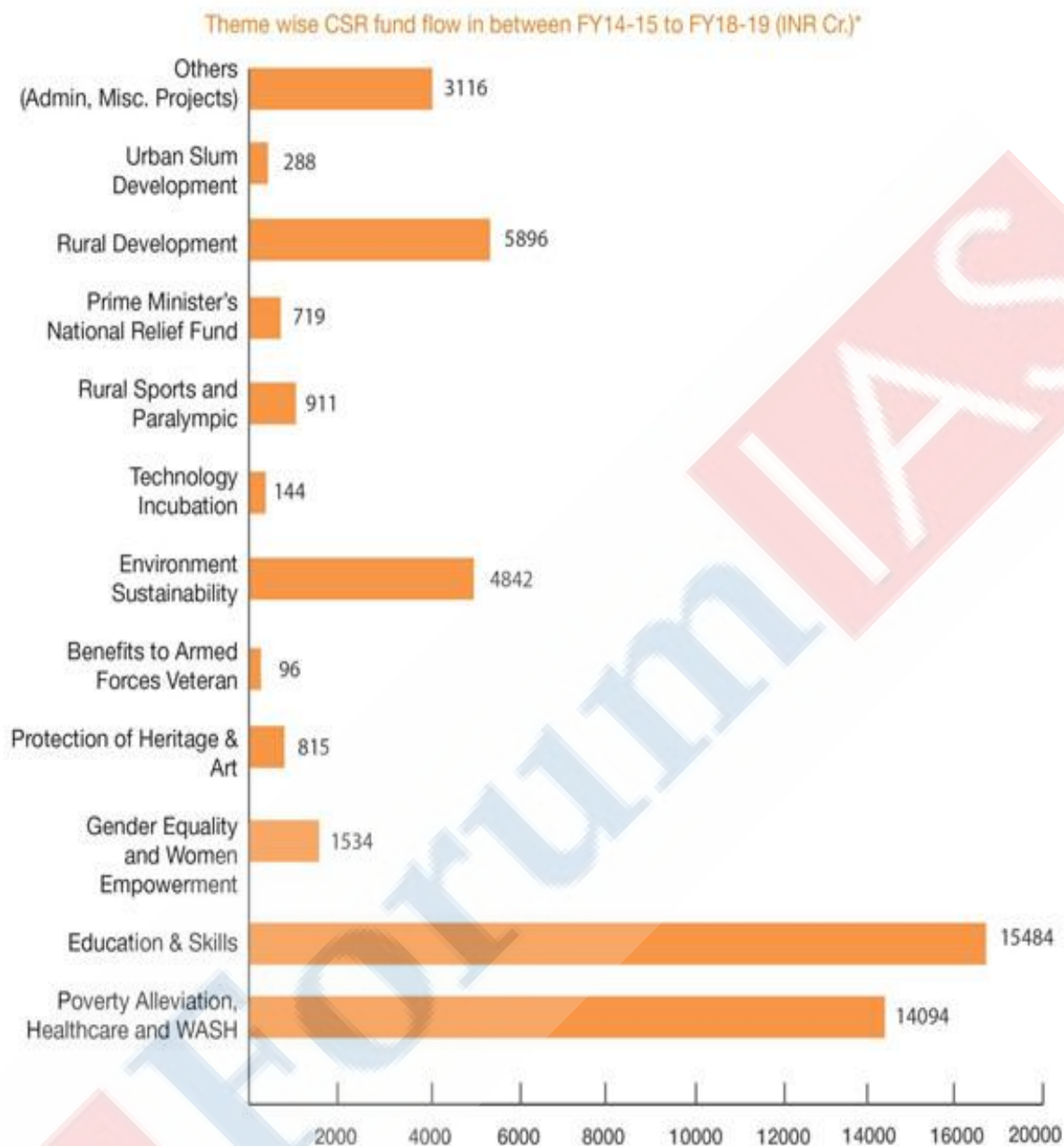
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### What is the current status of CSR in India?

CSR spending in India has risen from INR 10,065 crore in 2014-15 to INR 24,865 crore in 2020-21.

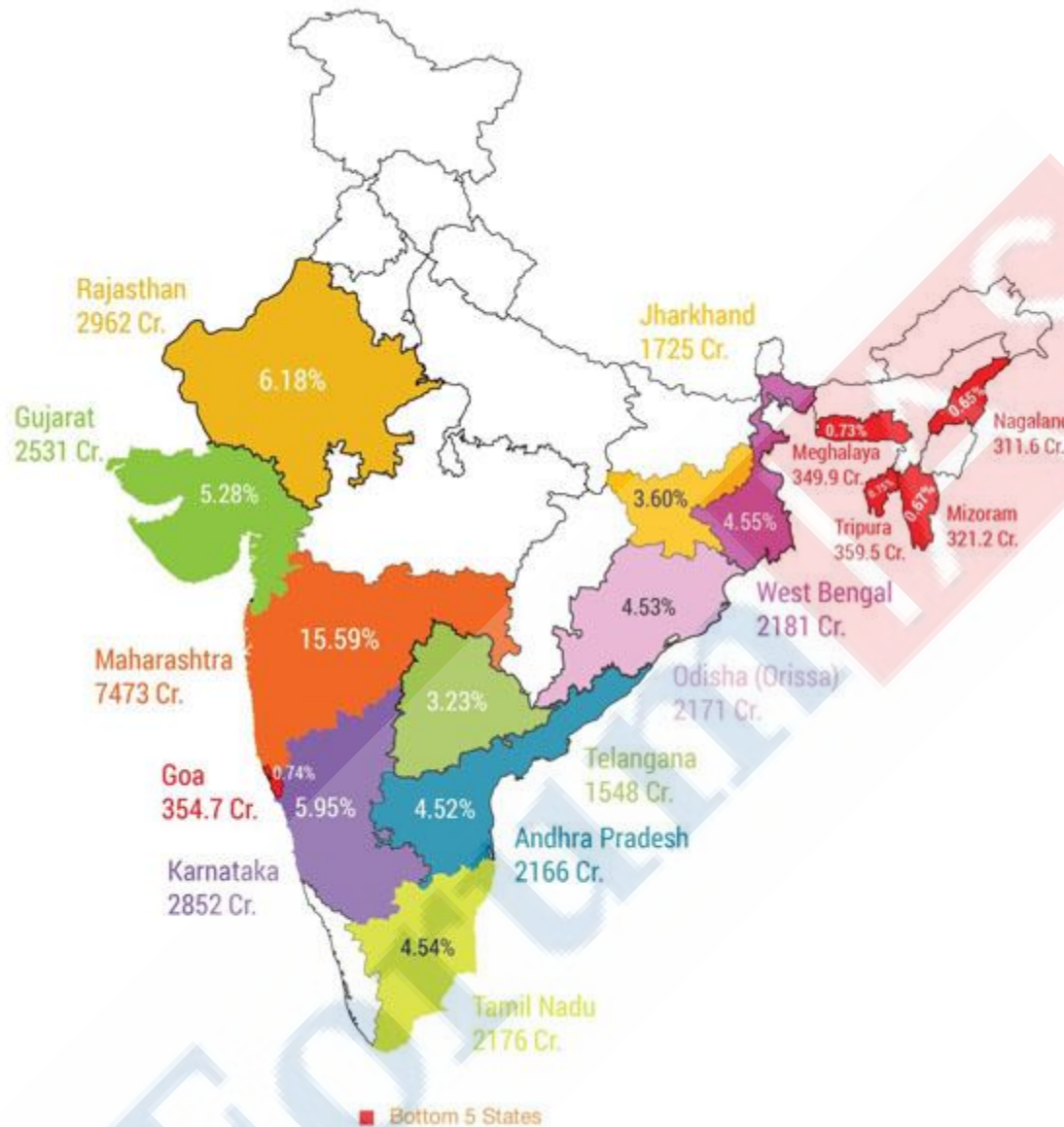
CSR Spent: Development Sector-Wise (Financial Year 2020-21)	
Sector	CSR Expenditure in Total
Rural Development	1818.38 Cr.
Environment, Animal Welfare, Conservation of Resources	1273.38 Cr.
Prime Ministers National Relief Fund	1656.4 Cr.
Clean Ganga Fund	13.36Cr.
Encouraging Sports	240.9 Cr.
Others	282.65 Cr.

According to the Ministry of corporate affairs, pan India CSR spending in financial year 2020-21 was INR 7490.84 cr.



Source: [csr.org](https://www.csr.org/). Sector-wise spending on CSR between 2014-2019.





**Source:** [csr.org](https://www.csr.org/). *State-wise distribution of CSR spending in India between 2014-19.*

There were 2,926 companies in 2020-21 with zero spend on CSR while companies spending less than the prescribed limit of 2% rose from 3,078 in 2015-16 to 3,290 in 2020-21. There was also a decline in the number of companies participating in CSR — 25,103 in FY2019 to 17,007 in FY2021.

### What are the benefits of CSR?

**Sustainable Development Goals:** Corporates are seen as the key drivers of SDGs as they can apply their creativity and innovation to achieve sustainable development. CSR and SDGs together have tremendous potential to develop an interconnected model for sustainable growth. Many companies are aligning their CSR focus areas according to SDGs to meet their CSR mandate for example enhancing livelihoods through skill development of women contributes to SDGs like ending poverty and promoting gender equality.



**CSR for Technology Incubators:** In September 2019, the Government expanded the scope of CSR to spur the R&D and innovation ecosystem in India. Contribution to incubators funded by Governments/PSUs or to research and academic institutions has been included under the CSR.

**Responsible Business Reputation/Customer Loyalty:** Corporate social investment can help to build a reputation as a responsible business, which can, in turn, lead to competitive advantage. Companies often favour suppliers who have responsible policies, since this can reflect on how their customers see them. It has been demonstrated that enhancing a company's image through CSR may increase consumer loyalty and public trust, which in turn enables firms to profit from these factors.

**Costs Savings:** By reducing resource use, waste and emissions, will help the environment and save money as well. With a few simple steps, company may be able to lower there utility bills and achieve savings for there business.

**Employee Retention:** Employees stay in their jobs because of several reasons: job satisfaction, the environment of the company, and good prospects etc. Being a responsible, sustainable business may make it easier to recruit new employees or retain existing ones. Employees may be motivated to stay longer, thus reducing the costs and disruption of recruitment and retraining.

**Attracting Responsible Investors:** Socially responsible investors (SRIs) seek out businesses that have shared values. The number of SRIs is raising rapidly. Shareholder engagement is also seen to be more prominent in companies with SRIs, as they are more willing to push CSR to the forefront of business strategy.

**Read More:** [ESG Framework In India – Explained, pointwise](#)

#### **What are the challenges to CSR in India?**

**Regional Disparity:** Most of the CSR spending is concentrated in States like Maharashtra, Tamil Nadu, Gujarat, Karnataka etc. Between 2014-19, these States accounted for ~32% of total spending. A more recent report by Ashoka University's Centre for Social Impact and Philanthropy has observed the spending in these 4 States to be ~54%. Populous Uttar Pradesh and Madhya Pradesh with poor resources and poor population receive much less.

**Sectoral Disparity:** An analysis of CSR spending (2014-18) reveals that while most CSR spending is in education (37%) and health and sanitation (29%), only 9% was spent on the environment even as extractive industries such as mining function in an environmentally detrimental manner in several States.

**Lack of Transparency and Information:** Many corporates do not make adequate efforts to disclose relevant information. This becomes a hurdle in trust-building among corporate houses and communities. Transparency is crucial for the success of any CSR initiative. The Standing Committee on Finance has observed that the information regarding CSR spending by companies is insufficient and difficult to access.

**Greenwashing:** Many companies still view CSR as a statutory obligation only. They engage in superfluous activities not having a direct measurable impact on communities or the environment. However, they offer misleading misleading communication and then try to influence the perceptions of their stakeholders and the general public. This has been termed as 'greenwashing'. In the absence of coercive enforcement mechanisms, such phenomena is becoming common.

**Lack of Consensus and Cooperation:** There is a lack of consensus among different local agencies and corporate entities which results in duplication of efforts by the firms in terms of CSR. This leads to unnecessary competitive spirit among the firms which go against the main objective of building value for the society.

**Lack of Community Participation:** Many companies are driving the CSR projects from top with little involvement of the locals who are the intended beneficiaries. This leads to a disconnect. Companies end up taking initiatives which they consider as important, rather than what is beneficial to the communities.

**Lack of Strategic Planning:** Due to a lack of strategic planning, proper experimentation, innovation, and engagement, companies aren't able to make a meaningful impact on their CSR. They are not able to identify ideal investment projects and therefore cannot provide high impact results. Corporate houses must understand the challenges faced by its citizens and then invest properly.

#### What steps can be taken to address the challenges?

**Centralized Platform:** The Ministry of Corporate Affairs (MCA) can curate a centralized national-level platform. All States can list their potential CSR-admissible projects on the platform. With this, companies can assess where their CSR funds would be most impactful across India. Invest India's 'Corporate Social Responsibility Projects Repository' on the India Investment Grid (IIG) can serve as a guide for such efforts. This model would be very useful for **supporting deserving projects in the 112 aspirational districts** and projects identified by MPs under the Government's *Sansad Adarsh Gram Yojana*.

**Read More:** [Aspirational Districts Programme: Features, Issues and Outcomes – Explained, pointwise](#)

**Sectoral Balance:** Companies need to prioritise environment restoration in the area where they operate, earmarking at least 25% for environment regeneration. This gains importance as impact of climate change are becoming evident in regions across India.

**Community Participation:** All CSR projects should be selected and implemented with the active involvement of communities, district administration and public representatives.

**Enhanced Monitoring:** The high-level committee's recommendations from 2018 should be added to the current CSR framework to **improve the monitoring and evaluating system**. Some of the recommendations are: **(a)** Making CSR part of statutory financial audits by including details about CSR spending in a company's financial statement; **(b)** Making independent third-party impact assessment audits mandatory. It is important to take steps to stop duplication and fraud.

The MCA and the line departments need to **exercise greater direct monitoring and supervision** over the spending by companies.

**Coordination with NGOs:** There is a need for pooling of resources and building of synergies by both Companies and Non-Governmental Organizations for more efficient and effective implementation of CSR activities.

#### Conclusion

More proactive participation by the private sector through Corporate Social Responsibility can have a transformative impact on the challenges facing India today. The contribution has

increased manifold since the passage of Companies Act, 2013. Addressing the gaps in the implementation can enhance the efficacy of the spending by the corporates. This can act as a major lever in ensuring that India's growth story becomes more sustainable and inclusive.

**Syllabus:** GS II, Government policies and interventions for development in various Sectors and issues arising out of their design and implementation; GS III, Inclusive Growth and issues arising from it.

**Source:** [The Hindu](#), [Ministry of Corporate Affairs](#)

### [Kurukshetra October Summary] Artificial Intelligence in Agripreneurship (AI in Agriculture) – Explained, pointwise

#### Introduction

The need to increase agriculture production has become immense as the population is rising at a fast pace. Technology has made significant inroads in the field of agriculture. The growth of start-ups in the field is helping to increase the production and efficiency even for small landholdings. Artificial Intelligence as a field is still developing. There is great potential for the use of AI in agriculture in future especially in reducing the harmful side-effects of agriculture and making it more sustainable. Therefore the need is to strengthen the technology and make it more affordable for the farmers, including for marginal farmers with small landholdings.

#### Need for AI in Agriculture

Agriculture is one of the oldest human activities. It has been an important factor in the growth of the civilizations. It was a vital factor in permanent settlement of nomadic communities leading to creation of cities and new economies. However, the progress and use of technology in agriculture has been slow. Rising population has put pressure on agriculture production. Increase in population leads to inequitable access to food. Moreover, population is rising in regions where food scarcity is already acute. Finding innovative ways to **sustainably improve agricultural productivity**, enhance the worldwide food supply chain, reduce food waste, and feed every hungry or malnourished has become a key priority. To make the agriculture and food systems more **sustainable, resilient, and inclusive**, technological interventions have become imperative. These agricultural improvements allow countries to **generate higher yields of better quality food with fewer chemicals**. AI in agriculture can help reduce need for physical labour and plug the gap between food demand and supply.

Agriculture has been bedrock of India's economy. It contributes 18–20% of India's GDP, 11% of exports and supports ~50% of the workforce. India has the second-largest arable land base and the gross irrigated area. Over 60% of the country's population, several million small farming households, rely on **agriculture as a primary income source**. Land remains the important asset for livelihood stability. Agriculture creates jobs and boosts the economy. Agriculture's growth has boosted rural per capita income. Enhancing growth in Agriculture through deployment of technology will **spur rural development**, leading to rural transformation.

**Read More:** [\[Yojana June Summary\] Artificial Intelligence and Machine Learning – Explained, pointwise](#)



### Applications of AI in Agriculture

NITI Aayog has called AI solutions vital for agriculture. In agriculture, AI technology can be used in decision making e.g., it can tell farmers when to plant, where to use herbicide, and where to expect pest outbreaks.

In recent years, numerous agri-tech businesses have created business models based on AI technologies including machine learning, robotics, and computer vision. Applications of AI, such as alternative credit scoring or “smart” farm equipment, can reduce the cost of serving smallholder farmers across the agriculture ecosystem.

AI in agriculture can help in **efficient and sustainable use of resources**, and **overcome market asymmetries** that prevent farmers from accessing regional and global value chains.

AI's cross-disciplinary uses might revolutionise farming. AI will help farmers do more in less time while improving product quality and crop delivery. AI-supported digital solutions provide companies and entrepreneurs an opportunity to provide **smart farms as a service**.

AI Technology has also enabled the **implementation of precision farming**. The utilization of precise amount of inputs at targeted locations at appropriate time reduces the amount of inputs required. It helps in cutting down on waste and save money on labour expenses thus reducing cost of production.

**Read More:** [Precision Farming: Technologies, Benefits and Challenges – Explained, pointwise](#)

AI technologies are particularly useful in soil management and weed management. **Internet of Things (IoT)**, a valuable data processing and storage technology that has extensive use in agriculture as well. The amount of data (organized and unstructured) like weather data, soil reports, rainfall, pest infestations, drone and camera photographs etc. continue to rise rapidly. The data can be analysed by cognitive IoT to provide sustainable solutions to agriculture problems e.g., the data can help classify soils of particular field. Then appropriate amount of nutrient input can be suggested by the software and applied precisely through the help of robots.

AI has application in allied-activities like dairy farming as well. AI tools are helping in **enhancing the genetics of farm animals**. Its most prevalent use is in dairy cow breeding. It has the **potential to improve the dairy yields** while reducing the susceptibility to diseases.

### Challenges to AI in Agriculture

There are significant difficulties associated with the application of AI in agricultural settings/

**First**, the distribution of modern technology is uneven because of certain geographical, social, or political reasons. This acts as a barrier in adoption of AI in agriculture certain regions.

**Second**, a lot of improvements have been made over the past few years in the AI systems. However, considerable more work is required to transfer AI-based machines and algorithms from controlled experiments to real agricultural environment. It also requires enhanced ability to handle large sets of data and to interpret them.

**Third**, there are concerns over the security of devices used to collect the data and the privacy of the data collected.



### Agri Tech Startups

At present, India ranks 2nd internationally in 'agritech' start-ups. According to the World Economic Forum, India has 3,116 registered food and agriculture start-ups, and this number has grown 25-30% year-over-year. Since 2014, US\$ 500 million have been invested in this field.

Breakthroughs in big-data analytics, computer power, and cloud-based storage, together with cost reductions in satellite images, remote sensors, and other technologies, have allowed agri-tech businesses to deploy AI technologies commercially.

#### DeHaat

DeHaat is an online platform that provides comprehensive agricultural services to farmers. It addresses some of the challenges faced by the farmers through the implementation of AI-enabled solutions. It has helped **improve the supply chain efficiency** in the agricultural sector. It has brought together **buyers, institutional lenders, and agri-input product companies** on a single platform. It collaborates with more than 3,000 micro entrepreneurs to provide **last-mile delivery and aggregation services**. It is operational in the states of Bihar, UP, Odisha, and West Bengal and the network is comprised of more than one million beneficiary farmers from those regions.

#### See Tree

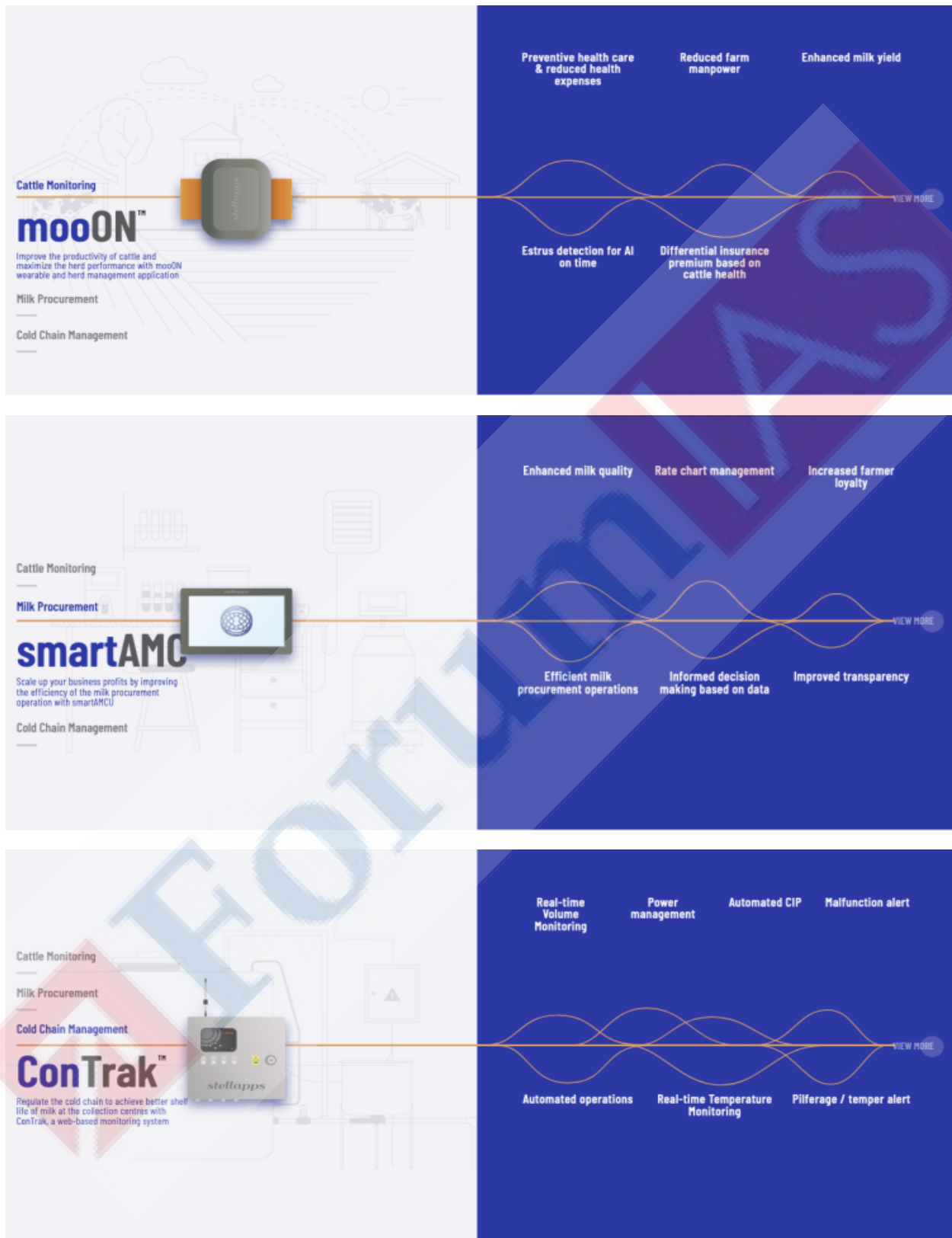
See Tree was launched in 2017 to provide farmers with vital data for managing and optimising the health of their trees. The firm has created AI systems that **track the health of each tree**, finding failing trees and groups of healthy trees. It evaluates the impact of various farming approaches and provides actionable data on their effectiveness. It optimises the number of fruits per tree and **provides estimates just before harvest**. It uses digital farm management to oversee each individual tree and continuously collect data from them. Technology advancements in aerial, ground, and boots-on-the-ground data gathering make it possible to acquire the highest quality information for use in developing the most effective strategies.

### Cropln

Cropln is an Agri-Tech Start-up, that provides agribusinesses with **decision-making tools** that **promote consistency, reliability, and sustainability**. Cropln is digitising every farm and data-managing the whole ecosystem by providing capabilities for live reporting, analysis, interpretation, and insights that span continents. Their smarter farming solutions are powered in real-time, allowing users to **record patterns, forecast trends, and create a business plan for the future**. It ensures **effective operations, lower expenses, and improved visibility** for farmers. It enables companies to profit from actionable information and helps farmers with farm advice and alerts. The predictability of yield quantity and quality, coupled with reduced operational costs, increases business productivity.

### Stellapps

Stellapps, is the first company of its kind to concentrate on **digitising the dairy supply chain** as its primary business objective. Since its founding in 2011, it has been actively promoting the use of technology interventions in the production of milk, especially in developing nations where output per animal is low, traceability is poor, and quality is not up to standards. They have created the **SmartMoo platform**, which is a full-stack Internet of Things solution, in order to **digitalise and optimise milk production, milk procurement and cold chain management**. Stellapps' SmartMoo IoT platform receives data from sensors that are installed into milking machines, animal wearables, milk chilling equipment, and milk procurement peripherals. The SmartMoo platform and suite of apps are now responsible for interacting with more than two billion litres of milk each and every year.



Source: Stellapps. Benefits of AI in cattle monitoring, milk procurement and cold chain management.

**Conclusion**

The use of AI in Agriculture offers exciting opportunities and has the potential to revolutionize the agriculture sector. However, the biggest challenge in adoption of AI in agriculture is small landholdings and lack of access to technology. Another hurdle is scaling up the deployment of AI solutions at mass level (rather than at individual farm levels). The challenges can be addressed by the Agri-tech start-ups with active support from the Union and State Governments. This can help in addressing the challenge of food security as well as making the agriculture sustainable.

**Syllabus:** GS III, Science and Technology – Developments and their applications and effects in everyday life.

**Source:** Kurukshetra October 2022

**Mainstreaming Biodiversity in Forestry: FAO Report – Explained, pointwise****Introduction**

Forests are host to most of Earth's terrestrial biodiversity. Tropical rainforests alone account for 50% of the terrestrial species. The conservation of the world's biodiversity is therefore crucially dependent on the way the forests are utilized. The role of forests in maintaining biodiversity is explicitly recognized by the **United Nations Strategic Plan for Forests 2017– 2030**. It is also the focus of the ongoing discussions around the forthcoming post-2020 global biodiversity framework under the Convention on Biological Diversity (CBD). In December 2019, the Food and Agricultural Organization (FAO) adopted the **Strategy on Mainstreaming Biodiversity across Agricultural Sectors**. Protected areas play a central role in biodiversity conservation covering 18% of the world's forests. Often, protected areas are established in remote and inaccessible places, leaving critical habitats in more accessible areas vulnerable to pressures from competing land uses. **Weak governance and law enforcement undermine biodiversity conservation** even in protected areas. For these reasons, mainstreaming biodiversity in production forests is of paramount importance to stem biodiversity loss. The FAO, in partnership with the **Center for International Forestry Research (CIFOR)**, has conducted a review of **Mainstreaming Biodiversity in Forestry** and has shared good practices on solutions that balance conservation and sustainable use of forest biodiversity.

**Mainstreaming Biodiversity in Policies/Programmes**

Forest biodiversity continues to be lost at an alarming rate, primarily due to deforestation. Approximately 10 million ha of forest are cleared for other land uses every year (mostly driven by agricultural conversion). Forest biodiversity is being eroded over enormous areas through forest degradation, due to over-harvesting of timber species, other valuable plants and wildlife, as well as from invasive species, fires, pests and diseases. Biodiversity loss compromises the ecological functioning and stability of forests. It undermines the provision of ecosystem services to humanity. **Sustainable Forest Management (SFM)** can help stem biodiversity losses and secure sustainable benefits.

According to the FAO Report, Mainstreaming biodiversity is ***“the process of embedding biodiversity considerations into policies, strategies and practices of key public and private actors to promote conservation and sustainable use of natural resources”***. It involves prioritizing forest policies, plans, programmes, projects and investments that have a

positive impact on biodiversity at the ecosystem, species and genetic levels. It is about integrating biodiversity concerns into everyday forest management practice.

**National Biodiversity Strategies and Action Plans** (NBSAPs) are an important tool for mainstreaming biodiversity and form the basis for developing specific sectoral policies to support the sustainable use and conservation of biodiversity.

The **Paris Agreement** noted the importance of biodiversity and called for encouraging synergies between climate action and biodiversity protection. **Nationally Determined Contributions** (NDCs) also offer an opportunity to mainstream biodiversity in climate policies, as Forests are critical for mitigation and adaptation to climate change.

### Approaches to Mainstreaming Biodiversity

Mainstreaming biodiversity requires both regulation and steering. There is a wide variety of approaches and instruments for mainstreaming biodiversity in forestry.

### Spatial Planning-based Approaches

There are trade-offs in different land uses (forest, agricultural, industrial etc.) and outcomes. Multiple objectives can be met through a well-considered spatial plan. Large-scale spatial planning should consider the effects of other sectors, especially agriculture and infrastructure, on forest biodiversity. Approaches like designation of multiple-use protected areas, protecting threatened habitats, and increasing forest cover through restoration and forest plantation establishment can be adopted.

### Species-based Approaches

Species management, with active partnerships with NGOs, enables Governments to harmonize efforts across sectors to manage species that interact strongly with human activities: **(a)** Species threatened by human activities; **(b)** Migratory species; **(c)** Species causing human-wildlife conflict; **(d)** Invasive species; **(e)** Overabundant native species; **(f)** Harvested species.

### Regulatory Instruments

Forest regulations ensure that forest management contributes to successful implementation of **National Biodiversity Management Strategies**. Regulatory instruments include quotas/permits/licenses designed to **regulate the exploitation of forest resources** and **legal provisions for environmental governance**, including environmental impact assessments. They help enforce species management requirements, ensure incorporation of biodiversity considerations in spatial planning, and establish a mechanism for participatory forest management. Regulatory approaches work well when the process is transparent, and well-monitored.

### Economic Instruments

Economic instruments like taxes, subsidies and grants, can be used to incentivize forest owners and managers to advance SFM and improve biodiversity outcomes. Governments should check subsidies on agriculture inputs or forest conversion. **Biodiversity offsetting** can provide cash for extending and strengthening protected area management and funding forest restoration.

### Biodiversity Offsets

Biodiversity offsets are actions designed to compensate for biodiversity loss from development projects. They are based on the premise that impacts from development can be compensated for if sufficient habitat can be protected, enhanced or established elsewhere.



**Market-based Instruments**

**Payments for Ecosystem Services (PES)** schemes generate income that can support SFM and biodiversity conservation. High transaction costs, limited resources and insecure land tenure are the main barriers impeding participation in PES schemes. **REDD+** and other carbon-based PES schemes offer tremendous potential for supporting SFM and biodiversity conservation.

**Forest Certification** has become an important tool for promoting and ensuring SFM. However, it has made negligible progress in tropical low-income countries. Governments can encourage certification by providing incentives (e.g. reduced license fees) and through purchasing policies that require the use of certified timber.

**Participatory Forest Management**

**Recognizing the rights of Indigenous Peoples** and local communities, **ensuring their participation** and **integrating their traditional knowledge** in forest management is critical to achieve SFM. Equitable sharing of the benefits of biodiversity is one of the central pillars of the United Nations Convention on Biological Diversity (CBD).

**Community-based Forest Management** can fulfil above objectives. It benefits biodiversity conservation by reducing illegal activities and empowering the community to defend their forests against external threats. Lands traditionally owned, and managed by Indigenous Peoples perform better in **resisting deforestation** compared to unprotected, or sometimes even protected, areas.

Challenges associated with community-based forest management include potential conflicts among neighbouring communities, the requirements of business acumen and social capital to operate viable community-based forest enterprises, and the need for quality monitoring.

**Knowledge and Capacity Development**

High quality biodiversity management requires knowledge and capacity among a wide range of actors (Government agencies, local communities, civil society organizations, forest owners etc.). Governments can support research and training on biodiversity and forest management, provision of information on biodiversity, and the production of guidelines and standards.

**Barriers to Mainstreaming Biodiversity**

**Deforestation:** Deforestation continues at an alarming rate of 10 million ha per year especially in lower income tropical countries, primarily driven by agricultural expansion.

**Illegal Forest Activities and Corruption:** Illegal timber harvesting is estimated to account for 15–30% of global timber production and 50–90% of forest harvesting in many tropical countries. These activities directly impact forest biodiversity through forest degradation and undermine efforts towards SFM.

**Poor Conservation outside Protected Areas:** Biodiversity conservation often receives little attention outside protected areas. It is critical to stem biodiversity losses given the limited and uneven coverage of protected areas.

**Insufficient Capacity, Financing and Regulatory Oversight:** Many developing countries struggle to enforce forest and biodiversity regulations because of insufficient capacity and resources. Monitoring biodiversity management requires financial investment which is often inadequate.

**Lack of Indigenous Peoples and Local Community Participation:** The interests of local communities are often not given sufficient consideration in national forest policy and forest

management plans. This undermines social justice objectives, prevents equitable sharing of the benefits derived from biodiversity, and increases the threats to biodiversity.

### **Integrating Biodiversity in Forest Management**

The quality of forest management has a critical role in determining the value of **production forests** for a range of values, including biodiversity. In forest plantations (particularly those under monoculture short-rotation management), the success of biodiversity integration depends mostly on the appropriate identification and protection of vulnerable habitats. Biodiversity conservation in production forest can be enhanced through the multiple measures:

**Managing risks of forest operations to biodiversity:** All forest operations affect biodiversity. Forest Managers should undertake **biodiversity risks assessments**, and implement measures to mitigate identified risks. The High Conservation Value (HCV) approach helps identify and manage the ecological, environmental, and social impacts of forest operations.

**Establishing and managing set-aside areas:** Biodiversity outcomes in production forests can be improved by delineating and preserving judiciously located set-aside areas to **protect old-growth forest and vulnerable habitats**, and **maintain habitat connectivity**. 15% of area can be set-aside within a managed forest.

**Protecting critical biodiversity resources:** The impacts of forest management on biodiversity can be mitigated by protecting **key biodiversity resources within production forests**, such as rare plants, nest sites, large trees, fruit trees and seed sources for the maintenance of tree genetic diversity.

**Sustainable management of timber resources:** Timber harvesting is a major threat affecting a huge number of tree species. Lower harvesting volume combined with a longer rotation period would result in protection of biodiversity.

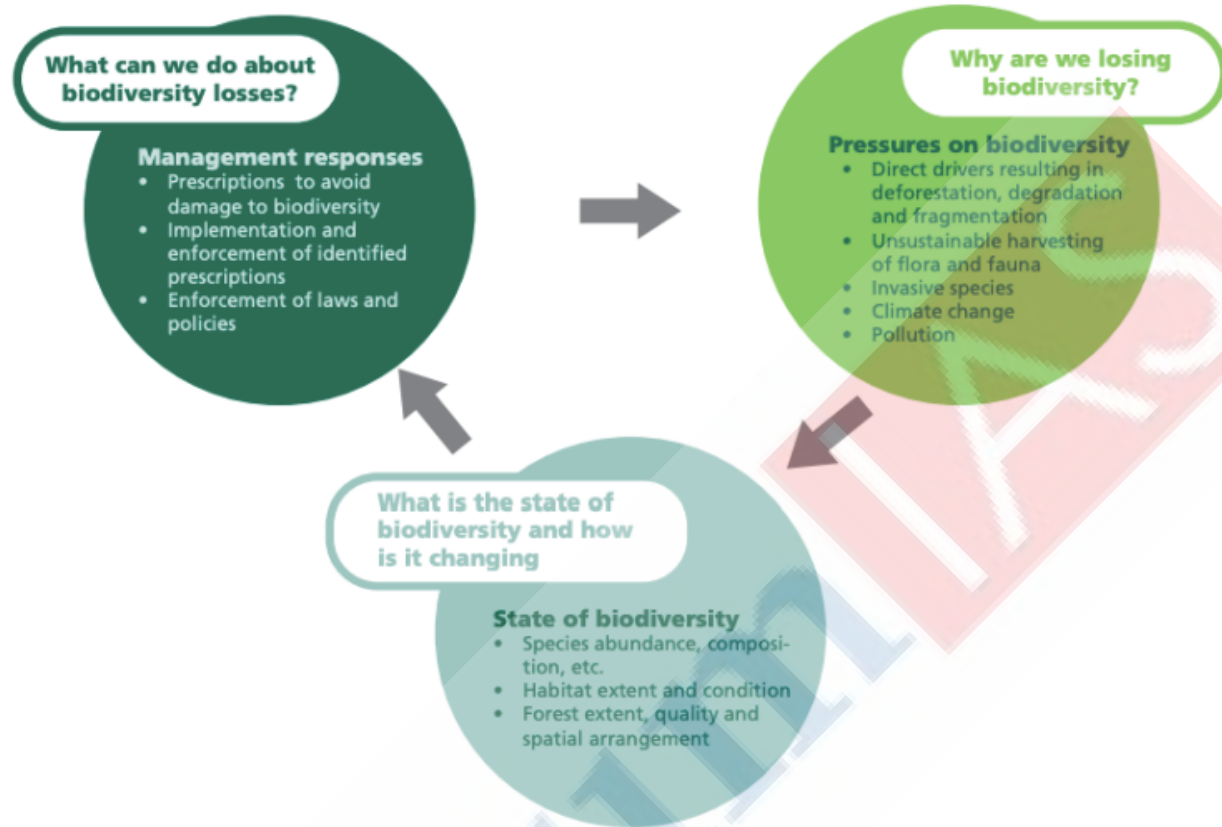
**Regulating non-wood forest product (NWFP) harvest:** Harvesting of NWFPs, including plant resources and animals, has substantial impact on biodiversity. Appropriate regulation of NWFP harvest and sustainable management of these species are required to ensure their sustainability.

**Sustainable management of forest genetic resources:** Conservation of genetic diversity is an overlooked aspect of forest biodiversity conservation. Intraspecific diversity is essential for climate change resilience. Steps that can be taken to maintain and enhance genetic diversity of tree resources include: **(a)** Establishing set-aside areas; **(b)** Reducing damage to residual stands during forest operations; **(c)** Maintaining forest connectivity; **(d)** Integrating genetic diversity considerations in tree planting.

**Managing and controlling invasive species:** Invasive species may arrest natural regeneration, dominate open habitats and increase fire risks. Forest managers should implement an **invasive species management plan**, including the monitoring and eradication of invasive species and controlling already-established invasive species that pose a threat to the forest ecosystem.

**Protecting forests from illegal and unauthorized activities:** Production forests are often susceptible to encroachment and unsustainable harvesting of NWFPs. Forest managers should put in place forest enforcement teams to monitor and prevent illegal activities. Cooperation with local communities, including co-management of NWFP resources, is essential to **building a social fence for forest protection**.

## Pressure–state–response framework



Source: FAO

**Recommendations**

There are a number of measures and actions that Governments and development partners can take to facilitate Mainstreaming Biodiversity in Forestry.

**Reversing Deforestation:** Deforestation must be stopped and reversed. Sustainable agricultural intensification, restricting future agricultural development to deforested regions, and increasing deforestation fines are needed.

**Combating illegal and unregulated forest activities:** They happen due to complex laws and regulations. Countries should streamline rules and regulations, focus on their effective implementation, and define institutional duties among key ministries and agencies. Investments are required for implementation and capacity development in law enforcement.

**Recognizing forest tenure of Indigenous Peoples and local communities:** Devolving forest management authority through participatory forestry is an effective strategy in combating illegal forest activities, especially where local communities act as the forest managers.

**Preventing conversion of natural forests into monospecific forest plantations:** Forest policies and regulations should be updated to **limit forest plantation development to degraded lands that have limited biodiversity value**. It will ensure that increasing timber production through plantations does not come at a cost to biodiversity.

**Ensuring sustainable management of harvested species:** Over-harvesting of plants and wildlife is a serious issue. Hunting by Indigenous Peoples and local communities should be managed through a transparent, negotiated process. Highly sought-after wild plants should be identified, and management plans should be put in place. In production forests, commercial species should be sustainably managed to ensure maintenance of genetic diversity.

**Managing invasive and overabundant species:** Invasive species should be managed through nationally coordinated programmes. Information regarding invasive species should be made readily available, standard best practices developed, and forest management plans should include measures to monitor and control invasive species.

**Adopting a multi-sectoral perspective:** As biodiversity is impacted by changes occurring outside of forests, it is important that biodiversity is mainstreamed across other land use sectors. Inclusion of the forest sector in national development strategies, and biodiversity mainstreaming within forestry, are of critical importance.

**Providing economic incentives:** Governments can provide incentives to promote high-quality forest biodiversity management. These incentives include tax breaks for compliance; renewing licenses based on performance (and revoking them in cases of non-compliance); subsidies and investments for achieving biodiversity outcomes; compensation for reduced production to promote biodiversity benefits etc.

**Facilitating market-based instruments:** Governments can facilitate biodiversity mainstreaming in forestry by steering practices through various market-based approaches. These include measures like facilitating PES schemes through government policy, supporting sustainable value chain development through **green purchasing policies** that reduce the environmental footprint of agricultural and forest products etc.

**Supporting knowledge and capacity development:** Governments should support research and training in forest management and biodiversity conservation at higher institutes of learning. National biodiversity databases, and digital tools for incorporating local knowledge should be developed. These technologies should be leveraged to improve forest law enforcement as well.

### Conclusion

At the COP26 (UNFCCC) in Glasgow, nations pledged to halt and reverse forest loss and land degradation by 2030. The **Abidjan Call** adopted at the 15th COP of the UNCCD reaffirmed the commitment of the international community to combat desertification and halt biodiversity loss. Mainstreaming biodiversity in forestry will prove to be vital in achieving these commitments.

**Syllabus:** GS III, Conservation, Environmental Pollution and Degradation

**Source:** [Down to Earth](#), [FAO](#)

## Issues with Local Governance in India – Explained, pointwise

### Introduction

It is almost 30 years since the 73rd and 74th Constitutional Amendment Acts, creating the new Local Governance Framework in India, were made operational in April 1993. The Acts, focused on enabling democratic decentralization, have provisions that devolved a range of powers and responsibilities to local elected bodies and made them accountable to the people for their



implementation. The new system of local governance has proved to be remarkably beneficial in some aspects. Yet, there are some lacunae, especially in the implementation of several provisions, which has limited the effectiveness of these reforms.

### Evolution of Local Governance in India

There is long evolutionary history of local governance in India. Evidence from the Rig-Veda (1700 BC) shows self-governing village organisations called *Sabhas*. In time, these bodies became panchayats (council of five). The decentralization of authority was present in the Mauryan to Gupta dynasties. The British also tried to establish decentralized systems, albeit with very little powers. The **Royal Commission on Decentralization** (1907) under the chairmanship of Sir H. W. Primrose recognized the importance of panchayats at the village level. Under the Government of India Act, 1935 Provincial Governments were responsible for local governance. They enacted legislations but little powers were provided to Panchayats

The framers of the Constitution of India included **Article 40 among the Directive Principles**: “The state shall organise village panchayats and endow them with such powers and authority as may be necessary to enable them to function as units of self-government”. Four committees (between 1957 to 1986) conceptualised local self-government in India; **Balwant Rai Mehta Committee** (1957), the **Ashok Mehta Committee** (1977–1984), **GVK Rao Committee** (1985), and the **LM Singhvi Committee** (1986).

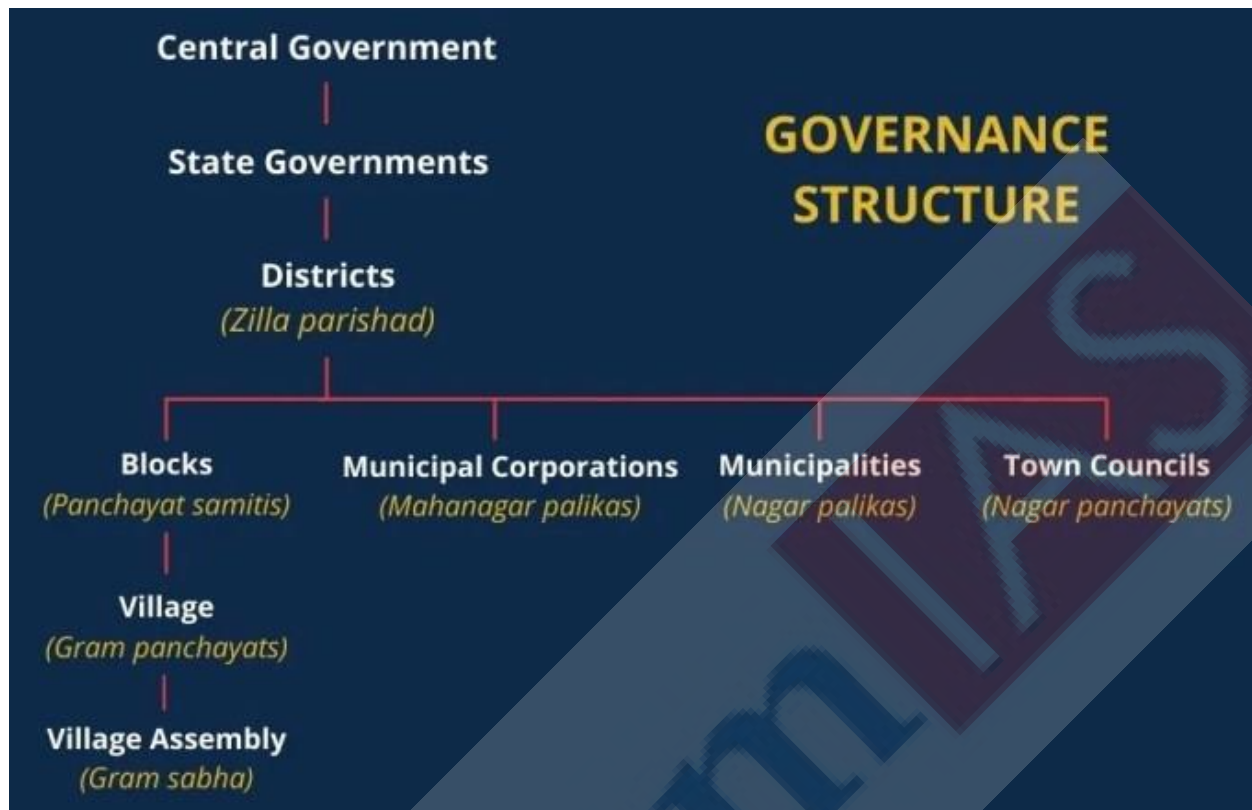
Eventually, the local Governance was given Constitutional Status with the 73rd/74th Constitutional Amendment Acts in 1992. The Amendment Acts of 1992 added two **new parts IX and IX-A** to the Constitution. Two new **Schedules 11 and 12** were also added which contain the lists of functional items of Panchayats and Municipalities.

### What is the structure of Local Governance in India?

The 73rd/74th Amendment Acts established a **three-tier system** of Panchayati Raj in every state – at the village, intermediate and district levels.

For rural areas, there are three nested bodies. At the top is the **District Council** or **Zilla Parishad**, which is made up of a cluster of **Block Councils** or **Panchayat Samitis**, which in turn, are made up of village councils or *Gram Panchayats*. Each village has a village assembly or gram sabha comprising all adults in the village. Gram Sabha has the power to directly elect members of the panchayat. States with a population of less than two million may choose to have a two-tiered structure, without the intermediate block-level institution.

In urban areas, there are three types of local bodies: **Municipal Corporations** (Mahanagar Palikas for areas with a population of more than one million), **Municipal Councils/Municipalities** (Nagar Palikas for areas with less than a million people), and **Town Councils** (Nagar Panchayats for areas transitioning from rural to urban).



Scheduled and Tribal areas are legally exempt from implementing the Panchayati Raj system. The **Panchayat Extension to Scheduled Areas (PESA) Act, 1996** provides for the extension of the 73rd Amendment (with certain modifications and exceptions) to tribal and forested areas across 10 states of India, (excluding tribal areas in the states of Assam, Meghalaya, Tripura, and Mizoram, which are governed by District or Regional Councils). These provisions have been put in place to protect customary law, social and religious practices, and traditional management practices of community resources.

A minimum of one-third of the seats in all local bodies are reserved for women. Seats are also reserved for people belonging to scheduled castes, scheduled tribes, and other backward classes in proportion to their population.

#### **What are the roles of Panchayati Raj Institution (PRIs)/Local Governance Bodies?**

PRIs play a crucial role in rural development and perform the following roles: **(a) Administrative activities** such as the maintenance of village records, the construction, maintenance, and repair of roads, tanks, wells, and so on; **(b) Improving socio-economic welfare** through the promotion of rural industries, health, education, women and child welfare, among others; **(c) Judicial functions** such as trying petty civil and criminal cases such as minor thefts and money disputes are also performed either by separate *adalati* or *nyaya* panchayats, or by gram panchayats.



### What are the challenges in working of Local Government Bodies?

**Functional Challenges:** The power to devolve functions to local governments rests with the State Government. **Most States have not devolved adequate functions to local government bodies.** This has severely affected the system's efficiency and effectiveness. State Governments have created **parallel structures** for the implementation of projects around agriculture, health, and education, which undermines the status of local bodies. Local bodies lack the support systems necessary to carry out their mandates. The 74th amendment requires a **District Planning Committee** to be set up in each district, so that the development plans prepared by the panchayats and urban local bodies can be consolidated and integrated. According to a study by the India Development Review (IDR, a think tank), **District Planning Committees are non-functional in 9 states**, and failed to prepare integrated plans in 15 states.

**Financial Challenges:** (a) Local government expenditure as a percentage of GDP is only 2%. This is extremely low compared to other major economies like China (11%) and Brazil (7%); (b) Most local bodies, both rural and urban are **unable to generate adequate funds from their internal sources**, and are therefore extremely dependent on external sources for funding. Studies show that around 80-95% of revenue is obtained from external sources, particularly State and Union Government loans and grants; (c) The volume of money set apart for them is **inadequate to meet their basic requirements**. Local Governments are starved of resources. The Union Finance Commissions have made desirable recommendations, but the actual devolution of funds has been very poor. Not more than 5% of the divisible pool of Union taxes is given to local governments; (d) The devolution of funds is **associated with conditionalities that bind them to specific uses**. (i.e., top driven schemes of Union/State Governments, rather than based on local needs). The Government-appointed officers have complete control over spending of funds instead of the elected representatives of local governments; (d) **State Finance Commissions are not established as per Constitutional requirements** (constitute every 5 years). By 2014-15, States should have created 5th State Finance Commission (SFC) in their respective States, but only 13 had created them. By 2019, when 6th State Finance Commission should have been constituted, some States were yet to create 3rd or 4th Commissions. J&K had created only 1



SFC by April 2019; (e) Some experts argue that **Local governments are reluctant to collect property taxes and user charges** because of fear of backlash from public. They are happy to implement top-down programmes because they know that if they collect taxes, their electoral prospects will be hampered.

### Status of Constitution of State Finance Commissions

States	State Finance Commissions				
	5 <sup>th</sup>	4 <sup>th</sup>	3 <sup>rd</sup>	2 <sup>nd</sup>	1 <sup>st</sup>
Assam, Bihar, Haryana, Himachal Pradesh, Kerala, Madhya Pradesh, Maharashtra, Odisha, Punjab, Rajasthan, Sikkim, Tamil Nadu, Uttar Pradesh (13)	✓				
Andhra Pradesh, Karnataka, Tripura, Uttarakhand, West Bengal (5)		✓			
Chhattisgarh, Goa, Gujarat, Manipur (4)			✓		
Arunachal Pradesh, Jharkhand, Nagaland (3)				✓	
Jammu & Kashmir, Mizoram, Telangana (3)					✓

**Notes:** (a) Figures in parenthesis refer to the number of states; (b) As per the 73<sup>rd</sup> and 74<sup>th</sup> Constitutional Amendments Act, 1992 three states, Meghalaya, Mizoram and Nagaland are exempted from constituting SFCs. However, Mizoram and Nagaland have constituted SFCs; (c) Telangana, the newest state of India, was formed out of Andhra Pradesh in June 2014. It constituted its first SFC in December 2017.

Source: NIPFP. Status of Constitution of State Finance Commissions as of April 2019.

**Functionary Challenges:** (a) Every local government needs to have organisational capacity, by way of staff such as office and clerical staff and social mobilisers. Staffing of local governments is scanty. Many panchayats share a single secretary, who is often overburdened; (b) Technology has been used to centralize the delivery of local services which has been detrimental to local decision-making.

**Other Challenges:** (a) Criminal elements and contractors are attracted to local government elections especially in urban areas. They are able to win elections through corrupt means, as local elections do not get same scrutiny as State Assembly or General Elections; (b) Elections to the local bodies are often delayed. For long period of times there are no functional local governments; (c) Despite a relatively higher level of literacy and educational standard, city-dwellers do not take adequate interest in the functioning of the urban government bodies e.g., the turnout in Municipal Elections in Delhi and Mumbai in 2017 was only 53% and 55% respectively; (d) While women have been empowered with representation through reservation of seats, the '**Sarpanch Pati**' syndrome limits the effectiveness. ('Sarpanch Pati' syndrome: Women Sarpanch is only nominal head, the male relative (generally husband) wield actual power).

### What steps can be taken going ahead?

**First**, the provisions of 73<sup>rd</sup>/74<sup>th</sup> Constitutional Amendments should be implemented in true spirit. **State Finance Commissions should be regularly constituted with clearly defined Terms of Reference (ToR)**. ToR should include recommendation to devolve more funds and make the functioning of local bodies more effective. Adequate powers to raise own revenues should be devolved to local governments.



**Second**, the **elections should be held at regular intervals** without any delay. State Governments and State Election Commissions must be held accountable for delays.

**Third**, **Gram Sabhas and wards committees** (in urban areas) have to be **revitalized**. Consultations with the grama sabha could be organised through smaller discussions where everybody can participate to make them **inclusive**. New media of communication like social media groups could be used for facilitating discussions between members of a grama sabha/ward committees.

**Fourth**, local government **organisational structures have to be strengthened**. Panchayats are burdened with a huge amount of work that other departments thrust on them, without being compensated for the extra administrative costs. Local governments must be enabled to hold State departments accountable and to provide quality, corruption free service to them.

**Fifth**, there is a need to **improve capabilities of human resources** through training, process consultation, action research methods and workshops.

**Sixth**, **citizen participation and engagement** in local governance can be enhanced with the **help of NGOs and civil society organizations**. Citizens also need to be informed about the functioning and consequences of decisions taken by the local government bodies. The general public also need to be informed about the role of the service providers, the cost of services, the sources of their financing etc.

### Conclusion

Empowering the local bodies for Local Governance has been one of the most progressive reform since Independence. It has envisioned to place the governing power in the hands of the general populace. Just like every other reform, this one has a few loopholes in it. Nevertheless, if these gaps are removed, the present local governance system can truly empower the citizens and support the inclusive growth.

**Syllabus:** GS II, Devolution of powers and finances up to local levels and challenges therein.

**Source:** [The Hindu](#), [The Hindu](#), [The Hindu BusinessLine](#), [Economic Times](#), [NIPFP](#)

## Nobel Prizes 2022 in Sciences – Explained, pointwise

### Introduction

The Nobel Prizes 2022 have been announced. The Prizes have been awarded for pioneering research in various fields in sciences and for efforts in furthering peace.

### About the Nobel Prize

The first Nobel Prizes were awarded in Stockholm, Sweden in 1901 on the 5th death anniversary of Alfred Nobel. Swedish inventor Alfred Nobel invented dynamite and other high explosives.

Originally, the prize was awarded in the fields of Physics, Chemistry, Physiology or Medicine, Literature, and Peace. Later in 1968, a sixth prize was added in the field of economic sciences, but it is not officially called Nobel Prize (Sveriges Riksbank Prize in Economic Sciences).

Prizes may be given only to individuals, except the Peace Prize, which may also be conferred upon an institution. However, maximum of 3 individuals can share a prize.

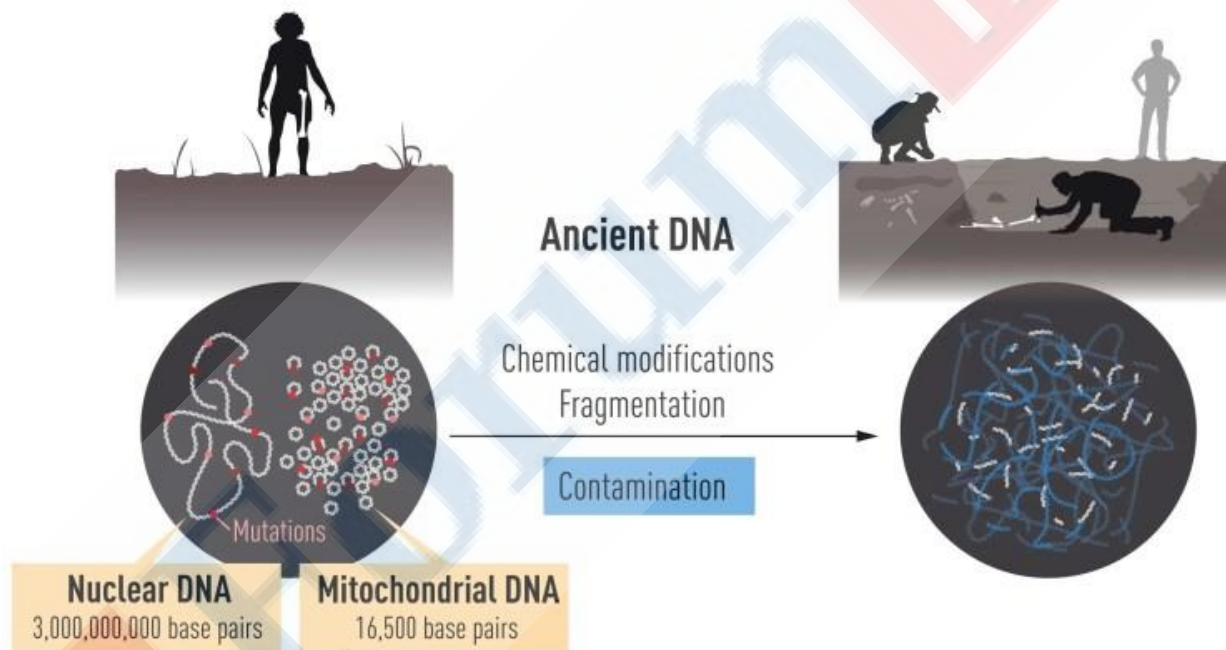
Read More: [What is Nobel Prize?](#)

### Nobel Prize in Medicine or Physiology, 2022

The Nobel Prize in Medicine (Physiology) 2022 has been awarded to Svante Paabo. He has been credited with developing **methodologies to extract 'clean' DNA from thousands of years old human fossils**, and reading the genetic information they contain.

Earlier, scientists were dependent on the genomes of present day human beings and extrapolating the information into the past. This method is called deduction. This is a scientifically valid exercise, but it is indirect and involves uncertainties. Paabo developed methodologies that have eliminated deductions, and **rely on direct observation**. For example, he realised that one particular skull bone, called petrous, preserves DNA better than the rest of the body.

There are extreme technical challenges in his work because with time DNA becomes chemically modified and degrades into short fragments. Only trace amounts of DNA are left after thousands of years. Exposure to the natural environment leads to contamination with DNA from bacteria and contemporary humans. This makes research complex.



Source: Nobelprize.org. DNA is localized in two different compartments in the cell. Nuclear DNA harbors most of the genetic information. After death, DNA is degraded over time and ultimately only small amounts remain. It also becomes contaminated with DNA from bacteria etc.

### Significance

**First**, Svante Pääbo established an entirely new scientific discipline, called **paleogenomics**, that focuses on studying the DNA and genetic information of extinct hominins through reconstruction.

**Second**, Pääbo's discoveries have established a unique method, which is **utilized extensively** by the scientific community to **better understand human evolution and migration**.

**Third**, Pablo's work enabled the revelation and understanding of how **gene transfer had occurred from hominins** (now-extinct species of apes that are believed to be related to modern humans) **to Homo sapiens** following their migration out of Africa around 70,000 years ago. It helped in greater understanding about how ancient gene sequences from past ancestors (apes) have shaped modern human physiology including immune systems.

**Fourth**, his work also led to the sensational **discovery of a previously unknown hominin**, which has been named **Denisova**.

### Nobel Prize in Chem-istry, 2022

The Nobel Prize 2022 in Chemistry has been awarded to three scientists, Carolyn Bertozzi and Barry Sharpless of the United States and Morten Meldal of Denmark.

Barry Sharpless and Morten Meldal have been awarded the Nobel Prize in Chemistry 2022 because they brought chemistry into the era of functionalism and **laid the foundations of Click Chemistry**. Carolyn Bertozzi took click chemistry to a new dimension and began using it to map cells. Her bio-orthogonal reactions have contributed to **more targeted cancer treatments**, among many other applications.

### About Click Chemistry

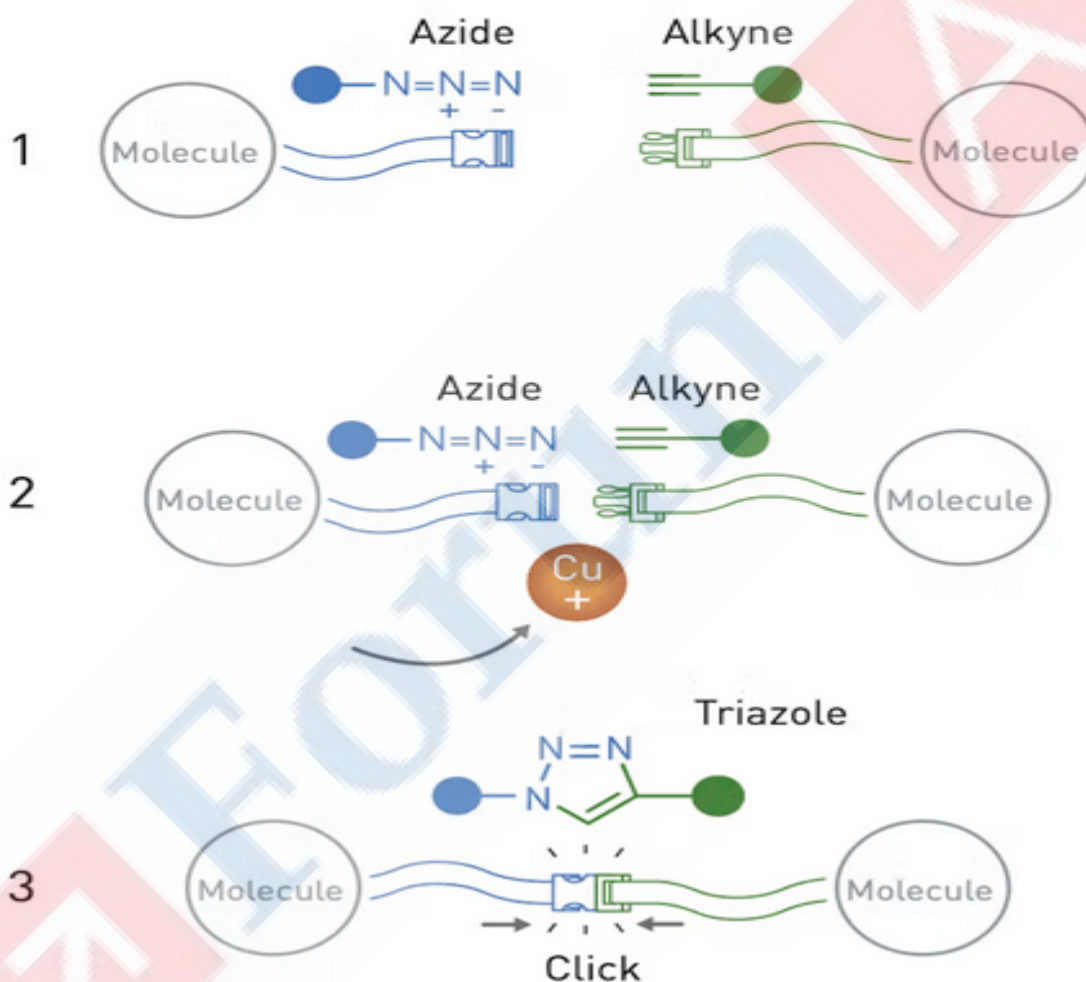
Chemists often try to **recreate complex chemical molecules found in nature**. This has applications in multiple fields including in the field of medicine e.g., to target and block pathogens in cells. However, this process is generally **complicated** and **time-consuming**.

Click Chemistry is a way of generating products that follow examples in nature. It is based on the premises that it is easier to produce complex molecules starting with smaller and simple molecules that have a tendency to bond together or easily react with each other. In other words, scientists should look for molecules that **easily fit into each other, or 'click' with each other**. It makes the resultant chemical reaction more efficient. This approach may **avoid many unnecessary side reactions** with a **minimal loss of material**. The idea is also to not generate the exactly same complex molecule, but to find molecules that fulfil the same functions as complex molecule.

This click approach emphasised the need to **replicate nature's efficiency**, not its processes, or products. The name 'click' has been taken from the click sound that airline seat belts make when they are fastened.

# The click reaction that changed chemistry

Azides and alkynes react very efficiently when copper ions are added. This reaction is now used globally to link molecules together in a simple manner.



Source: The Royal Swedish Academy of Sciences. The image shows that molecules Azide and Alkyne do not readily react with each other. Adding Copper ions, makes them to undergo reaction with each other easily (they 'click') to form the molecule Triazole.

## Significance

**First**, the concept of click chemistry is extremely beneficial to the pharmaceutical industry because it **reduces waste produced during chemical reactions**.



**Second**, Meldal through his experiments came up with the useful chemical structure called triazoles, which are stable and are found in pharmaceuticals, dyes and agricultural chemicals.

**Third**, Bertozzi has continuously improved her approach over the years. Her works **show promise in treating late-stage cancer**. Clinical studies of anti-cancer medicines inspired by her work are now undergoing clinical trials.

### Nobel Prize in Physics, 2022

The Nobel Prize 2022 for Physics has been awarded to three scientists, Alain Aspect, John F Clauser and Anton Zeilinger, for their work on quantum mechanics. They have been awarded for their experiments with **entangled photons**, establishing the violation of Bell inequalities and **pioneering quantum information science**.

### About Quantum Entanglement

Quantum Entanglement has been an intensely debated phenomena in Physics. Albert Einstein had described this as 'Spooky Action at a Distance' (i.e., scary or ghostly). According to the **Special Theory of Relativity, no signal or information can travel faster than the speed of light in vacuum**. However, in the Quantum Entanglement phenomena, **information between 'entangled particles' seems to violate this principle** (travel faster than light). It had been proposed (in 1930s by Einstein among others) that the phenomena of entanglement is not 'real' and there was something missing in the conception of Quantum Mechanics. In 1964, a physicist John Bell showed mathematically what was required to be done by experimentalists to establish the phenomenon of entanglement. He proposed the **Bell's Inequality**, which if maintained in the results of the experiment, would mean that Einstein was right (i.e. Entanglement is not 'real'). If violated, it would prove the predictions of Quantum Theory.

Aspect, Clauser and Zeilinger conducted a series of experiments on **entangled quantum states**, where **two separate particles behave like a single unit**. Clauser and Zeilinger worked on Bell's ideas, and their measurements **supported quantum mechanics by violating a Bell Inequality**. The experiments of three scientists have conclusively established that the **'entanglement' phenomenon observed in quantum particles is real**, and not a result of any 'hidden' or unknown forces. Their work has demonstrated a phenomenon called **quantum teleportation**, which makes it possible to move a quantum state from one particle to one at a distance.

### Significance

**First**, Their works could be utilised to make revolutionary **technological advances in computing**.

**Read More:** [Quantum Computing: Uses, Challenges and India's Initiatives – Explained, pointwise](#)

**Second**, There is potential for secure encrypted quantum communication which is claimed to be 'hack-proof'.

**Read More:** [Quantum Key Distribution](#)

**Syllabus:** GS III, Science and Technology: Developments and their applications and effects in everyday life.

**Source:** [Indian Express](#), [Indian Express](#), [Indian Express](#)

**[Yojana October Summary] Green Telecom – Explained, pointwise****Introduction**

With the advent of 5G Technology it is expected that there will be significant rise in towers, small cells and BT Stations (Base Transceiver). It is feared that it will result in accelerating Green House Gas (GHG) and Carbon emissions, contributing to global warming. To reduce the adverse effect on the overall ecosystem by the telecom sector, steps must be taken towards 'Green Telecom', to lessen energy consumption and migrate towards renewable sources of energy to mitigate the impact of global warming.

**Contribution to Climate Change**

Climate Change is the biggest challenge the world is facing today. This necessitates collective action by all countries to come together and discuss measures to curtail the GHG emissions in the atmosphere. All sectors like Agriculture, Industry, Services sector, etc., have to take corrective steps to mitigate the effects of climate change for a balanced ecological system.

Telecom services have become an integral part of our lives, being central to **communication, information and entertainment**. Telecom towers play a pivotal role in this process. The operations of these towers require electricity on a continuous basis for interruption-free telecom services. The electricity comes mainly from the power grid. A majority of electricity comes from emission intensive thermal power plants. Moreover when there are power cuts, the operations of these towers is supported by Diesel Generator (DG) Sets and battery back-up. Both the grid energy and DG sets contribute to the emission of Green House Gases, thus **increasing the carbon footprints**. A [TRAI Report](#) (2011) had estimated that **Telecom Infrastructure contributed about 1% of India's carbon emission** (annual). The proportion may have risen given rapid expansion in telecom infrastructure in the last decade. In addition, the energy consumption through these towers entails a significant amount of operational expenditure to the telecom service providers. This necessitates move towards Green Telecom.

**Expanding Telecom Infrastructure**

India's telecom market is the **second largest** in the world in terms of subscriptions. The market is characterised by one of the lowest broadband rates in the world. As per the latest TRAI report, India had 1.15 billion mobile subscriptions and about 800 million broadband connections as of May 2022. There are more than 7 lakh telecom towers spread over the length and breadth of the country. These towers house mobile transmitters and receivers (called Base Trans-Receiver Systems or BTS) at their base and antennas are mounted over these towers to transmit and receive mobile signals for connectivity with mobile devices.

Due to the pandemic, there has been a rapid growth in mobile broadband as people are using broadband for connecting through video-conferencing and using payment through applications like Unified Payment Interface (UPI). The proliferation of mobile and broadband has led to an increase in the number of towers, small cells, and BTSs.



Source: Yojana October 2022

A significant number of towers are in rural and hilly areas where the grid power supply is not very stable. There are frequent power cuts in many rural areas. As a result, these towers have to depend upon DG sets. It is expected that the advent of 5G technology will lead to a significant rise in the number of towers, small cells, and BTS (or equivalent electronics) resulting in an acceleration in GHG and carbon emissions, and the resultant contribution to the overall global warming.

### Green Telecom

To ensure a Green Telecom sector and to reduce the adverse effect on the overall ecosystem, there is a need to take steps on the two main fronts.

**First,** Reducing the energy consumption of the electronics, designing eco-friendly buildings, consumables, and effective network planning with the overall aim to reduce power requirement.

**Second,** Migrating towards renewable sources of energy to mitigate the effects of global

#### Reducing the Energy Consumption

There are ways to reduce the energy consumption of the electronics used in providing telecom services including those based on 5G technology.

**Use of 5G Technologies:** In the 5G technology, the energy issues are handled from the design stage itself. Unlike earlier technological evolutions (2G, 3G, 4G), 5G technology takes care of network energy efficiency. The **energy efficiency** of future network like 5G is expected to be **improved by a factor of twenty** as compared to LTE/4G technology. 5G technology will also help in the **most efficient and flexible allocation of resources** for providing telecom and broadband services. It will help in power management at the equipment level itself, thus reducing not only power requirement but also the need for air conditioning. Further, 5G technology will allow **flexible use of spectrum** which is an essential element for wireless communication. This will have a direct impact on energy consumption.

**Efficient Use of Network Operations:** Traditional (4G and earlier) mobile networks spend only about 15% to 20% of overall power consumption on actual data transfer. The rest is wasted because of heat loss in power amplifiers (equipment kept running when no data is being transmitted), inefficient cooling systems and battery units. New approaches are needed to



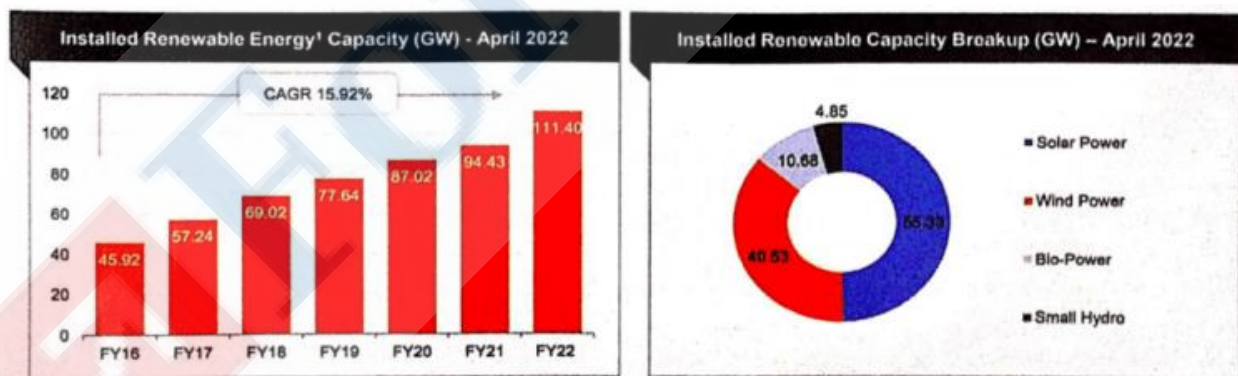
eliminate the energy wastage or harness that wasted power for other purposes by: **(a) Cell switch-off techniques**, i.e., by turning Radio-Frequency (RF) chains off when not in use and keeping only backhaul links alive; the base station is only changed to active mode when a signal is sensed. This can reduce base-station energy consumption by up to 40%; **(b) Introducing smart shutdown techniques using Artificial Intelligence (AI)** across multiple sites and radio networks to reduce power consumption; **(c) Use of single Radio Access Network (RAN) platforms**, in which a single base station supports 2G, 3G, 4G, and 5G technologies, thus replacing multiple pieces of equipment and reducing total power consumption; **(d) Shutting down old 2G, 3G Technology-based systems**; **(e) Use of Dynamic Spectrum Sharing (DSS)**, which allows new mobile technologies to make use of older networks' spectrum, sharing it on a dynamic basis; **(f) Installing Internet of Things (IoT) sensors on infrastructure to monitor energy usage** and quality of service, in real-time; **(g) Use of AI & Machine Learning (ML) techniques to support network automation**, and allocation of resources in an intelligent, proactive, and most power-efficient manner; **(h) Use of Self-Organising Networks (SON) with AI capabilities to help make near real-time decisions to self-optimize the network with the aim to save power.**

**Use of end-to-end intelligent power systems:** The combination of cloud infrastructure and AI in mobile networks can enable telecom service providers to move towards fully intelligent power-systems. A cloud-based system can coordinate base stations, power supplies and other equipment so that power supplies become intelligent and efficiencies are made throughout the network. In future, full AI-based intelligence energy systems will emerge in which different levels of power can be automatically made available depending on the time of day or application.

### Migrate towards Renewable Sources of Energy

Telecom towers consume 65-70% of energy from the operations of telecom networks. To reduce the impact on environment, there is an urgent need to move to renewable sources of energy for telecom towers, i.e., Green Telecom towers for energy saving.

India was ranked fourth in wind power, fifth in solar power, and fourth in renewable power installed capacity, as of 2020. As per the Central Electricity Authority report, the total installed capacity increased by CAGR 15.92% between the Financial Years 2016-22.



Source: Yojana October 2022

**Solar Power:** India is favourably located in the solar belt (40°S to 40°N), and hence, one of the best recipients of solar energy. Solar energy generation has increased by more than 18 times from 2.63 GW in March 2014 to 49.3 GW at the end of 2021. Compared to diesel, solar electricity offers a sustainable, cost-effective, and environment-friendly electricity supply for the growing telecommunication industry. There are new **hybrid models** where power is drawn from both the grid and solar cells, thus reducing the dependence solely on grid and DG sets.



**Wind Power:** Wind power generation along with solar power generation (hybrid renewable power) is becoming quite popular. Conversion of wind energy has been expensive so far, along with the impact of a variable resource on the grid and siting. However, technology has advanced rapidly in recent years to accommodate these factors.

**Geothermal Power:** It is a renewable form of energy utilising underground hot water or steam created by the natural heat beneath the earth's surface. Low-temperature geothermal sources can be utilised to heat and cool by installing heat pump systems. Hot water or steam from high temperature geothermal sources can be used to power turbines to produce, clean and renewable electrical energy.

**Fuel cell:** A fuel cell combines hydrogen and oxygen to produce electricity, heat and water. Fuel cells operate best on pure hydrogen. Fuels like natural gas, methanol or gasoline can be reformed to produce the hydrogen required for fuel cells.

**Other innovative solutions:** Wave power, tidal power, and ocean currents can also be used to drive turbines to generate electricity. Technologies to harness these forms of power are presently being developed to the stage of commercialisation.

### Barriers to Renewable Energy Implementation

There are significant barriers to the implementation of renewable energy for Green Telecom that need to be addressed.

**First,** Many renewable energy technologies remain expensive on account of higher capital costs, compared to conventional energy supplies for bulk energy supply to urban areas or major industries.

**Second,** Implementation of renewable energy technologies needs significant initial investment and may need support for relatively long periods before reaching profitability.

**Third,** There is still a lot to be done for consumer awareness of the benefits and opportunities of renewable energy.

**Fourth,** Financial, legal, regulatory, and organisational barriers need to be overcome in order to implement renewable energy technologies and develop markets in India.

### Conclusion

With the proliferation of broadband and mobile devices, there has been significant growth in the number of telecom towers and associated electronics at the Base-Stations (electronics below the telecom towers). It is expected that the 5G technologies-based mobile network will be rolled out and expanded quickly in India. This will increase the number of towers and small cells significantly. To reduce the impact on environment, it is necessary to ensure a Green Telecom Sector. The Government should push adoption of the latest technologies to reduce power requirement. Moreover, the Government should accelerate the pace of the transition towards sources of green energy. This will in-turn reduce the GHGs and carbon emissions, thus helping in maintaining the ecological balance.

**Syllabus:** GS III, Conservation, Environment Pollution and Degradation.

**Source:** Yojana October 2022

## Oil Production in India – Explained, pointwise

### Introduction

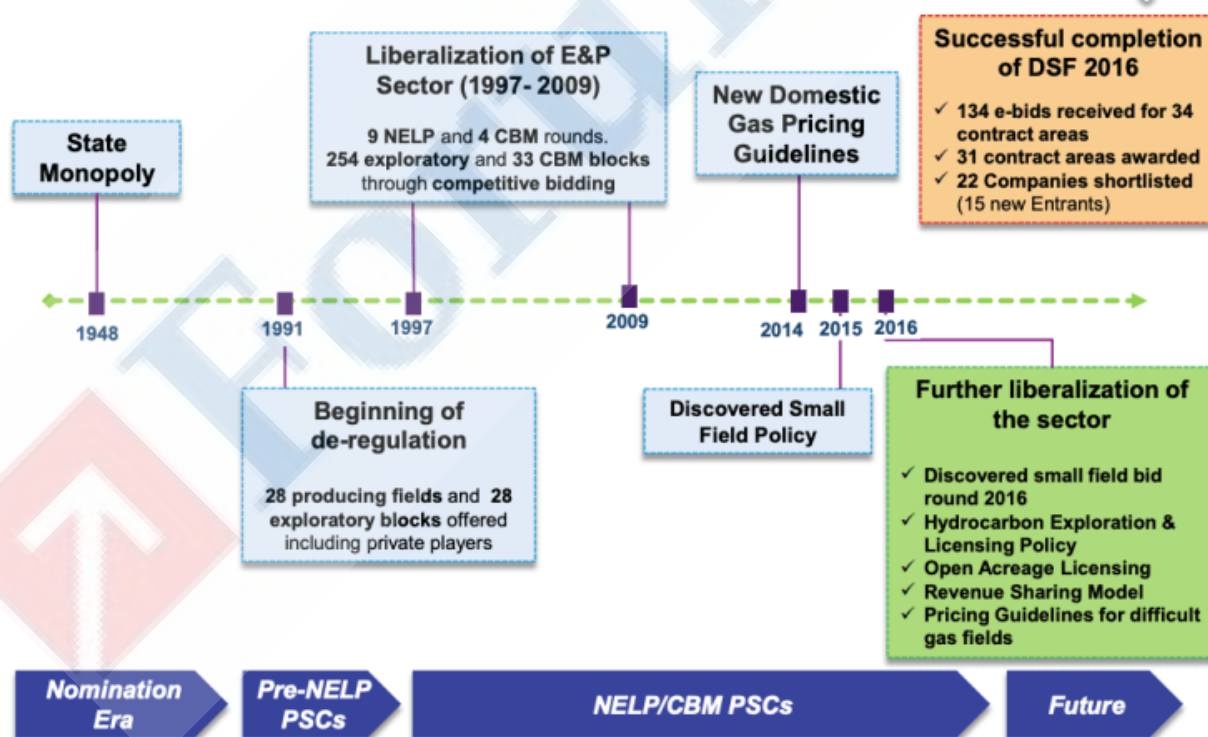
India's domestic crude oil production has been on a consistent decline. In FY2021-22, it slipped to 28.4 million metric tonnes (MMT). This is the **lowest domestic oil production in over two decades**. India is the third-largest consumer of oil in the world. Low domestic oil production forces India to meet 85% of its needs through imports. The fall in production has been attributed to the ageing wells. Despite several initiatives by the Government, the oil exploration and production activities have not picked up in India. The persistent uncertainties due to Russia-US tensions amid Ukraine war, clubbed with possibility of recession and falling exports have made it all the more important to boost domestic production in India. The Government recently offered 26 blocks (areas) for finding oil and gas through international competitive bidding under the Hydrocarbon Exploration and Licensing Policy (HELP).

### What is the policy framework for Oil Exploration and Production in India?

The Hydrocarbon Exploration and Licensing Policy (HELP) was passed in March 2016. It replaced the earlier New Exploration Licensing Policy (NELP).

For a long period since the Independence, oil exploration and production was the exclusive domain of the Government. The Government began to liberalize the sector in 1991. In 1997, the **New Exploration Licensing Policy (NELP)** was launched, which tried to attract oil explorers through competitive bidding process.

## Exploration and Production Regime in India



Source: Directorate General of Hydrocarbon

HELP was launched with the expectation of **reducing India's dependence on imports** by **increasing the domestic production of oil and gas** and thereby generating employment. HELP unifies the authority to grant licenses for exploration and production (E&P) of conventional and unconventional oil and gas resources, including oil, gas, coal bed methane, shale gas/oil, tight gas, and gas hydrates.

Under NELP, the oil production companies had to wait for the Government to invite bidding for oil blocks. The exploration and production was restricted to areas (blocks) opened by the Government. HELP introduced an **Open Acreage Licensing Policy (OALP)** that will **allow companies to approach the government at any time and seek permission to explore any block**. It also gives companies access to the National Data Repository (NDR) maintained by the government, to consult these maps and data to help inform them about which areas to bid on.

#### **National Data Repository**

National Data Repository (NDR) is a government-sponsored **Oil Exploration and Production data bank** with state-of-the-art facilities and infrastructure for preservation, upkeep and dissemination of data to enable its systematic use for future exploration and development. It comes under the Directorate General of Hydrocarbons (DGH). It has been operational since July 2017. The data stored in NDR include: **(a)** Seismic Data; **(b)** Well & Log Data; **(c)** Spatial Data; **(d)** Other Geological and Geophysical (G&G) data like Drilling, Reservoir, Production, Geological, Gravity & Magnetic etc.; **(e)** Reports and Documents.

#### **What are the benefits of HELP?**

**First**, The Profit Sharing contract has been replaced with **Revenue Sharing contract**. It will encourage cost efficiency. The Government will also not be concerned about the costs incurred by the explorer and need not scrutinize the costs. The explorers will be incentivised to start production as soon as possible. In the profit sharing contract (under NELP), the explorer was allowed to recover costs incurred in exploration activities (like drilling wells, creating infrastructure) before sharing the profits with the Government.

**Second**, There is a **single uniform licence** for all forms of unconventional hydrocarbons like shale oil, Coal Bed Methane (CBM) etc.

**Third**, Prices have been freed of Government regulation. The oil production companies will be able to charge a competitive market price subject to a ceiling. This ceiling is the landed price of alternative fuels.

**Fourth**, under NELP, bids could be placed only for the blocks which were put on auction by the Government. Under HELP, open acreage policy will prompt the oil exploration and production companies to study NDR data and bid for any area they feel has high potential oil reserves.

**Fifth**, Lower royalty for explorers drilling in offshore areas to compensate the companies for the risks involved as costs incurred in these areas is

Policy category	HELP	Pre-HELP
<b>Types of hydrocarbon</b>	Covers all conventional and unconventional oil and gas	NELP covered only conventional oil and gas; Coal Bed Methane Policy covered coal bed methane
<b>License</b>	A single license for exploration and extraction of all types of oil and gas	Separate license required for conventional oil and gas, coal bed methane, shale oil and gas, and gas hydrates
<b>Revenue model</b>	Revenue-sharing model under which revenue will be shared with the government in the ratio submitted by bidders	Production/profit-sharing model under which government received a share in the profits
<b>Coverage</b>	Open acreage policy under which exploration companies can apply to explore any block not under exploration	Exploration was restricted to blocks opened for bidding by the government
<b>Oil and gas pricing</b>	Companies have the freedom to sell their production domestically without government intervention	Crude oil price was based on import parity; gas price was fixed by the government
<b>Royalty</b>	Concessional royalty for deep water (5 percent) and ultra-deep water (2 percent) areas, which are difficult to explore, and reduction of royalty in shallow waters (from 10 percent to 7.5 percent)	12.5 percent for the onshore areas and 10 percent for offshore areas; 10 percent for coal bed methane

### What are the reasons for falling Oil Production in India?

The domestic oil production in India has witnessed a consistent fall.

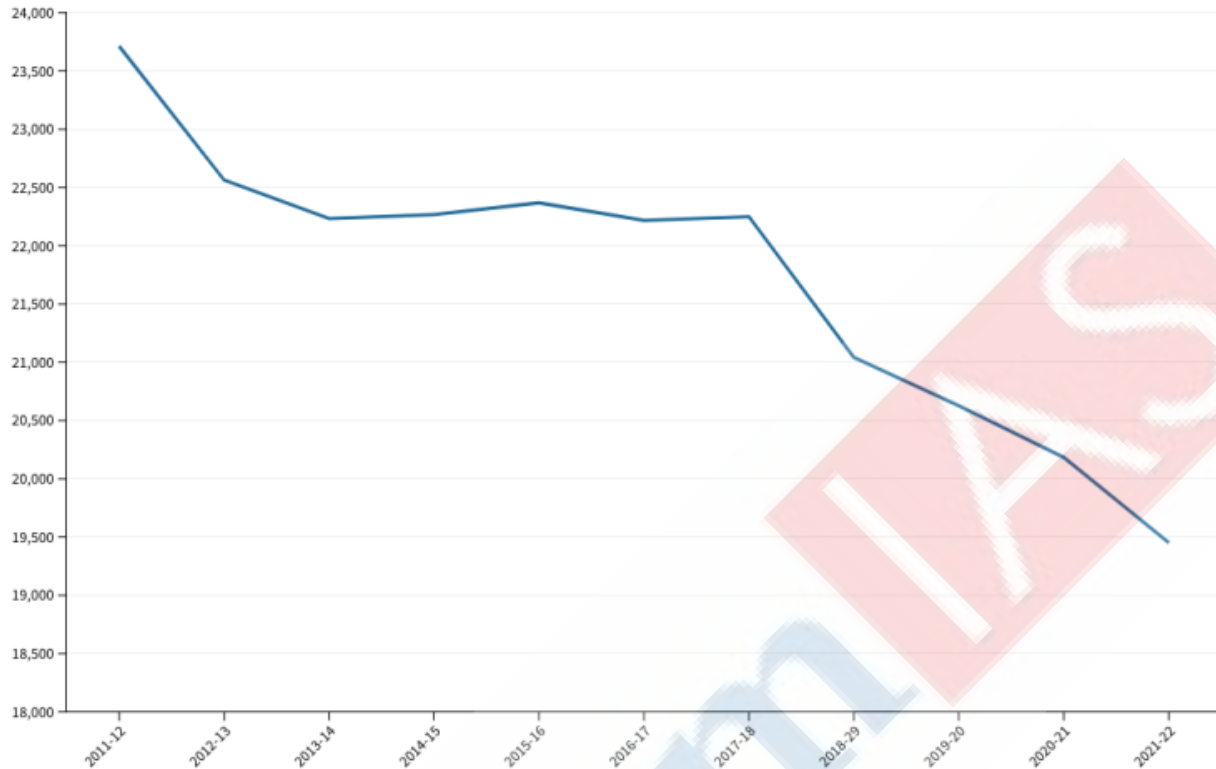




Source: *The Hindu*. The domestic oil production has been falling consistently since 2015-16. The production was 35.9 MMT in 2014-15. It has fallen to 28.4 MMT in 2021-22.

**Ageing wells:** Most of India's crude oil production comes from ageing wells that have become less productive over time. A **lack of new oil discoveries** in India coupled with a **long lead time to begin production from discovered wells** has led to a steady decline in India's crude oil production. The output of these ageing wells is declining faster than new wells can come up.

**Dominance of State-owned Companies:** Crude oil production in India is dominated by two major state-owned exploration and production companies, ONGC and Oil India. These companies are the key bidders for crude oil block auctions and end up acquiring most of the blocks that are put up for auction. Critics argue that over the years, ONGC has become a less efficient explorer. Rather, the focus has been more on acquisitions, not all of which make economic sense. ONGC has failed to strike a major oil reserve since the discovery of Bombay High.



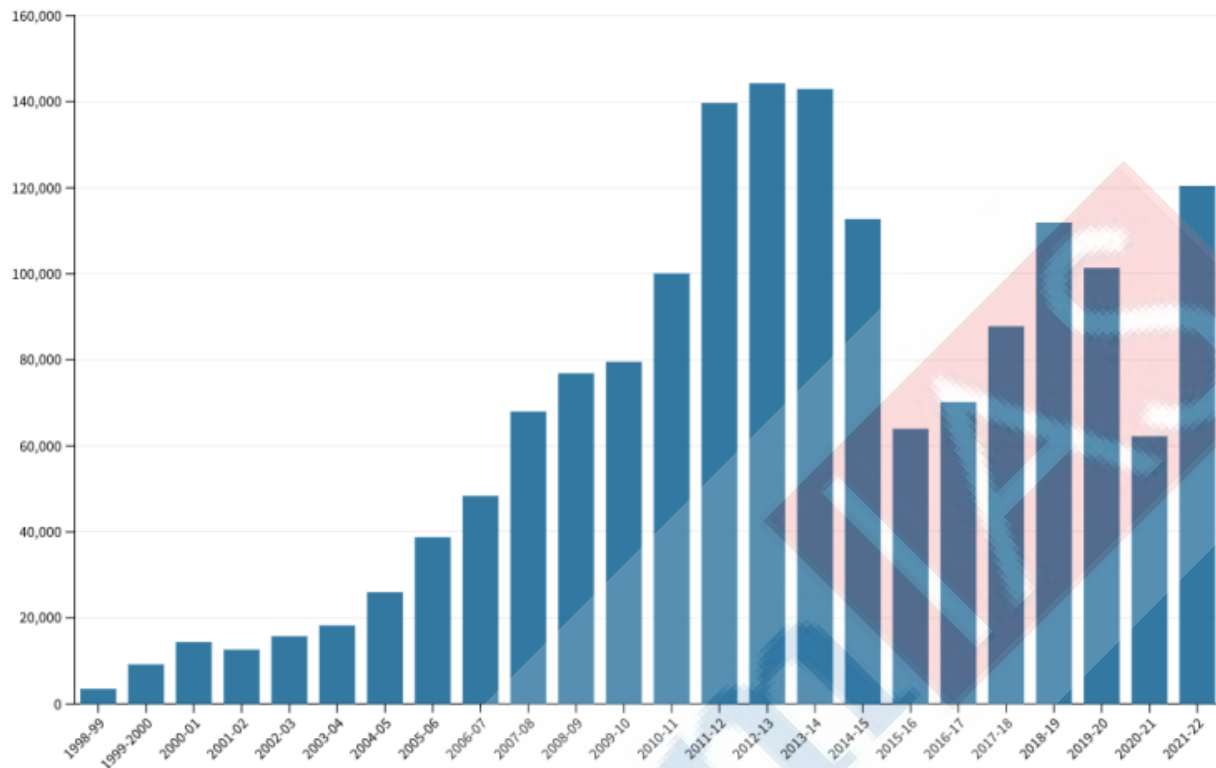
Source: The Hindu. The oil production by ONGC has been declining consistently since 2012-13 (23.7 MMT). ONGC produced 19.5 MMT in 2021-22.

**Policy Issues and Lack of Private Participation:** There are very few private players in the oil exploration sector. This is because of long delays in the operationalisation of production even after an oil block is allotted due to delays in approvals. Moreover, the Cairn Energy fiasco has acted as deterrent for foreign investors. The Government had made a **retrospective tax demand** from Cairn. Cairn won an international arbitration award against the Government, The matter was finally settled with payment of compensation by Government to Cairn Energy. The whole episode has **deterred foreign companies from investing in India**, despite very favourable terms under HELP.

**High Royalty:** Some experts say the high royalties make it unviable for the oil companies to invest in further exploration and production.

#### Why is boosting Oil Production crucial for India?

**High Import Bill:** Over time, India's crude consumption has soared. This has led to higher reliance on imports. In FY2021-22, India's crude oil import bill has risen to US\$ 120.4 billion as the crude prices surged. A higher import bill is detrimental to the macroeconomic situation as it widens the trade deficit and put pressure on Government finances and forex reserves.



**Source:** *The Hindu*. India's highest oil imports were in 2012-13 (US\$ 144.3 billion). The fall in global crude oil prices reduced the imports in the following years. However, imports are rising again due to rising demand and prices.

**Energy Security:** India's economic growth is closely related to its energy demand, therefore, the need for oil and gas is projected to grow more. Although, the Government has aggressively pushed renewable energy (especially in the electricity mix), the demand for oil and gas is expected to remain high for transportation and fertilizer sectors. According to the International Energy Agency (IEA), consumption of natural gas in India is expected to grow by 25 BCM, registering an average annual growth of 9% until 2024.

**Inflationary Pressures:** High oil prices contribute to higher domestic inflation, including high food prices. This impacts the poor the most.

#### What steps can be taken to enhance Oil Production in India?

According to a former Secretary with the Govt and oil and gas expert, following steps can be taken to boost domestic production:

**First,** The Government should **incentivize the domestic producers** to increase production. This can enable production of additional 18 MMT of oil in the country, saving ~US\$ 10 billion per annum over the current import bill (~6-7% reduction).

**Second, alternative measures** should be explored to reduce dependence on imports e.g., producing **syngas from coal**.

**Third,** some provisions of the Mining Act can be changed by adopting the model of Long-Term Production Sharing Contract (PSC) Extension of Oil Blocks for 50 years. This will enable better management in terms of planning and reservoir management.

**Fourth**, the Government need to **lower the effective levies** (including royalties, cess etc.) from 67% to 40% for pre-NELP blocks. However, this should be conditional upon **investment of surplus revenues to boost oil production** through deployment of **enhanced recovery technologies**.

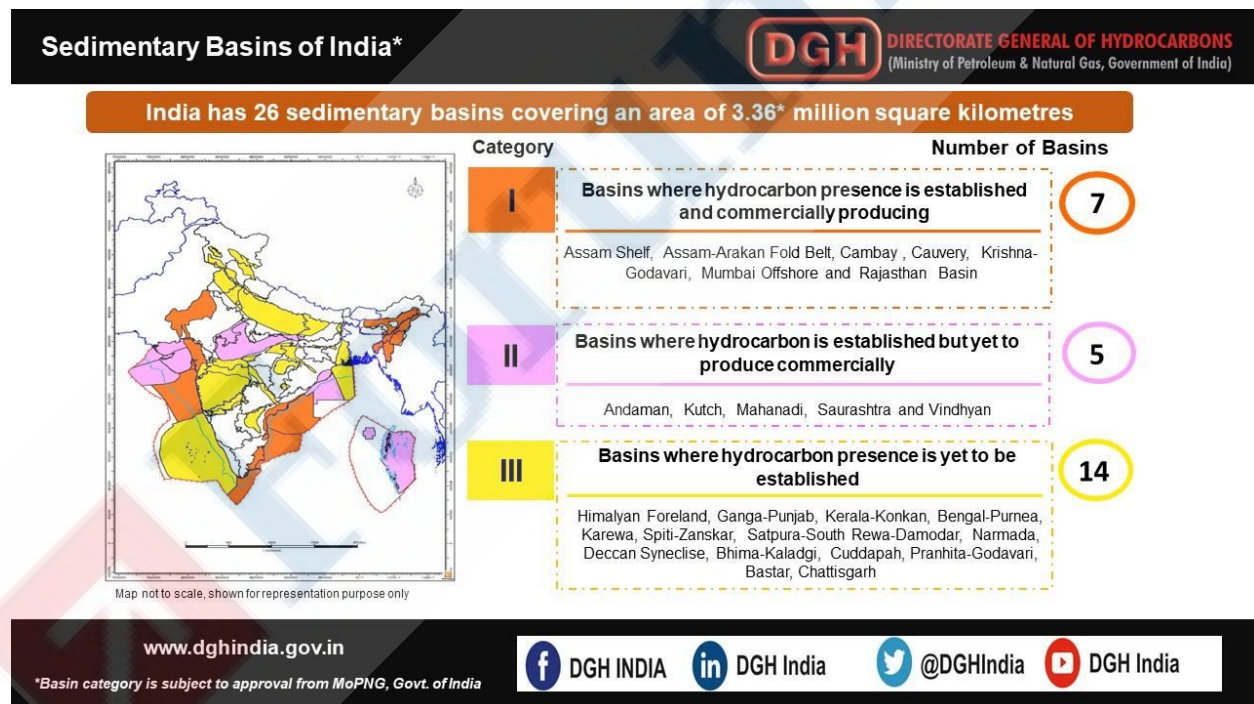
**Fifth**, the Government should bring **import parity** in the oil & gas value chain by imposing customs duty on crude, on a par with domestic sales tax. This will ensure a level playing field for domestic crude apart from bringing in additional revenue of ~US\$ 7 billion.

**Sixth**, new fields have long gestation periods. To bring down the cost, the Government should rework the tax for the pre-NELP blocks that constitute the bulk of domestic production today. This should be supplemented with reduction in royalty.

**Seventh**, The Chinese government offered a **floor price to oil producers**, insulating them to an extent from any sharp falls in international crude prices. This strategy can be adopted by the Indian Government as well.

### Conclusion

The demand for oil will continue to remain high despite the expected green energy transition. The Government has taken proactive steps like improved exploration policy, building strategic oil reserves and acquisition of overseas oil assets by ONGC. Now the Government should focus on boosting domestic oil production which can be the most potent step in enhancing India's energy security.



Source: DGH

**Syllabus:** GS I, Distribution of key natural resources across the world; GS III, Infrastructure: Energy.

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



## India Taiwan Relationship – Explained, pointwise

### Introduction

Two recent developments have brought the India Taiwan Relationship into focus. The first was the **China-Taiwan crisis** precipitated by the visit of Speaker of the US House of Representatives to Taiwan in early August 2022. The ensuing crisis and possibility of Chinese invasion on Taiwan led to worries about disruption in the supply chain of semi-conductor chips used in digital devices. Taiwan is the biggest manufacturer of such chips. The second event was **signing of MoU between Government of Gujarat and Vedanta-Foxconn Joint Venture** in September 2022 to set-up semi-conductor chip manufacturing plant in Gujarat. Foxconn is Taiwan based company and is one of the world's biggest largest technology manufacturer. India Taiwan Relationship has remained subdued, with the Government of India maintaining restraint in order not to offend Chinese sensitivities. However, many foreign policy experts content that India should pursue its relationship with Taiwan with more vigour and counter the rising Chinese aggression.

**Read More:** [China-Taiwan Crisis and its Implications for India – Explained, pointwise](#)

### How has India Taiwan Relationship evolved?

The founder of the Taiwan (Republic of China, ROC), Chiang Kai-shek had a warm and cordial relationship with Indian leaders (especially with Gandhiji and Pt. Nehru) in the pre-Indian Independence era. Chiang was a strong endorser of Gandhiji's non-violent struggle against the British Empire. With India's Independence in 1947, the Indian and Chinese nationalist governments (under Nationalist Kuomintang (KMT) Party) established embassies in each other's countries.

However, after the Communist take-over of China in 1949, and the establishment of ROC in Taiwan, there was a change in Indian policy. India was one of the first Asian countries to recognise the People's Republic of China (PRC under Communist Party) and its **One China** principle. It put a deep freeze on the Indian Taiwan Relationship during the Cold War era.

The situation began to change post-1991 collapse of the Soviet Union and the launch of India's **Look East Policy**. In 1995, the two countries established representative offices in Taipei and New Delhi. Taiwan established **Taipei Economic and Cultural Centre** (TECC) in New Delhi and India established **India Taipei Association** (ITA) in Taipei. The two establishments have played a significant role in improving the people-to-people contacts, and in expansion of cultural, economic and political relations.

From 2010 onward, there has been a subtle shift in India's One China Policy. During the Chinese Premier's visit to India in December 2010, India did not mention support for the One-China policy in the joint communique. There has been **no official mention of One-China since then**. Even in the recent China-Taiwan Crisis, India avoided the mention of One China Policy in its official statement. Simultaneously, India and Taiwan sought to institutionalise their relations in order to boost bilateral exchanges. The TECC established a second office (in Chennai) in December 2012, and the **Taiwan External Trade Development Council** (TAITRA) opened branch offices in Delhi, Chennai, Kolkata and Mumbai.

At the political level, the **India-Taiwan Parliamentary Friendship Forum** was established in December 2016. This includes regular visit by Parliamentarians to the other country. In order to boost people-to-people interactions, Taiwan created the **Taiwan Tourism Information Center** in Mumbai in 2018.

### What is the current status of India Taiwan Relationship?

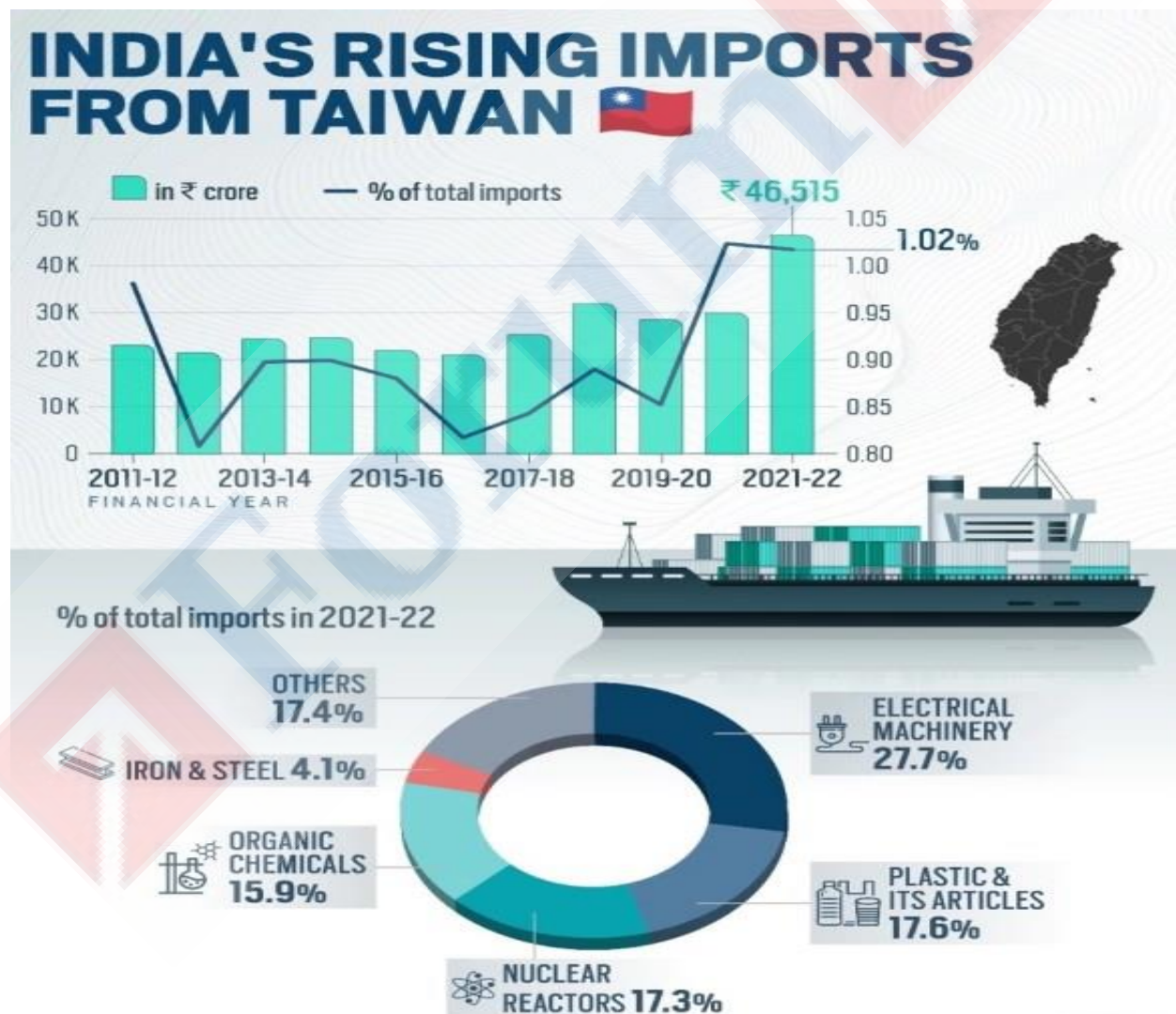
#### Strategic

India is among the 179 of the 193 member states of the UN that **do not maintain formal diplomatic ties with Taiwan**. India Taiwan relations picked up the momentum due to the **New Southbound Policy** initiated in 2016 by Taiwanese President Tsai to have **wider engagement** with potential allies and partners. Through the policy, Taiwan has comprehensive engagement with **Australia, New Zealand, India, South Asian** and **South-east Asian nations**.

Although, Indo-China relations and Indian concerns to Chinese sensitivities on Taiwan dominated the strategic partnership between India and Taiwan; in recent years border tensions with China (Doklam 2017 and Galwan 2020) have compelled India to re-think its policy on Strategic Engagements with Taiwan.

#### Trade and Investment

Bilateral trade between India and Taiwan grew from US\$ 2 billion in 2006 to US\$ 5.7 billion in 2020. India and Taiwan have started negotiations for a free trade agreement (FTA) in December 2021.



Source: India Today

Although, the bilateral trade has witnessed an increasing trend in recent times, the trade is much below potential e.g., India's exports to Taiwan contribute only 0.65% of India's total trade, while imports form 1.02% of total trade. In comparison, Taiwan's trade with China and the US amounted to US\$ 149.2 billion and US\$ 83 billion in 2020. Once the FTA is signed between India and Taiwan, it is expected that the trade between the two countries will witness big jump.

Growth rates and share in India-Taiwan bilateral trade in April-March (in US\$ million)				
	Apr-Mar 2021	Apr-Mar 2022	% growth	% share in total trade
Indian export to Taiwan	1620.15	2756.70	70.15	0.65
Indian import from Taiwan	4036.75	6233.39	54.42	1.02
Source: <i>Foreign Trade Performance Analysis, Ministry of Commerce &amp; Industry, Government of India</i>				

Source: ORF

India and Taiwan signed a **Bilateral Investment Agreement in 2018** to promote flow of investment. The Agreement seeks to ensure protection for Taiwanese investments in line with international standards. This has followed the **Double Taxation Avoidance Agreement (DTAA)** signed between the two countries in 2011. The cumulative FDI inflows from Taiwan to India have been worth **US\$ 756 million between April 2000 to June 2022**. FDI inflows from Taiwan increased almost 10 times between 2017-18 and 2018-19.

In 2022, the State Bank of India raised US\$ 300 million issuing Taiwanese '**Formosa Bonds**', the first Indian commercial entity to do so.

The recently announced Foxconn-Vedanta Joint Venture to set-up semiconductor manufacturing unit in Gujarat is expected to invest ~US\$ 20 billion over the next few years.

#### Cultural

Taiwan is aiming to strengthen cultural and people-to-people ties with India's Northeastern region by exploiting its '**tea culture**' as a new form of soft power diplomacy.

Since 2004, Taiwan has been offering 'Taiwan Scholarship' and 'National Huayu Enrichment Scholarship' to Indian students to study in Taiwan.

In 2018, India hosted the first ever Taiwan Film Festival in an effort to showcase and promote Taiwanese culture in India.

The number of Indian tourists to Taiwan has remained at ~40,000 annually, and an even fewer number of Taiwanese travels to India as tourists. One major issue is the absence of an Indian overseas tourism office in Taipei (tourism matters relating to Taiwan have been taken care of by the India Tourism office in Tokyo, Japan).

#### What are the challenges in India Taiwan Relationship?

**First**, India Taiwan Relationship has been overshadowed by China's aggressive stance. Despite being silent on One China Policy in recent times, India has not openly supported Taiwan at international level e.g., India has not supported Taiwan's bid for Observer status in bodies like the WHO.

**Second**, India has not yet formally recognized Taiwan (ROC). This severely limits cooperation on strategic, military and economic spheres. The lack of formal linkages has also restricted ministry-level agreements and educational exchanges, leaving the potential of India-Taiwan ties unrealised and dormant.



**Third**, the progress of the India Taiwan Relationship has lacked a long-term strategic vision because of external uncertainties. The approach has been ad-hoc. As a result, trade and investment has remained much below potential e.g., Taiwan's FDI in the US was US\$ 13.7 billion in 2020 and US FDI in Taiwan was US\$ 31.5 billion.

**Fourth**, Economic cooperation and investments have also been limited by factors like insufficient understanding of domestic markets, corruption, tax regulations, and linguistic and cultural barriers.

#### **What steps can be taken to further deepen India Taiwan Relationship?**

A foreign policy expert has suggested a three-dimensional approach to boost ties with Taiwan.

**First**, the two countries should strive to **strengthen bilateral ties and expand areas of cooperation**. Cooperation in the fields of culture, education (student exchange), science and technology, and development assistance should be strengthened through linking the **Act East Policy** and the **New Southbound Policy (NSP)**. e.g., Recently, some Indian and Taiwanese think-tanks have concluded agreements to enhance cooperation and joint research. Taiwanese experience related to China can be utilized to enhance domestic expertise with respect to China.

**Second**, India should **engage Taiwan** through available **informal and formal regional platforms** e.g., Japan's ruling party, the Liberal Democratic Party (LDP), held a security dialogue with the Taiwan's ruling party Democratic Progressive Party (DPP) in August 2021. Such arrangement can be replicated by India. This is political engagement, yet not official as the Governments are not directly involved.

**Third**, Taiwan should be accepted as a **part of the wider Indo-Pacific region**. India and Taiwan are two vibrant democracies with shared interests and common concerns. Taiwan can be gradually involved in contributions towards ensuring a **rules-based order** in the Indo-Pacific.

Apart from the above, there are other possible steps.

**Fourth**, the Taiwanese Government has been requesting the Government to permit them to set up an office of the Taipei Economic & Cultural Centre (TECC) in Mumbai. This should be promptly granted as it would help in boosting Taiwanese investments in India.

**Fifth**, Countries like the US, Japan, South Korea, Australia and the Philippines regularly send **Parliamentary delegations** to Taiwan. India's approach hasn't been consistent in this regard (India-Taiwan Parliamentary Friendship Forum is inactive). India must institutionalize this process to ensure a regular exchange. This will strengthen political ties between India and Taiwan.

**Sixth**, India and Taiwan should push for **early closure of FTA negotiations** and conclude the Agreement at the earliest.

**Seventh**, the Parliamentary Committee on External Affairs observed in 2018 that if China was unwilling to reconsider its stance on outstanding border issues and sovereignty concerns of India, India should contemplate using all options including its relations with Taiwan. India should consider making **One China Policy contingent on China following One India Policy**.

**Eighth**, India should join the G-7 in backing observer status for Taiwan in technocratic international bodies.

#### **Conclusion**

India Taiwan Relationship has remained much below potential due to China factor. However, many policy experts have made a case for stronger ties with Taiwan, especially in the context of



rising strategic importance of semiconductor chip supply chains. India has a lot to gain from having Taiwan as a strategic partner in multiple domains. Commentators have commended India's Foreign Policy for not succumbing to Western pressures on Russia-Ukraine War or trade ties with Russia. India should extend this approach to its relationship with Taiwan to protect its strategic interests.

**Syllabus:** GS II, India and its neighbourhood relations.

**Source:** [The Times of India](#), [Foreign Policy](#), [ORF](#), [ORF](#), [Indian Express](#), [IFRI](#)

### Impact of Climate Change on Monetary Policy – Explained, pointwise

#### Introduction

The devastating effects of climate change are becoming increasingly evident. The Monsoon rainfall is becoming increasingly erratic. There is wide variation in regional distribution of rainfall, the frequency of extreme rainfall events is rising followed by prolonged dry spells. This year, the regions of East Uttar Pradesh, Bihar and Jharkhand received very low rainfall during the paddy-sowing period. Abnormal rainfall in October has damaged the standing crop. These events will lead to lower production of rice for this year's kharif season. Earlier, heat waves in March had destroyed the wheat crop. The wheat stock with Food Corporation of India has reached its lowest level in recent times. Thus the shortage will result in higher prices and inflation. Demand of energy will become volatile due to higher temperatures and extreme events, leading to more volatile prices of oil/gas in global markets. The uncertainty in prices will make it difficult for the Central Banks to intervene and control inflation. Thus, Climate Change will profoundly impact Monetary Policy.

#### What are the major impacts of Climate Change on various economic parameters?

Climate Change has posed both physical and transitions risks for the economy. **Physical risks** include **extreme weather events** (like heavy rainfall, having short and medium term impacts) and **gradual warming/slow onset events** (like desertification, having medium and long term impacts). There are **transition risks** which include risks/uncertainties associated with **transition to low-carbon economies** based on green energy resources (like Green Hydrogen) and technologies based on new approaches (like [Circular Economy](#)).

These risks will have impact on economic parameters (macroeconomic variables) like output, consumption, investment, employment, wages and inflation among others.

Variables	Type of climate risk		
	Physical Risk Extreme weather events (Short-Medium Term)	Physical risk Gradual warming/volatile temperatures and precipitation patterns (Medium-Long Term)	Transition risk Transition to low-carbon economies (Short-Long Term)
Output	- <b>Lower</b> due to physical destruction (crop failures, disruption of supply chains and tourism)	- <b>Lower</b> due to lower labour productivity, investment being diverted to mitigation, and arable land losses.	- <b>Policy uncertainty</b> due to uncertain outcomes/impacts of climate change can disrupt output across sectors.
Consumption	- <b>Lower</b> due to increased uncertainty, e.g. to future income prospects. - <b>Higher</b> due to increased household demand to replace destroyed goods.	- <b>Higher volatility</b> due to shifts in sectoral demand.	- <b>Likely lower</b> due to increased sustainability awareness (e.g. preference for circular economy). - Shift towards greener goods, but the impact on total consumption is <b>uncertain</b> .
Investment	- <b>Lower</b> due to increased uncertainty and direct destruction of the capital stock. May pick up following an extreme event to rebuild destroyed infrastructure. - <b>Diversion of investment</b> away from productivity-enhancing investment and towards mitigation.	Shifts in investment towards <b>climate adaptation technologies</b> .	- Higher in investment towards climate mitigation technologies. - Overall, <b>Lower</b> because of higher uncertainty surrounding future policies.
Productivity	- <b>Lower labour and capital productivity</b> due to (possibly permanent) capital and infrastructure destruction.	- <b>Lower labour productivity</b> because of <b>lower human capital</b> accumulation (as a result of increased health issues and mortality). - <b>Reduction in labour supply</b> in sectors such as construction and agriculture, where it becomes less desirable to work in higher temperatures.	- Effect on productivity <b>uncertain</b> because <b>technological progress</b> could offset the loss in productivity.
Employment	- <b>Lower</b> because of the <b>destruction of physical assets</b> and the <b>dislocation of people</b> from the immediate vicinity of a disaster area.	- <b>Increased international migration flows</b> , might raise the <b>labour supply in less affected regions</b> .	- Changes in sectoral composition of labour market (e.g., less supply in agriculture/construction) might trigger a rise in <b>structural unemployment</b> .

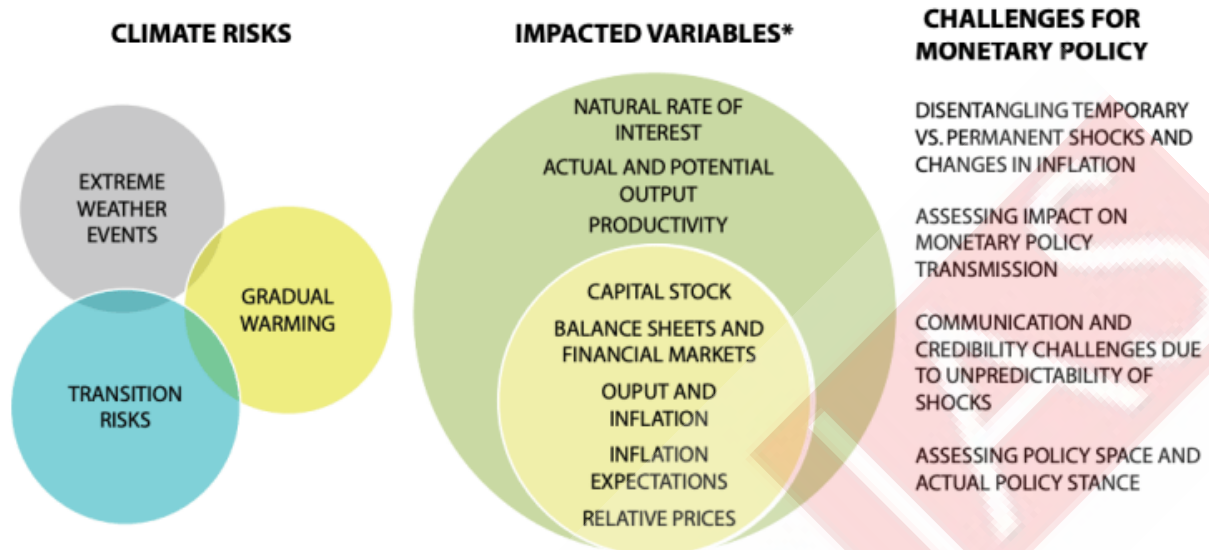
Extreme weather events will **destroy crops and infrastructure**. Thus the output will decrease in the short term (e.g., rice output is expected to fall in Kharif season 2022). Similarly, in the medium/long term, arable land might reduce due to **desertification**, reducing the output. It is feared that in the medium-long term, the **productivity levels will fall** due to higher mortality and health issues due to altered climate patterns.

Variables	Type of climate risk		
	Physical Risk Extreme weather events (Short-Medium Term)	Physical risk Gradual warming/volatile temperatures and precipitation patterns (Medium-Long Term)	Transition risk Transition to low-carbon economies (Short-Long Term)
Wages	- <b>Uneven effects</b> across sectors and economies (agriculture, tourism and construction are most exposed in developing economies). - Reallocation of the workforce can generate <b>labour shortages in some sectors</b> where wages could increase temporarily. - Wage patterns contingent on the length of the disaster effects e.g., flooding	- <b>Lower wages</b> could result from lower productivity caused by gradual warming.	- <b>Potential shift of workers</b> from one sector to another and their <b>training needs</b> .
International trade	- <b>Disruption of trade flows</b> due to disasters could lead to lower incomes. - Supply chain interruptions can lead to <b>supply disruptions</b> . - Tourism may suffer from destruction of infrastructure.	- <b>Disruption of trade routes</b> due to geophysical changes (such as rising sea levels). - Increases in average temperatures could diminish export values.	- Taxes, regulations and restrictions might <b>disrupt trade export routes</b> . Changing international demand for different types of energy products may affect energy exporters and importers differently. - Risks of distortion from unilateral climate policies.
Exchange rate	- <b>Depreciation pressure</b> on currencies of economies affected by climate disasters, because of negative <b>trade shocks</b> and <b>lower labour productivity</b> .	- <b>Depreciation pressure</b> on currencies of economies frequently affected by climate disasters and <b>losses of arable land</b> , because of extreme temperatures.	
Inflation	- <b>Increased inflation volatility</b> , especially regarding food, housing and energy prices. - Impact on inflation expectations.	- Relative price changes due to shifting consumer demand.	- <b>Energy prices affected most</b> by climate-related transition policies, such as carbon taxes. - Policy uncertainty could weigh on inflation through its impact on investment, demand and inflation expectations.

Climate induced migration will **reduce supply of labor** in regions impacted by extreme climate change events (like coastal cities at risk of submergence) and increase in regions considered safer. This will **impact wages** differently in different regions. Wages will have direct **impact on demand** and thus on **consumption, production/output** and **inflation**.

Disruption in supply chains will impact international trade. Sea level rise can impact trade routes as well. Change in **energy consumption pattern** (shift away from fossil fuels) will alter the **trading pattern** and trade balance of nations, consequently impacting **exchange rates**.

## Climate risks, macroeconomic variables and challenges for monetary policy



Source: *Climate Change and Monetary Policy*, Network for Greening the Financial System

Hence it is evident that Climate change will have a major impact on macroeconomic variables in future. The resulting changes in the economic systems will make it difficult for the Central Banks to ensure macroeconomic stability in general, and control inflation in particular. Even greater challenge is that it is **very difficult to quantify these impacts**. There is an expectation that a particular parameter (say wages) may increase or decrease (even that is not very certain), but it is very difficult to estimate by how much (5%, 10%, 20% and so on). The lack of clarity will make it difficult to take **decide the policy instrument to use** (e.g., Repo Rate/CRR/MSF etc.) and the **quantum of change** (like 5/10/15 basis points or more).

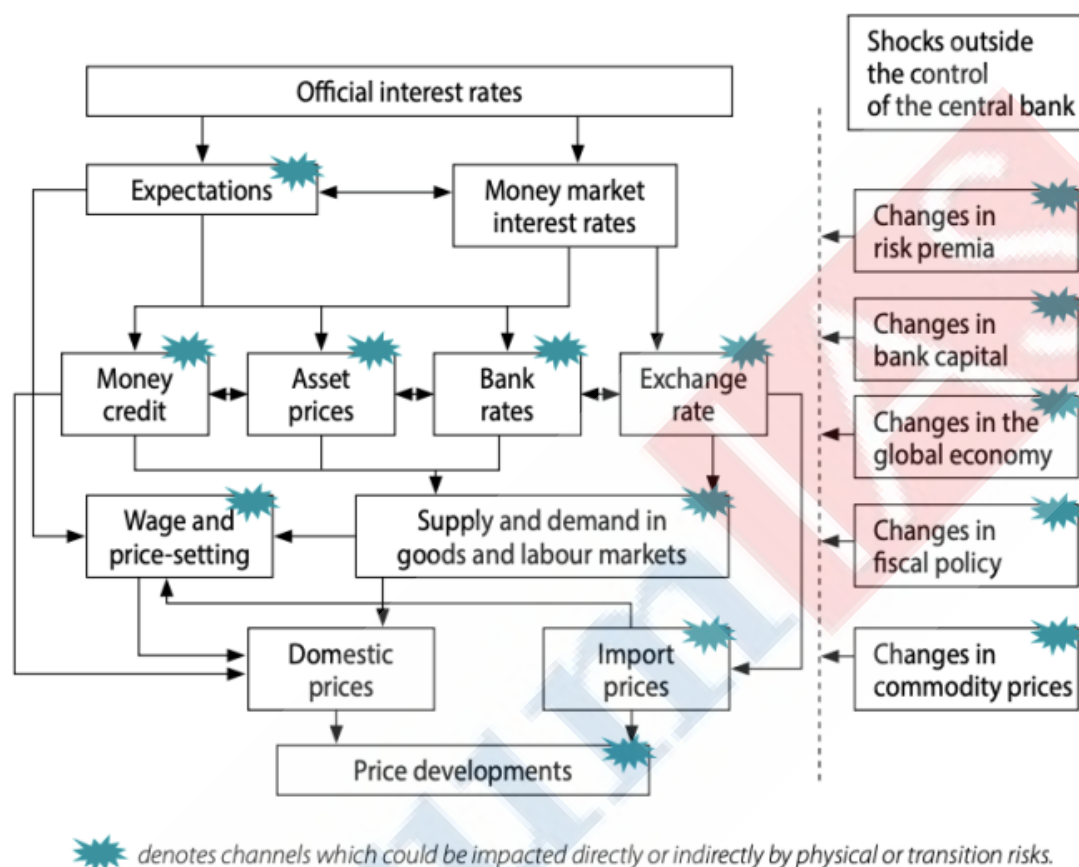
What is the impact of Climate Change on Central Bank's ability to manoeuvre Monetary Policy? Climate change events will impact the ability of the Central Banks to carry their mandates of inflation control, ensuring employment and general macroeconomic stability.

**First**, the underlying reason of climate-induced inflation is **supply-side disruptions (supply-side inflation)** e.g., fall in production of crops and the resulting food inflation. Monetary policy has limited ability to control supply side inflation. Additionally, faulty policy prescriptions (like raising interest rates) can slow down growth rate of the economy.

**Second**, climate change will impact **monetary policy transmission**. Climate change will affect the balance sheets of financial intermediaries (like Banks) and asset valuations e.g., climate related disasters (and resulting destruction of infrastructure) may force some corporates to go bankrupt thus **increasing Non-performing Assets (NPAs)**. This will negatively impact **Banks' capacity to lend** leading to discontinuity in monetary policy transmission. Additionally, some long-term investments (e.g., in coal-based thermal power plants/oil wells/coal mines etc.) may be rendered useless ('Stranded Assets') due to transition of economy towards low carbon technologies. This asset revaluation will also constrain Banks' ability to provide credit to the economy.



## Impact of climate risks on monetary policy transmission channels



Source: *Climate Change and Monetary Policy, Network for Greening the Financial System*

**Third**, the effects of climate change could make it harder for monetary policy decisions made by central banks **to affect how households and businesses can get money to spend and invest** e.g., losses from physical risks may reduce the ability of corporates to invest despite lowering of interest rates by the Central Bank.

**Fourth**, some economists argue that climate change could lower the **natural or equilibrium rate of interest** which balances savings and investment. This could **further diminish the space for conventional monetary policy** e.g., higher temperatures might impair labor productivity or increase rates of morbidity and mortality. Productive resources might be reallocated to support adaptation measures. Climate-related uncertainty may increase precautionary savings and **reduce incentives to invest**. Collectively, these factors can reduce the real equilibrium interest rate and therefore increase the likelihood that a central bank's policy rate will be constrained.

### Natural/Equilibrium Rate of Interest

The natural rate of interest is also called the neutral interest rate, neutral rate, and the **long-run equilibrium interest rate**. This interest rate is the theoretical short-term interest rate that would **support the economy at maximum output or full employment GDP while keeping inflation constant**. The neutral rate is often referred to by Central Banks when making decisions about the Bank Rate. This neutral rate is essentially the dividing line between expansionary and contractionary monetary policy.



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

**First**, There is needs to **develop a better understanding of the impact of climate change** on the macro economy, like productivity, output, inflation, risks to the financial system and the implications for monetary policy.

**Second**, the RBI and other Central Banks should **update their economic models factoring in climate change**. The update models should account for energy transition, and the impact of climate change policies of the Governments. Moreover, since there are inherent uncertainties associated with Climate Change, models must develop **scenario analysis for various possibilities**.

**Third**, Central Banks (RBI) should work closely with Market Regulators (SEBI) to develop new framework for **enhanced disclosure mechanisms related to climate-related information** (e.g., proportion of assets (say factories) located in climate vulnerable regions). This will increase general awareness and **understanding of climate risk**.

**Fourth**, Central Banks and Market Regulators should also develop and strengthen in-house **risk assessment capabilities** of climate-related risk and explore how to **incorporate climate change risk** in economic models and credit ratings. This would ensure that they reflect all relevant risks arising from climate change.

**Fifth**, Central Banks should **clearly articulate the changes in their monetary policy** in context of climate change with the corporate sector, financial markets and the general public. Clear communication is a basic requirement for the success of the Monetary Policy.

**Conclusion**

There is ample evidence to establish that climate change is a certainty. However, the impact of climate change on macroeconomic parameters in the short to long term are still uncertain and difficult to quantify. This has posed a new challenge to the Central Banks in exercising the monetary policy. Central Banks must step up efforts, undertake further research to understand climate risks and incorporate them into their economic models. A proactive approach will help in better forecasting of risks and consequently a more effective policy response to mitigate the impacts of climate change on the economy.

**Syllabus:** GS III, Indian Economy; GS III, Environmental Pollution and Degradation.

**Source:** [Indian Express](#), [IMF](#), [European Central Bank](#), [Network for Greening the Financial System](#)

**Nobel Prize in Economics 2022 – Explained, pointwise****Introduction**

The Nobel Prize in Economics 2022 has been awarded to American Economists Ben Bernanke, Douglas W. Diamond and Philip H. Dybvig. They have been awarded the Nobel for their research on banks and financial crises. Their works laid the groundwork for most of the research undertaken in the field of banking. Their research is still used to show the importance of banks in keeping the economy running smoothly, the role of bank failures in exacerbating the financial crises and the need to make the banks stronger during such crises. Their work has had a big impact on how the financial markets are regulated and how financial crises are dealt with or can be avoided.

What are the important takeaways from the research of winners of Nobel Prize in Economics 2022?

Ben Bernanke

**Bank Failure exacerbated the Crisis:** Ben Bernanke looked at the Great Depression of the 1930s, which started in the US but transformed to a global crises that lasted for almost 4 years. He argued that bank failures in the 1930s were not just a result of the Depression but also **a factor in exacerbating the crisis** itself. He argued that failures of banks resulted in inability to channelise savings to investments that could have revived the economy faster. Until Bernanke's work, bank failures were seen as a 'consequence' of the financial crisis. He proved otherwise that **bank failures were the 'cause' of the financial crisis**.

**Role of 'Bank Runs':** Bernanke also showed the 'Bank Runs' as the main reason for turning of a normal recession into economic crisis. Bank Run refers to a situation when depositors are worried about bank's sustainability and **rush to get their deposits withdrawn from the bank**. If lot of depositors withdraw the deposits at the same time, Bank won't have enough reserves to cover all withdrawal leading to **liquidity crisis** and eventually **insolvency/bankruptcy**.

**Role of the State:** Bernanke also showed that role of the State becomes vital in averting the crisis. Powerful measures by Government are required to prevent bank runs. The **deposit insurance provisions** (where a certain amount of one's deposits in a bank are insured) is a critical tool towards building trust and preventing bank runs.

Bernanke's role as the Chairperson of the Federal Reserve Bank of the US during the financial crisis of 2008 proved to be crucial in tackling the crises.

#### **Douglas Diamond and Philip H. Dybvig**

In the 1980s, Diamond and Dybvig worked together to **develop theoretical models of the roles of the banks in the economy** and the **factors that make the banks susceptible to Bank Runs**. The difference in tenures of deposits in banks (short) and the loans by banks (long) leads to **asset-liability mismatch**. Even rumours about Bank's imminent collapse can trigger panic prompting the depositors to rush to withdraw their money causing a bank run. This eventually leads to bank failure (self-fulfilling prophecy).

In 1984, Diamond also demonstrated that banks serve a "societally important function as **intermediaries between many savers and borrowers**". This is because banks are in the best position to evaluate the creditworthiness of borrowers and "**ensure that loans are used for good investments**".

Together, the research of Bernanke, Dybvig and Diamond have been instrumental in laying down the **foundation for modern bank regulations**.

#### **Model proposed by Economists**

The economists also proposed potential solutions to averting potential bank crises e.g., measures like deposit insurance and 'lender of last resort' policy. **Deposit Insurance** (by Government) can instil confidence among depositors. When depositors are sure that Government has guaranteed protection of their money, they do not rush to withdraw their deposits from banks thus forestalling bank runs. Most countries now have plans in place to protect bank deposits

#### **What is Asset-Liability Mismatch?**

**Deposits are liability for banks** (i.e., banks have to pay deposits back to depositors when demanded). Deposits are also principal source of funding for banks, which they use to lend money to others. The range of maturity period of deposits is **short to medium term** (few days to

1-2 years, sometimes up to 5 years). Banks are obligated to pay back the deposit (plus interest) at the time of maturity.

**Loans by banks are an asset** for them (i.e., banks will receive the loan back from borrower). The maturity period of loans is generally longer compared to deposits. In some cases, like loans for infrastructure projects, the term of loan can be as long as 20 years or more.

Thus there is a difference in the terms of deposits and loans. A situation in which a large number of long-term loans are provided from funds with substantially shorter maturities is referred to as having an **asset-liability mismatch**. Banks keep a certain proportion of deposits as a reserve to meet such demands of withdrawal of deposits. However, a situation may arise where the reserves set aside may not be enough to meet the withdrawal needs. This may lead to shortage of money to pay back to depositors leading to short liquidity issues.

### Consequences of Asset-Liability Mismatch

Interest rate risk and liquidity risk are the biggest repercussions of asset-liability mismatch.

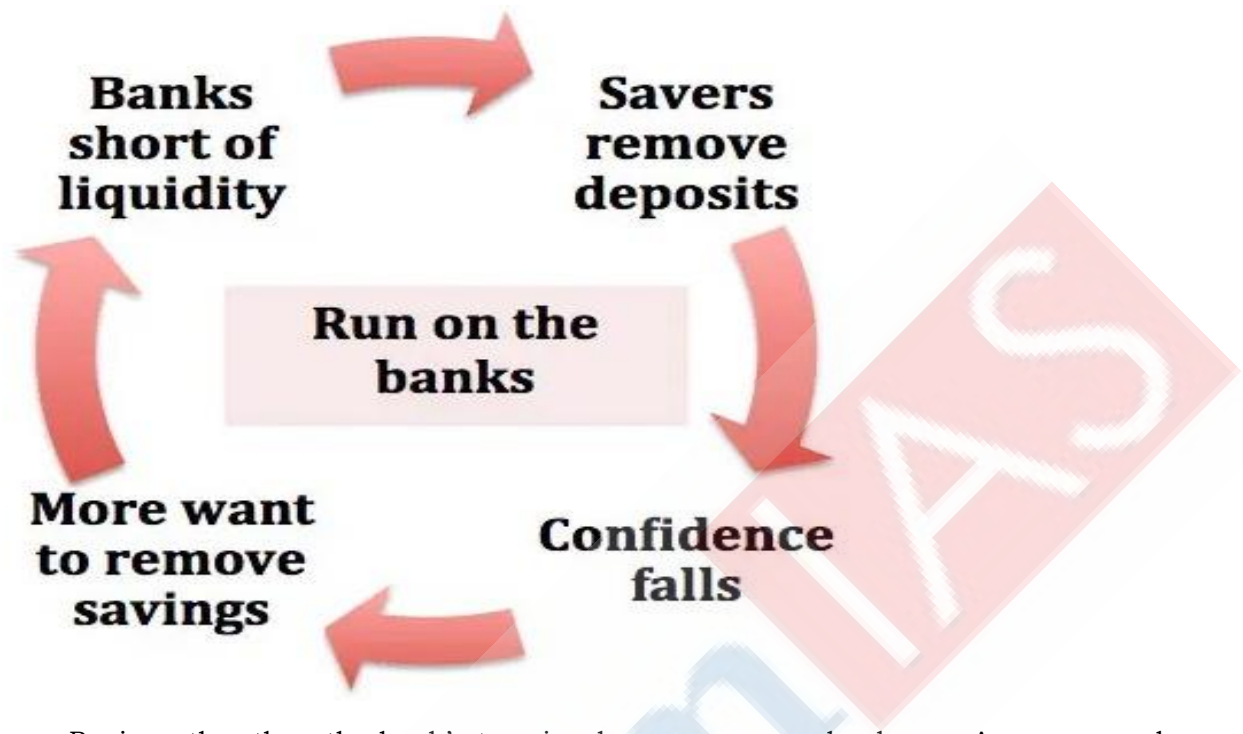
**Interest Rate Risk:** Shorter-term deposits are repriced faster than loans. If interest rates rise, the bank must pay a greater rate on maturing and new deposits. However, the loans cannot be repriced quickly. As a result, Banks may have to pay more on deposit interests than they earn from interest income from loans.

**Liquidity Risk:** When loans and deposits have varying maturities, liquidity difficulties may occur. Banks must repay deposits (with interest) at maturity. But they can't recall loans for repayment. Banks will be unable to service their depositors if they do not acquire fresh deposits or roll over existing accounts. In an emergency, they may pay high interest to raise money.

### What causes Bank Run?

A bank run happens when depositors lose their faith in the sustainability of the Bank. Bank runs typically occur due to investors' panic rather than solvency issues with a bank. If depositors for some reason feel that the financial health of Bank is poor and their money is not safe with the Bank, they may rush to withdraw their deposits from the Bank.

Banks keep a small portion of those savings (deposits) as a separate reserve to meet withdrawal needs. However, if there is large rush for withdrawal it may lead to exhaust the reserve. A bank would be compelled to sell its long-term investments, even at a loss. As more clients withdraw money, there is a greater chance of default, which will cause further withdrawals. Eventually, the Bank not have enough money to pay back the depositors. This leads to liquidity crisis. Even though Bank has assets (loans), they can't be used to repay as they are due at a later stage. If withdrawals continue to persist, Banks may eventually fail and go bankrupt.



Customer Panic, rather than the bank's true insolvency, causes a bank run. As more people remove funds, the possibility of bankruptcy rises, prompting even more withdrawals. To deal with the panic, the bank may limit the quantity of withdrawals per customer or halt all withdrawals entirely. In addition, the bank may get more cash from other banks or the central bank in order to grow its cash on hand.

When numerous banks are involved in an unchecked bank run, it produces an industry-wide panic that can lead to an economic crisis.

What is the relevance of the Works of winners of Nobel Prize in Economics 2022 to India?

There have been scare of bank failures/bank runs in India especially in multiple cooperative Banks.

To keep people's faith in the banking system, the Government and RBI have taken steps like boost deposit insurance, make it easier for weaker lenders to be taken over, and take steps to stop bad loans. The Government is now working to privatize banks and combining them to make them larger entities. This will enable them to make bigger investments (loans to companies) that can boost economic growth. However, Government must take appropriate regulatory steps based on the works of the winners of Nobel Prize in Economics 2022 to ensure that financial sector stays robust and there is no possibility of bank runs.

### Conclusion

The works of the winners of Nobel Prize in Economics 2022 have proved to be useful in guiding policy and regulatory framework to avoid potential crisis/mitigating the impact of ongoing crises. Several economists have lauded the role of Ben Bernanke in addressing the banking and financial crisis of 2008. There are valuable lessons for authorities in India to undertake appropriate regulatory steps to avoid such crises in India.

**Syllabus:** GS III, Indian Economy

**Source:** [The Hindu](#), [The Hindu](#), [Indian Express](#), [Mint](#), [Economic Times](#)

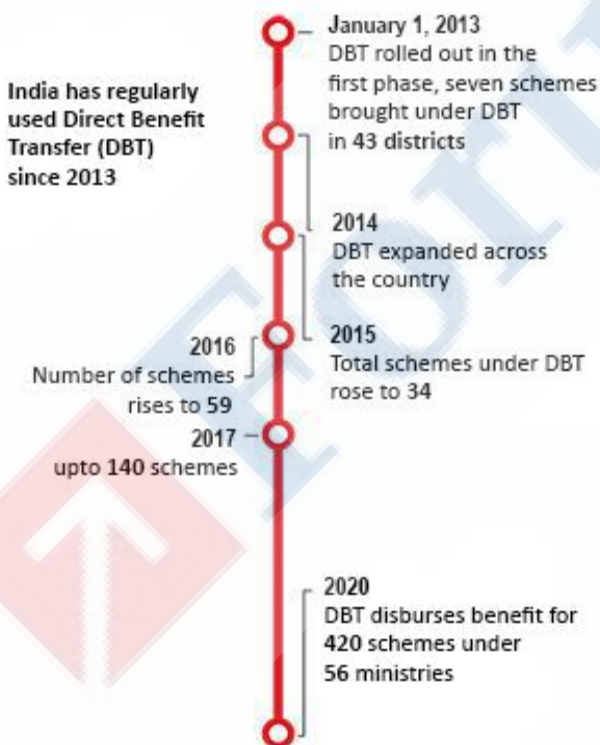


**Direct Benefit Transfer (DBT): Advantages and Way Forward – Explained, pointwise****Introduction**

The International Monetary Fund (IMF) has praised the Direct Benefit Transfer (DBT) Scheme, calling it a **'logistical marvel'** that has reached hundreds of millions of people. An IMF Deputy Director said that DBT programme has helped people with low income levels especially women and the elderly praising the technological innovation behind it. Further, **developing countries can learn a lot from India's DBT initiative**. Earlier, the President of the World Bank Group had also urged other nations to adopt India's move of targeted cash transfers instead of broad subsidies, noting that "India managed to provide food or cash support to 85% of rural households and 69% of urban households". The DBT scheme has proved to be a remarkably successful endeavour in providing support to the poor and ensure inclusive growth. The Government can take steps to plug some gaps to enhance its efficacy further.

**What is Direct Benefit Transfer (DBT)?**

The Direct Benefit Transfer (DBT) programme was launched on January 01, 2013. It was initiated with the goal of **improving the delivery system** of the welfare initiatives of the Government of India and reforming the procedures of existing social schemes. The program has aimed at **transfer of subsidies and cash benefits directly to the people through their Aadhaar seeded bank accounts**. While launching, it was hoped that crediting subsidies into the bank accounts would **substantially reduce leakages**, and **associated delays**. Earlier the funds flowed through a multiple layers of administrative offices till it reaches the end beneficiary, invariably leading to delays. DBT has eliminated the extra layers.



**Source: National Informatics Centre**

## What are the components and types of schemes covered under the Direct Benefit Transfer (DBT)?

### Components

Primary components in the implementation of DBT schemes include: **(a)** Beneficiary Account Validation System; **(b)** A robust **payment and reconciliation platform** integrated with RBI, NPCI and Beneficiary Banks (Public/Private Sector Banks, Regional Rural Banks and Cooperative Banks). It includes the Core Banking Solutions of banks, Settlement Systems of RBI, Aadhaar Payment Bridge of NPCI.

### Types Of Schemes

**Cash Transfer:** Under the cash transfer scheme of Direct Benefit Transfer, the Government directly transfers the money to the individual beneficiaries. The cash transfer is undertaken through: **(a)** Direct transfer to beneficiary account by Union Government; **(b)** Transfer through State Treasury Account; **(c)** Cash transfer by implementing agency of the Government.

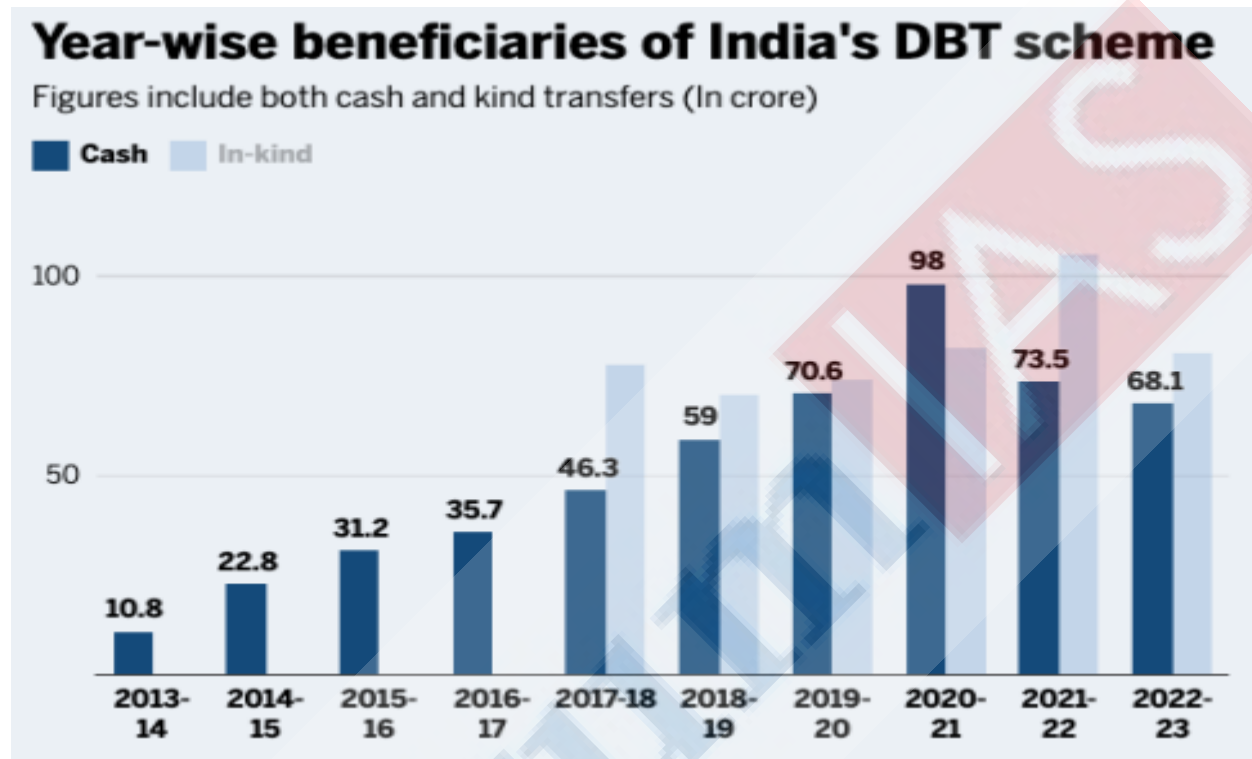
## Funds transferred via DBT in FY23

Government data for FY22-23

Scheme	Total Direct Benefit Transfer (In Rs crore)
PAHAL	3,897.19
MGNREGS	24,736.5
NSAP	1,548.76
SCHOLARSHIP SCHEME	1,692.21
PMAYG	28,947.77
PDS	100,406.0
FERTILISER	72,961.97
OTHERS	63,911.16
Grand Total	298,101.62

Source: The Times of India

**In-Kind benefit transfer:** In-kind benefit transfer is a scheme of Direct Benefit Transfer where the Government offers benefits to the beneficiaries in kind either directly or through their implementing agencies. Here, the Government incurs the expense of procuring a subsidy or benefit. For instance, the Government will buy a particular product, say food grains and offer it for public distribution.



Source: The Times of India

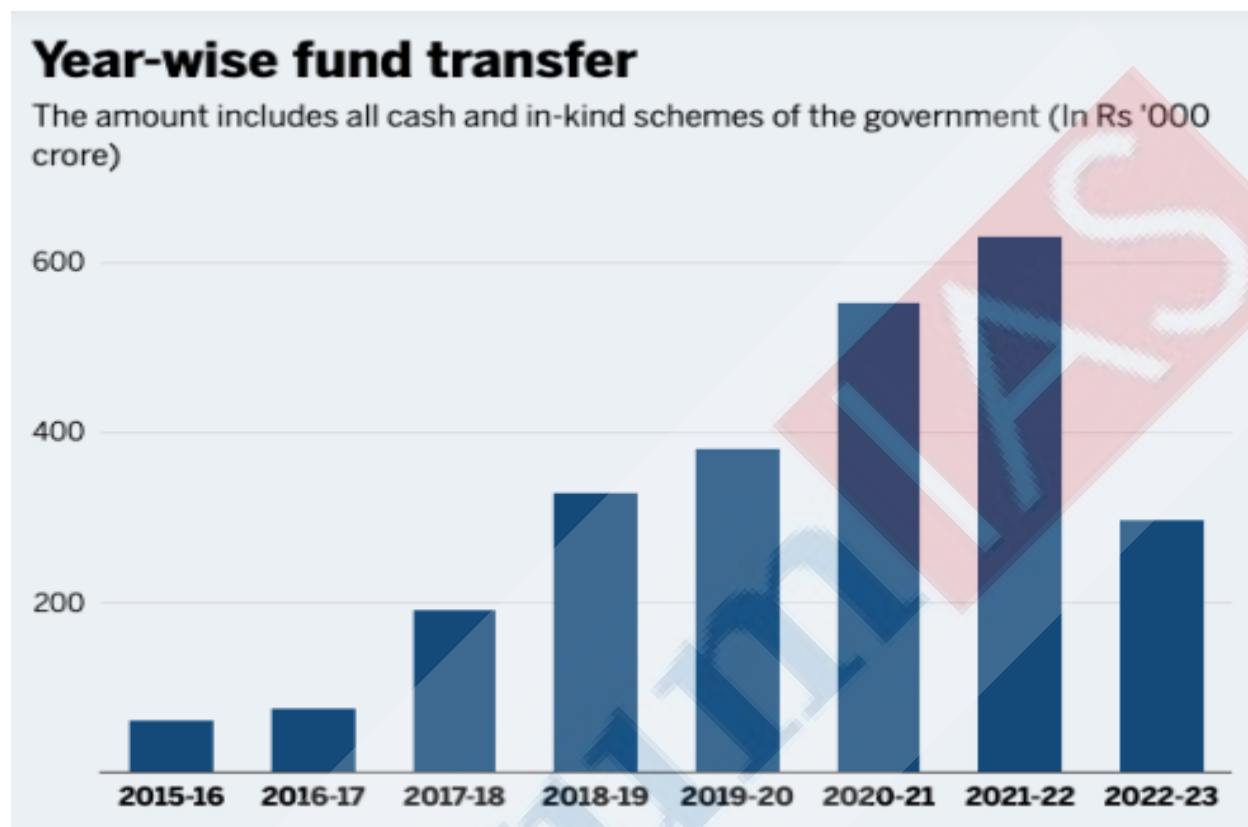
**Other transfers:** Other than cash and kind transfers, the Direct Benefits Transfer scheme also transfers funds and subsidies to several non-governmental functionaries that help implement government policies until the very end. This includes community workers, NGOs, teachers in aided schools, etc. They are not beneficiaries but are given training, wages, and incentives to serve the beneficiaries.

#### What are the advantages of Direct Benefit Transfer (DBT)?

**Good Governance:** (a) It has brought **transparency** and **reduced instances of pilferage** from the distribution of Central Government-sponsored funds; (b) Disbursal based on **verification of biometric identity** through Aadhar has reduced fraudulent and duplicate beneficiaries; (c) The Direct Benefit Transfer (DBT) programmes have provided for **time-bound transfers** of benefits, which has helped recipients **avoid delays** in the transfer of money. This was one of the most significant challenges they faced earlier.

**Benefit to the Economy:** (a) As the subsidies and benefits are being transmitted directly, DBT scheme has eliminated the need for intermediaries and rentals for 'fair pricing' shops etc. This is proving to be beneficial to the Indian economy as a result of the reduction in structural expenditures; (b) It is no longer a concern that middlemen are taking subsidised grains and selling them on the market; (c) It is also expected that the amount of money that is being circulated will be raised, which has the potential to result in a large rise in the GDP.

**Digitalisation or Cashless Economy:** (a) DBT is assisting India in accelerating its transition toward a cashless economy; (b) The prospect of receiving money directly has motivated people to open bank accounts and also acting as a driver in promoting savings.



Source: The Times of India

#### What steps can be taken to improve the Direct Benefit Transfer (DBT) further?

A private sector consulting firm has suggested some measures to further enhance the effectiveness of the DBT.

**First**, India has created a strong Direct Benefit Transfer (DBT) system, but there is a need to focus more on **user-centricity**. The Government should include women, persons with disabilities, and other traditionally excluded/vulnerable groups in the design process (following the 'Principles of Digital Development'). The system should address common **consumer risks**, such as **unreliable network** or service, **complex user interfaces**, and inadequate payment processes that force recipients to ask others for assistance and share personal information.

**Second**, despite efforts by Government, it was found that several beneficiaries were not aware of their entitlements and missed out on benefits. Governments should adopt a **strategic approach to Awareness, Communication, and Outreach (ACO)** for G2P (Government to Person) programs. The Government should have dedicated campaigns keeping in mind low level of literacy among beneficiaries. Moreover, Beneficiaries should be given the opportunity to provide feedback on the programme as well as the manner in which benefits are distributed. This would enable the Government to take corrective steps in case of any gaps.

**Third**, During times of crises (like COVID-19 pandemic), it is more **beneficial to ramp up already established programmes** rather than launching new support schemes. The



beneficiaries are already aware of the programme and the process. To make this more efficient, a dynamic database (updated on real-time basis) of social safety programmes that are categorised according to families and segments, such as occupation, gender, condition, and income level should be maintained.

**Fourth,** A survey found that ~10% DBT beneficiaries avail benefits through Banking Correspondents (BCs). To ensure the efficiency of service delivery and offer proper monetary incentives, the Union and State Governments, and financial institutions should **monitor the functioning and incentive structure of BCs** on a regular basis. Governments and Banks should **ensure adequate compensation for BCs**, motivating them to improve last-mile payment delivery. Furthermore, it should assist them in establishing confidence with their customers in order to do more transactions.

The Governments should also **allow BC agents to 'white-label' their services to multiple banks**, which means BCs can sell products from multiple banks to a customer. This will help in **enhancing reach and last-mile delivery**.

**Fifth,** Governments should **deliver cash benefits at the doorstep** while ensuring correct targeting. Doorstep delivery of cash benefits has been instrumental in providing a safety net to those who cannot travel to access points (like the elderly, differently-abled, and women customers constrained by safety concerns or regressive social norms).

**Sixth,** Governments should create an **enabling environment and promote the use of the digital payments**. This will allow beneficiaries to use the benefit amount without visiting a withdrawal point, which would save them time and cost. Again, the facility will help the elderly, women and differently-abled beneficiaries.

**Seventh,** the Government should **design a robust beneficiary-centric grievance resolution mechanism**. The current DBT architecture lacks an effective mechanism for customers to resolve grievances like non-receipt of funds or transaction failure. Between April-June 2020 ~1.47% of 830 million (i.e. ~12 million) transactions failed. Technology solutions should be developed to identify, monitor and rectify issues like transaction failure or delays. Beneficiaries should be provided with simple process to raise grievance and implementing agency responsible for the transaction failure or delays should resolve the issues immediately.

## Conclusion

During the COVID-19 pandemic, the Government of India used the DBT system to transfer US\$ 3.9 billion (INR 282 billion) to 318 million beneficiaries two weeks after announcing the PMGKY program. Overall, the Government of India deposited US\$ 9.3 billion (INR 680 billion) in the bank accounts of over 420 million beneficiaries under PMGKY. This large-scale transfer showed the robust nature of the cash transfer system in India and ensured **timely, efficient, and convenient transfers during the pandemic**. No wonder the global agencies have praised the Government's efforts. Now the Government should further enhance the efficacy of the Direct Benefit Transfer programme, eliminate the loopholes like transaction failures and make the system completely foolproof.

**Syllabus:** GS II, Government policies and interventions for development in various sectors and issues arising out of their design and implementation; Welfare schemes for vulnerable sections of the population by the Centre and States and the performance of these schemes.

**Source:** [Indian Express](#), [The Times of India](#), [National Informatics Centre](#), [Microsave](#)

**[Kurukshetra October Summary] Skills for Agri-Entrepreneurship – Explained, pointwise****Introduction**

Agriculture offers several opportunities for entrepreneurship. There are many new prospects in the agribusiness sector like packaging, provision of raw materials, exports of agricultural products and other related industries. High-skilled workers' perspectives are changing as a result of increased micro-financing, relaxed government regulations, access to cutting-edge technology and guidance in agri-related fields. As a result, many youngsters are choosing to work for themselves in agriculture and allied sectors and exploring new opportunities in agri-entrepreneurship.

**Concept of Entrepreneurship**

The term 'Entrepreneur' is derived from French verb 'Entreprendre' which means 'to undertake'. In early 16th century, the Frenchmen who led military expeditions were referred as entrepreneurs. Joseph Schumpeter (an Austrian Economist) popularised the term Entrepreneurship in 1930s. He defined entrepreneur as an individual who **introduces something new in the economy** – a method of production not yet tested, a product with which consumers are not yet familiar, a new source of raw material or of new market.

Entrepreneurship is the process of **identifying opportunities in market place, arranging the resources** required for pursuing these opportunities (i.e., convert an idea into a product or service to market) and **investing the resources** to exploit the opportunities for a long-term gain. Entrepreneurs are being considered an important instrument for initiating and sustaining socio-economic development.

Entrepreneurs perform several functions which are broadly categorised as innovation, risk bearing, organisation and management function. It encompasses idea generation, determining objectives, raising funds, procurement of machinery and raw materials, market survey, determination of form of enterprise, manpower recruitment and operating the enterprise.

**Agri-Entrepreneurship**

Agriculture used to be viewed as a **low-tech industry** dominated by small farm enterprises that were mostly concerned with improving the ongoing practices rather than looking for innovations to doing new things. However, after the economic liberalisation and a rapidly changing society, this situation has changed dramatically over the last two decades. Agricultural enterprises must adjust to market instability, **shifting consumer preferences**, rigorous **environmental restrictions**, new **product quality standards**, **sustainable food standards**, and other factors. Due to these changes entrepreneurship and more innovations are now possible.

Agricultural entrepreneurs undertake business related to agricultural activities; some entrepreneurial areas in agriculture are farming, product marketing, inputs marketing, and processing of agricultural produce. Agriculture offers tremendous opportunity for entrepreneurship, but this potential can only be realised through efficient management of agri-elements like soil, seed, water, and market demands.

**Advantages of Agri-Entrepreneurship**

Agri-entrepreneurship has the ability to **contribute to social and economic development**, including **job creation, poverty reduction, improved health and nutrition, increased food security**, and **improving rural economy**.

The solution to **reducing the burden of agriculture, generating employment opportunities for rural youth, preventing rural-to-urban migration**, raising the national income, **sustaining industrial development in rural areas**, and easing pressure on urban areas can be achieved

through agri-entrepreneurship. It helps small farmers become more productive profitable, and marketable on a local, national, and global scale. It encourages business opportunities in both urban and rural areas, accelerates growth, and diversifies income.

### Opportunities in Agri-Entrepreneurship

The scope and potential in agri-entrepreneurship have greatly increased as a result of the **WTO's policy reforms, globalisation of trade and agriculture** as well as national policy reforms. This has increased corporate interest in this industry.

### Agriculture offers several opportunities for entrepreneurship.

**Agro-Produce Processing Units:** In these facilities, no new products are manufactured; instead, only agricultural produce is processed e.g., mills for grinding grains (rice, wheat), pulses, etc.

**Agro-Produce Manufacturing Facilities:** In these facilities, completely **new goods are created** using agricultural products as the primary raw material like bakeries, straw board factories, and sugar factories.

**Agro-Input Manufacturing facilities:** Items are produced for either mechanising agriculture or expanding manufacturing facilities e.g., fertiliser production units, agricultural tool manufacturing units, etc.

**Agro-Service Centres:** These include the stores and repair facilities for farm equipment, implement, and machinery.

**Miscellaneous Areas:** The establishment of apiaries, feed processing facilities, seed processing facilities, mushroom production facilities, goat rearing, organic vegetable and fruit retail outlets, bamboo plantations, may be possible in these areas.

### Factors of Entrepreneurship

Several factors contribute to the success of an enterprise, including the entrepreneur's organisational, marketing, and human relations strategies. Market, methods, team, and company are some of the influential factors of entrepreneurial success.

Four distinct factors influence entrepreneurship: **economic development, culture, technological development, and education**. These factors may have an impact on the emergence of entrepreneurship in both positive and negative ways. The economic environment has the most immediate and direct effect on entrepreneurial activity.

**Economic factors** are capital, labour, raw materials, market and infrastructure.

**Social factors** include family background, education, attitude of the society, and political support.

**Psychological factors** refer to motives, need for achievement, status and respect.

### Core Competencies and Skills

Specific traits and abilities are needed to pursue agri-entrepreneurship, and these may be acquired through training, and preparation. Planning, implementation, and control are the three key facets of farm management that need knowledge and proficiency from farmer-entrepreneurs. They also need information on input supply, financial services, transportation, packaging, marketing, and consulting services, as well as primary production, harvesting, processing, wholesaling, and retailing.

Essential entrepreneurial attributes for an agri-entrepreneur are initiative, ambition, concentrated problem-solving, creative thinking, taking chances, flexibility and adaptation, interpersonal skills, networking, and a willingness to learn.

**Need for Achievement:** Entrepreneurs have a strong drive to succeed in their business and in life. Their aspirations go well beyond merely reaching one target; instead, they are always striving to surpass it.

**Technical Expertise:** An entrepreneur is fully knowledgeable about all the technical aspects of his/her enterprise including technology, operations, finances, or market dynamics. Entrepreneurs are curious about new things. They make the effort and take decision to look into the unforeseen.

**Innovativeness:** Entrepreneurs don't always adhere to the traditional guidelines. They are constantly looking for fresh opportunities to expand. They build new things and come up with ideas through imagining solutions to issues.

**Independence:** An entrepreneur frequently finds it challenging to work in a regulated setting due to their desire for freedom to make decisions. Entrepreneurs require independence in their job and decision-making.

**Risk Bearing Ability:** Entrepreneurship is inextricably linked to risk. Entrepreneurs who take reasonable risks (moderate risk/calculated risk) outperform those who take excessive or no risks at all in terms of returns on their assets. The entrepreneur accepts future uncertainty while reducing risk by preparation, skill development, and research.

**Leadership Ability:** Entrepreneurs exemplify leadership traits. They have good communication skills, are good decision-makers, good planners, organisers, and motivators who take the initiative to carry out plans and are goal-oriented.

**Human Relations Skills:** In order to gain customers' trust for their goods and services, entrepreneurs need to get along well with their customers. To manage their business profitably, they must also maintain strong ties with their employees.

**Diligent:** Entrepreneurs are very hard-working and put up a lot of effort to see a business venture through to success. They continuously work toward achievement and are aware that there is no replacement for putting in a lot of effort.

**Self-confidence:** Entrepreneurs have faith in their abilities to face uncertainties.

**Flexibility:** Entrepreneurs need to be adaptable to shifting markets, trends, technology, laws, and regulatory frameworks, as well as shifting economic conditions.





*Source: Kurukshetra October 2022*

To be successful in an agri-entrepreneurship, a farmer must be able to blend their managerial, technical, and entrepreneurial skills in practice. The three key technical aspects that demand expertise are managing inputs, production, and marketing. Entrepreneurial and technical competencies must be supported with managerial competencies in diagnosis, planning, organising, leading, and managing.

## Skills for Agri-entrepreneurs

**Global Forum for Rural Advisory Services (GFRAS) in its Guide on Agricultural Entrepreneurship** has listed different skills required by agri-entrepreneur.

- **Aligning business objectives** with the value proposition.
- Identifying a value proposition that **meets customers' requirements** and preferences.
- **Situational analyses** by collecting, arranging, analysing, and interpreting information.
- **Diagnosing problems** and finding their pertinent causes.
- Evaluating and contrasting potential solutions to a given problem.
- Forecasting.
- Estimating the work and time necessary to execute jobs.
- Implementing, monitoring and evaluating activities.

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Market analysis is one of the important functions of an agri-entrepreneur who needs to have several skills for it such as critical thinking, system analysis, operations analysis, decision-making, problem-solving, coordination, and communication abilities. An agri-entrepreneur would require negotiating skills in order to negotiate with all stakeholders and arriving at a common ground, reasonably addressing concerns of all parties. This avoids log-jam and ensure continuity.

## Production and Operation Skills for Agri-entrepreneurs

- Selecting, designing, running, managing, and updating the agricultural production system.
- Planning on a short- and long-term basis for what and how to produce.
- Making choices about the timing of production processes, such as sowing based on seasons, soil types, methods of sowing, fertility.
- Arranging the resources and raw materials required for agricultural production process.
- Coordinating and managing production processes.
- Choosing and operating farm equipment and machinery.
- Designing the workflow from arranging inputs (e.g., seeds, fertilisers, pesticides, ) to packaging of produce and sale of agricultural produce.
- Production process monitoring and appraisal.
- Resolving difficult issues that may arise during production.

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### Skill Development Initiatives

Various Government bodies and institutes are engaged in training, consultancy, research, etc. in order to promote entrepreneurship and skill development. These include: **(a)** National Institute of Micro, Small and Medium Enterprise (NIMSME), Hyderabad under Ministry of Micro, Small and Medium Enterprises; **(b)** Indian Institute of Entrepreneurship (IIE), Guwahati; **(c)** National Institute for Entrepreneurship and Small Business Development (NIESBUD), Noida; **(d)** National Skill Development Corporation; **(e)** National Skill Development Agency; **(f)** National Skill Development Fund under Ministry of Skill Development and Entrepreneurship.

NABARD has been partner of Government in implementing **schemes for agri- entrepreneurship** like: **(a)** New Agricultural Marketing Infrastructure (AMI) sub scheme of Integrated Scheme for Agricultural Marketing (ISAM); **(b)** Agri Clinics and Agri Business Centres Scheme (ACABC); **(c)** National Livestock Mission Entrepreneurship Development and Employment Generation (NLM-EDEG); **(d)** Dairy Entrepreneurship Development Scheme (DEDS); **(e)** Commercial production units of organic inputs – National Project on Organic Farming (NPOF).

Ministry of Agriculture and Farmers' Welfare, Government of India under revamped **Rashtriya Krishi Vikas Yojana** has launched a new Scheme named **Innovation and Agri-Entrepreneurship Development** to **promote agri-entrepreneurship** and agribusiness by providing financial support and nurturing the incubation ecosystem.

**Initiative for Development of Entrepreneurs in Agriculture** (IDEA) under (NEDFL Schemes) **Ministry of Development of North Eastern Region** intends to promote agri-business ventures in the North East Region and assist in establishing agri-business as a profitable venture. It also provides gainful employment opportunities and makes available supplementary sources of input supply and services.

### Way Forward

Agri-entrepreneurship is essential to transform subsistence activities into profitable business ventures. Aspiring agri-entrepreneurs must be equipped with appropriate resources in order to enable them to exploit opportunities in the agriculture and allied sectors. Extension and agro-advisories can be utilized to promote group entrepreneurship by organising group of entrepreneurs and establishing linkages along the value chain. This can help create new livelihood opportunities, ensuring improvement in farm productivity and raising rural income levels, thus ensuring a balanced and inclusive growth.

**Source:** Kurukshetra October 2022

## Ban on Conversion Therapy – Explained, pointwise

### Introduction

The National Medical Commission (NMC) recently sent a letter to all of the State Medical Councils in India. In the letter, it has declared that Conversion Therapy is illegal and has classified it as a 'profession misconduct'. It has also granted the State organisations the authority to take disciplinary action against medical practitioners who violate the norms. The NMC has acted in compliance with a decision from the Madras High Court to publish an official notification naming conversion therapy as a breach of the Indian Medical Council (Professional Conduct, Etiquettes, and Ethics) Regulations, 2002.

### What is Conversion Therapy?

Conversion therapy is also known as reparative therapy. It is an intervention that aims to **change the sexual orientation or gender identity** of an individual through the use of methods like psychiatric treatment, psychotherapy (talk therapy), drugs, exorcism, or even violence. The goal of the therapy is to **make the individual a heterosexual**. Conversion therapy also includes efforts to transform the basic identity of young people whose **gender identity contradicts their sexual anatomy**.

According to the British Psychological Society (BPS), conversion therapy is also called 'gay cure therapy'. In practice, it means trying to stop or suppress someone from being gay, or from living as a different gender than the sex they were born as. The BPS and the Royal College of Psychiatrists (the UK) have warned that all kinds of conversion therapy are 'unethical and potentially harmful'.

**Psychotherapy:** It includes Talk therapy, behavioral, interpersonal, or cognitive therapies. Some **teach stereotypical masculine and feminine behaviours** or use hypnosis to try to change thought patterns for same-sex attraction. Another commonly used method is called '**aversion therapy**'. In this practice, people are exposed to painful or uncomfortable sensations like electric shocks and nausea- or paralysis-causing drugs. This is done in hopes of forming a negative association with the person's attractions or identity to 'correct' it.

**Medical:** This includes medicine, **hormonal or steroid therapies**. In extreme cases, gender-affirming surgeries are done to 'neutralise' sexual orientation especially among transgender people.

### What are the issues with Conversion Therapy?

The American Academy of Child and Adolescent Psychiatry (AACAP) has pointed out several issues with the Conversion Therapy.



**Incorrect assumption:** The therapies used in conversion therapy are given under the incorrect assumption that homosexuality and different gender identities are a health or mental defect that can be cured. They are not and the lack of disorder means that conversion or any other similar intervention is not required.

**Unhealthy and Hazardous:** Conversion therapy runs the danger of developing or aggravating mental health disorders like anxiety, stress, and drug use, which can occasionally even result in suicide. There is proof that these procedures hazardous. are As a result, 'conversion therapies' shouldn't be used to treat children and adolescents for behavioural health issues.

**Lacks scientific credibility:** Such 'conversion treatments' lack scientific legitimacy and clinical efficacy because they are imposed with the goal of promoting a specific sexual orientation and/or gender as a desirable outcome.

**Treatment by Quacks:** In most cases, the treatment is provided by quacks who have very little experience in effectively addressing the problem. They end up doing psychological or physical harm to the 'patients'.

### What was the ruling of Madras HC regarding Conversion Therapy?

A homosexual couple had petitioned before the Madras High Court against the forced 'conversion therapy' they were made to undergo by their families to 'cure' them. In June 2021, the Madras High Court issued a slew of interim guidelines for the Police, Union and State Social Welfare Ministries, and the National Medical Commission to '*ensure their (of homosexual couple) safety and security to lead a life chosen by them*'.

The ruling prohibited any attempt to medically 'cure' or change the sexual orientation of LGBTQIA+ (lesbian, gay, bisexual, transgender, queer, intersex, asexual or of any other orientation) people.

It urged the authorities to take action against 'professional[s] involving themselves in any form or method of conversion therapy' which could include the withdrawal of their licence to practise medicine.

In July 2022, the Madras HC further directed the National Medical Commission to '*issue necessary official notification by enlisting "Conversion Therapy" as a professional misconduct*'. The NMC issued the directive to state medical councils in August 2022.

The Madras High Court ordered the police not to subject consenting adults (belonging to the LGBTQIA+ community) to harassment.

The Court also asked the Ministry of Social Justice & Empowerment to compile a list of NGOs and other organisations that could address the community's problems.

The Court also ordered agencies to abide by the **Transgender Persons (Protection of Rights) Rules, 2020**, and the **Transgender Persons (Protection of Rights) Act, 2019**, in letter and spirit. The Court ruled that it was crucial to **hold sensitisation campaigns** in an effort to fully comprehend the community and its needs.

### What should be done going ahead?

Legal Basis

**First**, It is imperative that the recommendations made by the Madras High Court be put into action. India can also learn from the countries like Germany, Canada, Malta, Australia, and the US that have enacted **legislation prohibiting conversion therapy**.



**Second**, The Mental Healthcare Act prohibits medical treatment without agreement. It can be amended to include conversion therapy as well. This is because victims may consent to conversion therapy because they have 'internalised' a mistaken idea that 'they are abnormal'.

### Change in curriculum

According to the opinions of several experts, educational institutions like schools and colleges need to make modifications to their curriculum. Adolescents can be sensitized about gender identities when they are attaining maturity. Even today, homosexuality is classified as a 'perversion' and 'an act of mental degenerates' in many medical books.

Sensitisation

**First**, People who have diverse sexual orientations or gender identities frequently share traumatic accounts of being bullied, discriminated against, stigmatised, and socially excluded from their communities. This needs to be addressed.

**Second**, the initial point of misunderstanding and abuse often begins at home. Teenagers are compelled to opt for 'conversion' therapies. Parents also need to be made aware of the issues surrounding sexual orientation and gender identity.

The sensitization can be done through educational institutions, dedicated awareness campaigns and the involvement of civil society.

### Conclusion

The Supreme Court's decision (2018) to decriminalise homosexuality by striking down Section 377 of the Indian Penal Code was a first step toward inclusivity. The notification issued by the NMC is another step in the right direction. However, there is still a lot to be done before the members of the LGBTQAI+ community can consider themselves to be in a more secure environment. The next step should be to bring about attitudinal change in the society through sensitization. This will help create a truly inclusive society.

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

Lancet Countdown on Health and Climate Change – Explained, pointwise

### Introduction

Climate change is the greatest global health threat facing the world in the 21st century. Lancet Countdown is an international, multidisciplinary collaboration, dedicated to monitoring the **evolving health profile of climate change**. It provides an independent assessment of the delivery of commitments made by governments worldwide under the Paris Agreement. It is published annually by the medical journal The Lancet. The 2022 Report 'Lancet Countdown on Health and Climate Change: Health at the mercy of Fossil Fuels' has revealed that governments and companies continue to follow strategies that increasingly threaten the health and survival of all people alive today, and of future generations. The report has highlighted that the continued dependence on fossil fuels is compounding the health impacts of the multiple crises the world is facing including the fallouts of the COVID-19 pandemic, the war in Ukraine, the cost of living crisis, and climate change. The Report has findings and recommendations related to 5 broad aspects: **(a)** Health hazards, exposures, and impacts; **(b)** Adaptation, Planning, and Resilience for Health; **(c)** Mitigation Actions and Health Co-benefits; **(d)** Economics and Finance; **(e)** Public and political engagement.

## Health Hazards, Exposures, and Impacts

### Assessment

With an average global surface heating of 1.1°C, climate change is **increasingly affecting mental and physical health**. Changing climatic conditions are: **(a)** Increasing the risk of **heat-related illness**; **(b)** Changing the pattern of **infectious disease transmission**; **(c)** Increasing health risks from extreme events like heatwaves; **(d)** Putting sanitation at risk; **(e)** Having multidimensional impacts on **food and water security**. These impacts often occur simultaneously, **exacerbating** the pressure on health and health-supporting systems. The simultaneous occurrence can potentially trigger cascading impacts on the social and natural systems that control good health.

With the world projected to heat by 2.4–3.5°C by 2100, there is a need for greater urgency to accelerate mitigation and adaptation to prevent the devastating health outcomes of a heating world.

### Indicators

The Report also points out increasing exposure to heat waves e.g., in 2021, heat exposure led to the loss of 470 billion potential labour hours, a 37% increase from the period 1990–99. **87% of the losses in low HDI countries were in the agricultural sector.**

**Heat-related mortality** for people older than 65 years increased by approximately 68% between 2000–04 and 2017–21.

29% more global land area was affected by extreme drought for at least one month in a year in 2012–21 than in 1951–60.

Heatwave days were associated with 98 million more people reporting moderate to severe food insecurity in 2020.

## Adaptation, Planning, and Resilience for Health

### Assessment

The Report points out that there are **some signs of progress in the adaptation to climate change**. The national and city-level assessment of the climate-related health risks are gradually increasing. There is evidence that suggests that the strengthening of health systems might have reduced the impact of extreme events.

However, data show that **the pace and scale of climate change adaptation, planning, and resilience is far from what is necessary to reduce the health impacts of climate change**. Despite increasing temperatures, only 27% of urban centres have at least a moderate level of greenness, and just 28 (33%) of 84 countries report having **heat-related early warning systems for health**. Funding to support health adaptation remains grossly insufficient and is seldom influenced by vulnerability and adaptation assessments.

In 2022, unprecedented global health, economic, and conflict events have **critically worsened public health**. Climate change has exacerbated the impacts of many of these events. Without global coordination, transparency, and cooperation between governments, communities, civil society, businesses, and public health leaders, the world will remain vulnerable to international emergencies. The gap between the health impacts of climate change, and adaptation investment and implementation continues to increase, to the detriment of all.

### Indicators

In 2021, only 51% of countries (48 out of 95) reported having completed a climate change and health vulnerability and adaptation assessment. However, these assessments strongly impacted resource allocation in less than 10% (9) of the countries.

Only 49 out of 95 countries have a **National Health and Climate Change Plan** in place in 2021.

Less than 40% of countries had climate-informed **health surveillance systems** in place for vector-borne, waterborne, or airborne diseases.

Despite helping to prevent heat-related illness, **air conditioning was also responsible for 0.9 gigatonnes of CO2 emissions** and 24,000 deaths were attributable to PM2.5 exposure in 2020.

**149.6 million people were settled less than 1 metre above the current sea level.** They are living in regions increasingly at risk from the hazards of the rising seas.

### Mitigation Actions and Health Co-benefits

#### Assessment

After COVID-19 pandemic lockdowns were lifted and restrictions were eased, **CO2 emissions rebounded to record levels in 2021**. With each year that global greenhouse gas emissions do not fall, reaching net-zero by 2050 becomes more challenging, putting lives at increased risk from climate change.

The energy crisis has been worsened by war in Ukraine. It has threatened to deteriorate the energy situation, and has undermined progress and **exacerbated energy poverty**. However, increasing energy efficiency, conservation, and the use of renewable energy sources could give healthier, more resilient, and self-sufficient energy systems. Millions of lives could be saved each year by accelerating transition to cleaner fuels, healthier diets, and active modes of travel.

#### Indicators

The **carbon intensity of the global energy system decreased by less than 1% since 1992**. Energy-related emissions reached a record high in 2021.

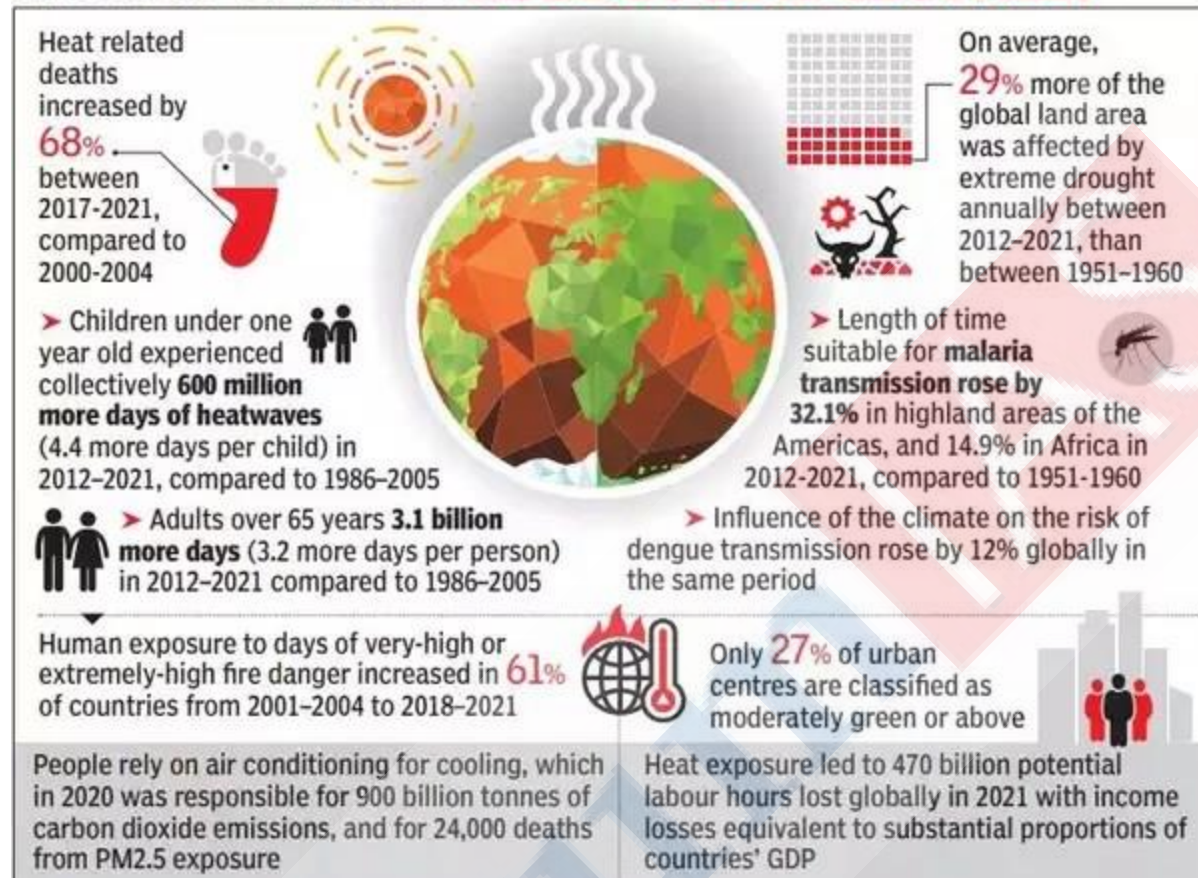
Despite improved access to clean fuels, biomass accounted for 31% of global household energy in 2020 and fossil fuels accounted for 26%.

Exposure to ambient anthropogenic PM2.5 contributed to **3.3 million deaths in 2020**, of which 1.2 million were directly related to the **combustion of fossil fuels**.

Use of fossil fuels in road transport decreased by 0.8% in 2019, whereas use of electricity increased by 15.7%.



## RISK OF DENGUE ROSE BY 12% GLOBALLY



Source: The Times of India

### Economics and Finance

#### Assessment

The **economic impacts of climate change are affecting livelihoods** and the socioeconomic conditions that **good physical and mental health** depend on. Substantial and sustained investment in the low-carbon transition is essential to minimise these impacts for a healthy future. Both Governments and the private sector have crucial roles in making this happen. Investments and employment are slowly transitioning from fossil fuels to clean energy, and divestment from fossil fuel assets is also increasing.

However, the **pace needs to be accelerated** to prevent devastating economic and health impacts of climate change. Yet, **governments continue to incentivise a carbon-intensive and health-harming economy by subsidising fossil fuels**. Fossil fuel subsidies are often comparable to the national health budgets.

Oil and gas companies are on track to exceed their share of maximum emissions compatible with 1.5°C of heating by more than 100% in 2040. Increased regulations, scrutiny, and **accountability mechanisms need to be urgently implemented** to ensure the energy sector aligns its activities with agreed climate targets. Governments worldwide must urgently accelerate this transition, by setting regulations and redirecting investment to a low-carbon, healthy, and energy-resilient future.



### Indicators

The monetised value of global heat-related mortality was estimated to be US\$144 billion in 2021, equivalent to the average income of 12.4 million people

The global potential loss of income from reduction in labour capacity due to extreme heat was US\$ 669 billion. The agricultural sector was the most severely affected.

The monetised costs of **premature mortality due to air pollution amounted to US\$2.3 trillion** in 2020, the equivalent of 2.7% of gross world product.

With more than 12 million employees, **direct and indirect employment in renewable energy exceeded direct employment in fossil fuel extraction** for the first time in 2020.

The current strategies of 15 of the largest oil and gas companies would lead to production exceeding their share of levels consistent with limiting the global average surface temperature rise to 1.5°C by 37% in 2030, and 103% in 2040.

### Public and Political Engagement

#### Assessment

Engagement in health and climate change reached its highest recorded level in 2021, with **climate change solutions becoming an increasing focus of health and climate change engagement**.

The COVID-19 pandemic continues to be a major driver of health and climate change engagement. The pandemic also drove engagement by individuals and by government leaders in health and climate change. This raises the question of whether increased engagement is contingent on the pandemic context.

Although health and climate change engagement increased in 2021, there is **more engagement with health and climate change as separate issues**. Similarly, media and scientific engagement in climate change continues to surpass engagement in health and climate change. Despite mounting evidence of the health burden of climate change, **health and climate change have yet to be securely associated in the public, political, and corporate domains that are key to climate action**.

#### Indicators

**Scientific engagement in health and climate change:** The number of scientific papers investigating health and climate change increased by 22% from 2020 to 2021.

**Government engagement in health and climate change:** The proportion of countries referring to the association between health and climate change increased in both the 2021 UN General Assembly (to 60%) and in updated NDC submissions (to 86%).

### What are the findings related to India?

**First**, Climate change is affecting almost every pillar of food security. The duration of the growth season for maize has decreased by 2% (compared to a 1981-2010). Rice and winter wheat have each decreased by 1%.

**Second**, From 2012-2021, infants under one year old experienced an average of 72 million more person-days of heatwaves per year (compared to 1985-2005). For the same period, adults over 65 experienced 301 million more person-days. This means that, on average, from 2012-2021, each infant experienced an additional 9 heatwave days per year while adults over 65 experienced an additional 3.7 per person.

**Third**, From 2000-2004 to 2017-2021, heat-related deaths increased by 55% in India.

**Fourth,** In 2021, Indians lost 2 billion potential labour hours due to heat exposure with income losses equivalent to about 5.4% of national GDP.

**Fifth,** From 1951-1960 to 2012-2021, the number of months suitable for dengue transmission by *Aedes aegypti* rose by 69%, reaching 5.6 months each year.

### Conclusion

The Lancet Countdown on Health and Climate Change observes that gradual progress is being made in the mitigation efforts globally. Health is increasingly getting integrated into the climate change discourse. However, the progress is not commensurate with the pace required to contain the hazardous impacts associated with Climate Change. Hence, there is a need for greater coordination to step-up the efforts at the global level.

**Syllabus:** GS III, Environment Pollution and Degradation.

**Source:** [Indian Express](#), [The Times of India](#), [The Lancet](#)

### [Kurukshetra October Summary] Promoting Women Agripreneurship – Explained, pointwise

#### Introduction

Women entrepreneurs, especially women agripreneurs, represent the fastest growing category of entrepreneurship worldwide and India is no exception. By starting the business enterprises, women agripreneurs have demonstrated strong willpower, skills, risk-taking attitude and appetite for hard work, with grit and determination to succeed. Since 2016, the Start-up India, Stand-up India campaigns have gained considerable momentum. In addition, women agripreneurship has enhanced their morale and enthusiasm to do something productive for their family, local community and in turn to the nation.

Since the launch of Startup India initiative by Government of India in January 2016, the growth of start-ups and new-generation enterprises has been manifold. However, the number of women participating in the entrepreneurship activities has been relatively less, when compared to the number of their men counterparts, for variety of reasons. The women's participation in economic activities is about 25%, while they constitute over 48% of the Indian population. **Forbes India Report 2019** indicated that Indian women leaders occupy about 30% of senior corporate leadership positions in India (higher than the global average of 24%), while India gets rank of 113 out of 135 countries in gender equality in overall workforce. According to **Global Women Entrepreneurs Leader Report 2015** by ACG Inc., India has ranked 29 out of 31 countries. Similarly, **World Bank's India Development Report 2018** has revealed that **India has one of the lowest female participation in workforce globally**, with rank of 120 from among 131 countries. Considering the above dimensions and ground realities, there is an urgent need to design the institutional strategies to **support the ecosystem for promoting women entrepreneurship** in general and women agripreneurship in particular, which is essential for the integrated development of India.

**Read More:** [Female Labour Force in India – Trends and Challenges – Explained, pointwise](#)

#### Agripreneurship and Women Empowerment

Agripreneurship is the **synthesis of agriculture** (and allied sectors) and **entrepreneurship to generate commercially-viable products and services and high-value businesses and processes**. The agripreneurship comprises of the creation, development, nurturing and expansion of the agri-business enterprises in agri-based and its allied sectors. It includes

entrepreneurial interventions of agri-tech, farming, and marketing of agri-products in organised business practices from comparatively unorganised sector.

Women agripreneurs, represent the fastest growing category of entrepreneurship. Women play a vital role in the integrated development of agriculture and allied sectors. Dr. APJ Abdul Kalam had said that *'Empowering women is a pre requisite for creating a good nation, when women are empowered, society with stability is assured. Empowerment of women is essential as their thoughts and their value system lead to the development of a good family, good society and ultimately a good nation'*.

A Goldman Sachs Report (2018) observed that *"enabling women, particularly as entrepreneurs, benefits future generations because women tend to spend more on their children's education and health, which should boost productivity as well"*.

A Report by the McKinsey Global Institute (2021) observes that the concerted efforts in **minimising the gender gap in workforce participation has the potential to add US\$ 12 trillion to global GDP by 2025**. Women are the future of India's progress, and development, since they possess the multi-tasking skills, are predominantly focused, empathetic and inclusive leaders, while managing any business enterprises.

At present, the woman in India contribute to about 14% of agri-business owners. Various surveys have found that more than 1/3rd of the total agri/rural start-ups are being managed by women agripreneurs. Increasing number of women agripreneurs are significantly contributing for the improved socio-economic growth, sustainable and holistic development of rural areas in India.

#### Scope and Prospects for Promoting Women Agripreneurship

There is huge scope for promoting women agripreneurship, especially because nearly 70% of agriculture and its allied activities are predominantly managed by women. However, to promote women agripreneurship, there is a need of: **(a)** An institutional support mechanism; **(b)** Access to the quality training; **(c)** Funding opportunities; **(d)** Marketing networks; **(e)** Leveraging the technology through e-commerce platforms; **(f)** Innovative approaches to take their products to the target customers etc.

Women are expected to dominate the workforce-trends and leadership positions in India in the upcoming few decades. The trend is almost similar in case of women agripreneurs. According to a recent report by India Brand Equity Foundation (IBEF), more than **30 million additional women-owned business enterprises are expected to create about 150 to 170 million jobs by 2030**. The economic outlook is projected to grow dramatically as a consequence of this enabling ecosystem of women entrepreneurship.

A significant number of agri-based business opportunities are being exploited in the agro-spheres such as agro-product processing, agri-based food packaging, export of fresh vegetables and fruits, organised retail-supply of agricultural semi processed/processed products etc. This has got significant growth potential due to enhanced availability of institutional micro-finance, enabling regulations by Union/State governments, ease of access to high-tech solutions and trainings workshops on agri-based and its allied aspects. These provisions are progressively transforming the outlook of the agripreneurship industry, with special focus on women agripreneurship ventures. This is significantly bringing the 'inclusive growth of women agripreneurs' thereby promoting the enabling ecosystem of nurturing the variety of agri-enterprises.



### Areas /Scope for Women Agripreneurship

S. No.	Agriculture & Allied Activities /Sectors	Products/Output
1	Fruits and Vegetables	Pickles, Salad, Fruits Export, Canned Fruits, Sauce, Juice, Dry fruits, Nuts
2	Cereals and Pulses	Gram Flour, Corn Flour, Wheat Flour, Bajara Flour, Maida, Dal
3	Mushroom Cultivation	Fresh Mushroom, Retail Mushroom, Export Mushroom, Dried Mushroom, Medicines
4	Dairy Products	Yogurt, Saturated Butter, Butter, Ice cream, Milk, Buttermilk, Ghee
5	Bee Keeping (Apiculture)	Honey, Wax, Medicine, Pollen, Cosmetics, Pharmaceutical
6	Floriculture	Religious offering flowers, Festive Flowers, Ornamental Plants

Source: Kurukshetra October 2022

#### Public Policy Initiatives

Government of India has initiated various programmes and has created dedicated institutions/projects to foster the agripreneurship in India.

**Institutionalised Initiatives for Promoting Agripreneurship:** The 'Agri-Clinics and Agri-Business Centers Scheme' by the National Institute of Agricultural Extension Management (MANAGE), Hyderabad has provided considerable boost to women agripreneurship. It has provided agri-extension activities and facilitated transfer of technology in agri-based enterprise ecosystem. It has also supported the marketing of agri-based enterprise products/services. A significant number of trained men and women agripreneurs have been able to successfully



establish and manage the agri-based technical/ consultancy extension services to farming community.

**Promoting Local Agripreneurs and Agri-Business Incubators (ABIs):** The Prime Minister has emphasised on innovative practices and use of technology to nurture the agri-business enterprises. This will create employment in a large scale, ensure social and economic equity, inclusive growth, achieve self-reliance through agri-based start-ups. **‘Organic Sikkim’** has been successfully making agri-farmers to earn about 20% higher income by taking away the middlemen and discovering newer markets for their agri-products through Sikkim’s organic retail stores. The stores are predominantly managed by women agripreneurs.

**Rashtriya Krishi Vikas Yojana (RKVY):** Through the scheme, the Government has been promoting agripreneurship by extending technical and financial support. The Scheme has enabled the localised incubation ecosystem through State Agricultural Universities and ICAR Research Institutions. Agripreneurs are given structured training for 60-days through 29 Agri-Business Incubation (ABI) centres across India.

**NABARD Promoted Agri-Entrepreneurship Initiatives:** The National Bank for Agriculture and Rural Development, through its District Development Managers (DDMs) at all the districts across India, has been managing a variety of agri-businesses and women agripreneurs enterprises, in partnership with many NGOs, CSR (Corporate Social Responsibility) Projects of corporates and large organisations.

**Micro-Finance Institutions (MFIs):** The microfinance movement has promoted and nurtured thousands of micro, small and medium women agripreneurs. MFIs have helped transformation of millions of women in the rural India through **Diversity, Equality and inclusion (DEI)** principles.

**‘WeACT’ (Women Entrepreneurs Access Connect Transform):** It is a national level network of women entrepreneurs, where the interventions undertaken are executed in collaboration with **Entrepreneurship Development Institute of India (EDII)**, Ahmedabad and **Accenture Pvt. Ltd.**, along with many other partners. Till Dec 2021, about 3,651 women enterprises have been nurtured across 14 states in 3 core sectors, (Food and Agro-based Enterprises, Handloom and Handicraft Enterprises and Household Supply Enterprises). The institutionalised capacity building, integrated marketing linkages and digital support systems have enabled them to become **profitable and sustainable**.

The initiatives taken by Government of India has significantly boosted the confidence of women agripreneurs and their holistic approach towards life, self-reliance, socioeconomic empowerment and thereby self-actualisation. This will help in attaining balanced regional development as women agripreneurship is primarily rural-based. This is also **reducing rural-urban migration**, which will improve the economic status of rural women. This has been helping in infrastructure development by creating in situ employment opportunities for others, and also reducing the social discord/evils and overall boost the socio-economic wellbeing by adopting new production systems.

#### Issues and Challenges

There are several challenges faced by women agripreneurs in starting and managing the growth phases of agri-enterprises.

Women agripreneurs face various challenges during the time of work and implementation like:

- (a) Dual responsibility of home and enterprises; (b) Threats from established corporate players;
- (c) Lack of knowledge/market awareness; (d) Lack of knowledge in branding, management,

accounting etc.; **(e)** Lack of information source, required skill sets and training; **(f)** Lack of support from the family.

In addition to this, the fear of failure, **low risk-taking capacity**, also act as deterrent to their growth.

The **infrastructure challenges** include: **(a)** Lack of storage and warehousing; **(b)** Lack of electricity; **(c)** Lack of credit facility and finance especially formal finance (for both investment credit and working capital financing). The dependency on money lenders leads to exploitation, when the institutional credit is not forthcoming for managing their business enterprises.

#### Way Forward

Indian women agripreneurs have been making significant strides of growth in changing/transforming Indian agri-ecosystem. This has been getting expedited owing to enabling policies for start-ups by Government of India, enhanced access to the educational/training programs and digital media, and improved access to funds/credit facilities, grant-in-aid by various agencies like KVIC, CSR Grants by Corporates, etc. The concerted efforts have given a strong boost to the growth of start-up culture and enabling entrepreneurial ecosystem, where the woman agripreneurs are actively supporting the growth of rural economy. It will help in attaining inclusive growth and breaking the gender stereotypes by empowering women and helping in attaining gender equity.

**Syllabus:** GS I, Role of women and women's organization; GS III, Inclusive Growth and issues arising from it.

**Source:** Kurukshetra October 2022

### CCI (Competition Commission of India): Provisions, Working and Challenges – Explained, pointwise

#### Introduction

The Competition Commission of India (CCI) recently passed two separate orders against the tech giant Google. The two orders imposed penalty of INR 1337 crore and INR 937 crore (total INR 2274 crore) on Google for abuse of dominant market position. CCI also issued list of corrective measures for Google to comply with. Experts have hailed the order by the CCI as it took on Google. The CCI has been very proactive in addressing the anti-competitive practices of corporations and ensuring fair markets. However, the Commission faces several challenges which must be addressed to enhance its efficacy.

#### What is the Legal and Institutional Framework regarding the CCI?

##### Legal Framework

Competition Law for India was triggered by **Articles 38** and **39** of the Constitution of India. These Articles are a part of the Directive Principles of State Policy. Among other things, Article 38 calls for **elimination of inequalities in opportunities for people engaged in different vocations** (professions). Article 39 calls for ensuring that **operation of economic system does not result in concentration of wealth**. Based on the Directive Principles, The **Monopolies and Restrictive Trade Practices Act** (MRTP Act) was passed in 1969. It was India's first Competition Law.

MRTP Act was repealed and replaced by **The Competition Act**. The Competition Act was passed in 2002, on the recommendations of **Raghavan Committee**. In October 2003, the Competition Commission of India (CCI), was established under the provisions of the Competition Act, 2002.

It became fully functional when the provisions of the Competition Act relating to **anti-competitive agreements** and **abuse of dominant position** were notified in May 2009.

**Competition Appellate Tribunal (COMPAT)** was also established based on the Competition (Amendment) Act, 2007. However, the Government has replaced the Competition Appellate Tribunal with the National Company Law Appellate Tribunal (NCLAT) in 2017.

Composition of CCI

According to the Competition Act, the CCI has a **Chairperson** and **not more than 6 members**. The Chairperson and the members are appointed by the Union Government.

The Commission is a **quasi-judicial body**. It also provides advice to the statutory bodies.

Eligibility of members

According to the Competition Act, 2002, the Chairperson and every other member shall be: **(a)** A person of ability, integrity and standing; **(b)** Who has been, or is qualified to be, a **judge of a High Court**, or **(c)** Who has special knowledge of, and **professional experience of not less than 15 years** in international trade, economics, business, commerce, law, finance, accountancy, management, industry, public affairs, administration or in any other matter which, in the opinion of the Central Government, may be useful to the Commission.

CCI's jurisdiction does not include matters protected by Intellectual Property Rights.

#### What are the functions of CCI?

**First**, It is the statutory duty of the Commission to **(a)** Eliminate practices having adverse effect on competition; **(b)** Promote and sustain competition; **(c)** Protect the interests of consumers; **(d)** Ensure freedom of trade carried on by other participants, in markets in India.

**Second**, Make the markets work for the benefit and welfare of consumers.

**Third**, Ensure fair and healthy competition in economic activities in the country for faster and inclusive growth and development of economy.

**Fourth**, Implement competition policies with an aim to effectuate the most efficient utilization of economic resources.

**Fifth**, Develop and nurture effective relations and interactions with sectorial regulators to ensure smooth alignment of sectorial regulatory laws in tandem with the Competition Law.

**Sixth**, Effectively carry out competition advocacy and spread the information on benefits of competition among all stakeholders to establish and nurture competition culture in the Indian economy.

**Seventh**, It may act on a complaint filed by an informant pertaining to an anti-trust activity or may take action suo motu.

**Eighth**, The Commission is also mandated to give its opinion on competition issues to government or statutory authority and to undertake competition advocacy for creating awareness of competition.

#### What are some major orders passed by CCI?

**First**, In October 2022, The CCI imposed penalties of INR 936.44 crore and INR 1337.76 crore against Google for **abusing its dominant position** with respect to its **Play Store Policies** and **Android mobile device ecosystem** respectively.



**Second,** In October, 2022, CCI imposed a fine of about INR 223 crore on **travel portal MakeMyTrip** for entering into preferential pacts with hotel partners.

**Third,** In December 2021, CCI had imposed a penalty of INR 200 Crore upon **Amazon** due to their failure to notify combination in terms of the obligation cast under 6(2) of the Competition Act. Section 6(2) deals with provision of prior information to the Commission in case of impending merger.

**Fourth,** In 2015, CCI imposed a fine of INR 258 crores on three airlines (Jet Airways, IndiGo and SpiceJet), for **cartelisation** in determining the fuel surcharge on air cargo.

**Fifth,** CCI had also ordered probe into the functioning of the **Cellular Operators Association of India** (COAI) in response to the complaint filed by Reliance Jio against the cartelization by its rivals – Bharati Airtel, Vodafone India and Idea.

**Sixth,** In 2013, CCI imposed a penalty on the **Board of Control for Cricket in India** (BCCI) for **misusing its dominant position**. It was found that the IPL ownership agreements were unfair and discriminatory. The terms of IPL franchise agreements were one-sided and highly in favour of BCCI and the franchises had no say in the agreement.

**Seventh,** The automotive sector has also been subject to investigations across a wide-spectrum of competition law concerns. Maruti Suzuki, for instance, is being investigated for allegedly imposing resale prices on its dealers. Similarly, Honda is being investigated for its conduct pertaining to vertical restraints by allegedly imposing discount control mechanisms, exclusive supply agreements, tie-in arrangements, and abuse of dominance.

#### What has been the benefits of CCI?

**First,** It act as a competition regulator, and an **antitrust watchdog for smaller organizations** that are unable to defend themselves against large corporations. Thus its actions have been effective in ensuring competition which ultimately benefits the consumer and the economy.

**Second,** CCI has played both administrative and quasi-judicial roles to eliminate practices having adverse effects on competition, promote and sustain competition, protect the interests of end consumers and ensure freedom of trade in Indian markets.

**Third,** The Commission has also come up with several innovations like the '**green channel**' provision for automated approval on combinations which do not have appreciable adverse effect on competition, and cleared more than 50 of such transactions. Thus, the Commission while ensuring fairness, does support mergers which make economic sense.

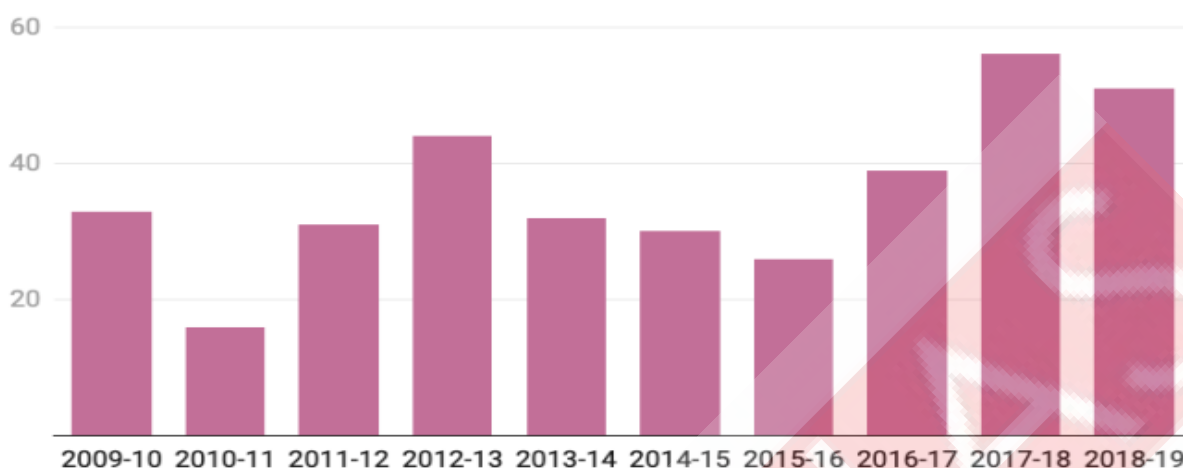
**Fourth,** CCI has conducted several market studies helping dynamics of market/

#### What are the challenges before CCI?

**First,** CCI has been called a 'Toothless regulator' by critics. Most of the orders of the CCI are under appeal before the National Company Law Appellate Tribunal (NCLAT) or under challenge in the high courts or the Supreme Court. The CCI has collectively fined companies about INR 13,000 crore between 2011-12 and 2018-19. But it has collected less than 1% of it so far.



Share of anti-competition orders appealed against (%)



**Source:** Mint. The above graph indicates percentage of CCI's anti-trust orders which end up in appeals. The proportion was 56% in 2017-18 and 51% in 2018-19.

**Second,** Even though the Competition Act, 2022 represents an improvement from its extremely restrictive predecessor (the MRTP ACT) it remains riddled with loopholes and ambiguities. This creates unnecessary legal uncertainty, which favours lawyers and law firms. For instance, the law allows the CCI to leave some leeway for 'relative advantage, by way of contribution to the economic development'. This may allow large firms to justify their anti-competitive practices in the name of development.

**Third,** In spheres such as telecom, internet and big-technology, CCI's functions also overlap with other regulatory bodies such as the Telecom Regulatory Authority of India (TRAI). Moreover, to assess and ensure competition in these spheres, CCI will require **staff with specialized knowledge in technology** as well as an understanding of modern industrial economics.

**Fourth,** there is a need for **new market definition** for digital technologies. Since, there are no boundaries in the digital space, defining relevant market has been a tough task for regulators around the world. With the advent of Web 3.0, AI, IoT, Blockchain and other technological developments, and emergence of issues like data protection and privacy, search bias, platform neutrality, deep discounting, hostile takeovers, confidentiality, etc, the need for a robust competition law, geared to meet the needs of present day techno-legal world becomes vital.

### Conclusion

CCI has been proactive in its approach to check anti-competitive practices in the markets. The Commission has taken a bold stand against the practices of global tech giants, where only European Commission had been active till now. However, the Commission must be provided more powers to ensure that it is able to collect penalties imposed. The Judiciary can also refrain from entertaining every appeal against CCI's orders. Such steps can further enhance the efficacy of the Commission in its roles.

**Syllabus:** GS II, Statutory, regulatory and various quasi-judicial bodies; GS III, Indian Economy and issues related to Growth.

**Source:** [Mint](#), [Mint](#), [Financial Express](#), [Money Control](#), [PIB](#), CCI