

7 PM COMPILATION

June, 2023

Features of 7 PM compilation

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

Vande Bharat trains: Potential and Challenges – Explained, pointwise

Topic: Economic development: Infrastructure

Sub Topic: Energy, Ports, Roads, Airports, Railways etc.

[Kurukshestra May 2023 Summary] Fostering Rural Crafts through One District One Product – Explained, pointwise

Topic: Economic development

Sub Topic: Indian Economy and issues relating to planning, mobilization, of resources, growth, development and employment.

Recent development in India – Nepal relations – Explained, pointwise

Topic: International Relations

Sub Topic: India and Neighbourhood relations.

The Issue of Indian railway safety – Explained, pointwise

Topic: Economic development

Sub Topic: Infrastructure: Energy, Ports, Roads, Airports, Railways etc.

[Yojana May 2023 Summary] Digital health: leveraging technology for transforming health care – Explained, pointwise

Topic: Social Justice

Sub Topic: Issues relating to development and management of Social Sector/Services relating to Health.

Plastic ban in India: Progress so far – Explained, pointwise

Topic: Environment and Bio-diversity

Sub Topic: Environmental pollution and degradation.

Law Commission's recommendations on sedition and its relevance – Explained, pointwise

Topic: Indian Constitution and Polity

Sub Topic: Criminal Justice System.

An analysis of PLI (production-linked incentive) scheme – Explained, pointwise

Topic: Economic development

Sub Topic: Changes in industrial policy and their effects on industrial growth.

Regulating AI (Artificial Intelligence): Need and way forward – Explained, pointwise

Topic: Science and Technology

Sub Topic: developments and their applications and effects in everyday life.

[Kurukshestra June 2023 Summary] Fostering Water Management for Food Security – Explained, pointwise

Topic: Human and Economic Geography

Sub Topic: Distribution of key natural resources across the world (including South Asia and the Indian sub-continent).

El Nino: Concept and impacts – Explained, pointwise

Topic: Geophysical Phenomena

Sub Topic: Important Geophysical phenomena

Data Security in India: Need and Challenges – Explained, pointwise

Topic: Security Issues

Sub Topic: basics of cyber security.

Transgenic Crops in India: Need and Challenges – Explained, pointwise

Topic: Science and Technology

Sub Topic: Awareness in the field of biotechnology.

India – China border dispute: Three years after Galwan clash– Explained, pointwise

Topic: International Relations

Sub Topic: India and its neighbourhood- relations.

[Kurukshetra June 2023 Summary] Water conservation through community planning – Explained, pointwise

Topic: Human and Economic Geography

Sub Topic: Distribution of key natural resources across the world (including South Asia and the Indian sub-continent).

Cyclone disaster management in India: progress and challenges – Explained, pointwise

Topic: Disaster Management

Sub Topic: Disaster and disaster management.

[Yojana June 2023 Summary] Direct Benefit Transfer (DBT) in India: A global role model – Explained, pointwise

Topic: Social Justice

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

Precision fermentation: advantages and challenges – Explained, pointwise

Topic: Science and Technology

Sub Topic: Awareness in the field of biotechnology.

[Yojana June 2023 Summary] Yoga for Global well-being – Explained, pointwise

Topic:

Sub Topic:

Carbon Border Adjustment Mechanism (CBAM) and its implications for India – Explained, pointwise

Topic: Environment and Bio-diversity

Sub Topic: Environmental pollution and degradation.

World's largest grain storage plan: benefits and challenges – Explained, pointwise

Topic: Public Distribution System

Sub Topic: objectives, functioning, limitations, revamping; issues of buffer stocks and food security

Recent Development in India-US Relations – Implications and Significance – Explained, pointwise

Topic:

Sub Topic:

India-Egypt Relations – Recent Developments -Explained, pointwise

Topic:

Sub Topic:

Financing the Green transition: initiative and challenges – Explained, pointwise

Topic:

Sub Topic:

Volatility in Tomato, Onion and Potato (TOP) prices and its implications for India – Explained, pointwise

Topic: Economic development

Sub Topic: marketing of agricultural produce and issues and related constraints.

Uniform Civil Code: Arguments for and against – Explained, pointwise

Topic:

Sub Topic:

Vande Bharat trains: Potential and Challenges – Explained, pointwise

Introduction

The Vande Bharat trains have emerged as a potential game-changer in the Indian railway system, offering high-speed and comfortable travel experiences. With their modern design, indigenous manufacturing, and emphasis on the Make in India initiative, these trains showcase India's technological advancements. They have achieved notable milestones, such as being the fastest train in the country and reducing travel time between cities. However, the expansion of Vande Bharat trains faces challenges, including joint venture issues, sanctions impacting spare parts availability, and production delays. Addressing these challenges is crucial to unlock the full potential of Vande Bharat trains in transforming India's rail network.

What are the Vande Bharat trains?

TRAIN 18

India's first indigenously built engine-less train likely to begin operations from December 15

It is being regarded as a **successor** to the Shatabdi Express



Developed by
Integral Coach
Factory, Chennai



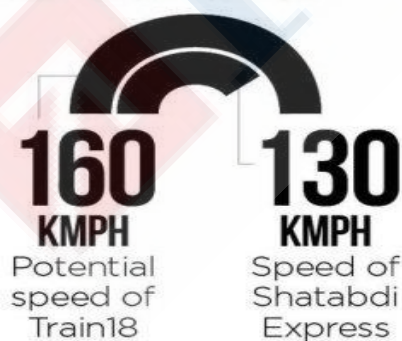
Time taken
18 MONTHS



Estimated cost
of the prototype
₹ 100 CR



Train 18 vs Shatabdi Express



Source: News Reports

Features

- Self-propelled train; doesn't require an engine
- 360 degree rotating seats
- AC chair-car type coaches
- Diffused lighting, automatic doors and footsteps
- GPS-based Passenger Information System
- CCTV cameras, Wi-Fi facility

When compared with Shatabdi

Train 18 will reduce travel time by

15%



NEWS creative

Source: News 18

Read here: [Explained: Fast-tracking Vande Bharat](#)

What is the need for Vande Bharat trains?

Insufficient capacity: The Indian railways face the challenge of inadequate infrastructure to meet the growing demands of passenger and freight transportation. This results in congestion, delays, and suboptimal utilization of resources.

Aging infrastructure: Many rail tracks, bridges, and stations are in need of repair and modernization due to age and lack of maintenance. This affects the safety, speed, and efficiency of train operations.

Accidents and derailments: Safety remains a significant issue for Indian railways, with occasional accidents and derailments. Factors such as outdated signaling systems, inadequate maintenance, and human errors contribute to these incidents.

Outdated technology: The use of outdated signalling systems, manual ticketing processes, and limited adoption of modern technologies hinder the efficiency and effectiveness of railway operations.

Limited automation: The Indian railways are yet to fully embrace automation in various processes, such as ticketing, maintenance, and scheduling, which could improve operational efficiency.

Cleanliness and hygiene: Maintaining cleanliness and hygiene in trains and stations remains a concern, impacting the overall customer experience.

Read more: [102 Vande Bharat trains to be operational by 2024](#)

What are some achievements of Vande Bharat trains?

Semi-high speed travel: Vande Bharat trains are India's first semi-high speed trains, designed to operate at speeds up to 160 kmph. The aerodynamic design helps the train reach 0-100 kmph in just 52 seconds, whereas other trains in the world takes upto 60 seconds. This allows for faster travel times and improved connectivity between cities.

Indigenous manufacturing: The Vande Bharat trains are manufactured in India, showcasing the country's capabilities in indigenous manufacturing. The trains are produced at Indian factories like the Integral Coach Factory in Chennai, promoting the "Make in India" initiative and supporting the growth of the domestic manufacturing sector.

Technological advancements: Vande Bharat trains incorporate advanced technologies and modern features to enhance passenger comfort and safety. These include features like automatic doors, regenerative braking, and state-of-the-art passenger amenities.

National and international recognition: These trains have showcased India's capabilities in manufacturing and implementing cutting-edge railway technology, reinforcing the country's position as a global player in the industry.

What are the potential benefits of Vande Bharat trains?

Boost to tourism and local economy: The introduction of Vande Bharat trains has the potential to stimulate tourism and boost local economies along their routes. For example, increased connectivity through Vande Bharat trains has led to improved accessibility to tourist destinations like Shirdi, promoting tourism and benefiting local businesses.

Environmental sustainability: Vande Bharat trains contribute to environmental sustainability by incorporating energy-efficient technologies and reducing carbon emissions. These trains help in achieving a greener and more sustainable transportation system.

Employment generation: The manufacturing, operation, and maintenance of Vande Bharat trains generate employment opportunities. This includes skilled labor in manufacturing units, onboard train staff, and station personnel, contributing to job creation and economic growth.

Cultural exploration: Vande Bharat trains facilitate travel and exploration, allowing passengers to experience the diverse cultural heritage of India. By connecting various cities and regions, these trains enable tourists to explore different traditions and contribute to cultural exchange.

Energy efficiency: Vande Bharat trains are designed to be energy efficient, contributing to environmental conservation and sustainability. **The trains utilize regenerative braking**, which helps in the efficient use of energy and reduces carbon emissions.

Improved passenger experience: The trains offer a comfortable and modern travel experience for passengers, with features such as **ergonomic seating, Wi-Fi connectivity, GPS-based passenger information systems, and modular toilets.**

Must read: [Locally made green trains to be rolled out](#)

What are the challenges in Vande Bharat train expansions?

Sanctions and international relations: The ongoing sanctions imposed on Russia following the Russia-Ukraine war have posed challenges for the Vande Bharat trains. These sanctions have affected the supply of spare parts from Western European and American manufacturers, hindering the smooth operation and maintenance of the trains.

Majority shareholding dispute: There is a disagreement between the Russian transportation giant Transmashholding (TNH) and the Indian public sector undertaking Rail Vikas Nigam Limited (RVNL) regarding the majority shareholding issue for the joint venture (JV) to manufacture Vande Bharat Express train sets. This dispute has led to delays and uncertainty in the expansion plans.

Production delays and capacity shortfall: The Kapurthala Rail Coach Factory, responsible for manufacturing Vande Bharat trains, has faced challenges in meeting production targets. Shortages of raw materials, supply chain disruptions, and delays in the approval of designs has resulted in the factory's failure to deliver the targeted number of trains, leading to delays in expansions.

Operational and maintenance costs: Operating and maintaining Vande Bharat trains involve significant costs, including training staff, ensuring spare parts availability, and implementing regular maintenance schedules. Managing these costs while ensuring efficient operations and high-quality services poses a challenge in the expansion process.

Passenger demand and occupancy: While Vande Bharat trains have been popular among passengers, managing the demand and ensuring optimal occupancy rates can be challenging. Balancing the number of trains and frequencies with passenger demand requires careful planning and analysis.

Weather and operational challenges: Operating Vande Bharat trains in challenging weather conditions, such as during the monsoon season or on steep gradients, can pose operational

challenges. Special considerations and precautions need to be taken to ensure the trains' safe and reliable operations under such conditions.

Read more: [Explained: Fast-tracking Vande Bharat](#)

What should be done?

Resolution of shareholding dispute: The Indian government and the involved parties, Transmashholding (TNH) and Rail Vikas Nigam Limited (RVNL), should work towards resolving the majority shareholding dispute in the joint venture. Finding a mutually acceptable solution will help establish clarity and facilitate smoother progress in the manufacturing and expansion of Vande Bharat trains.

Mitigating the impact of sanctions: Efforts should be made to mitigate the impact of sanctions imposed on Russia by diversifying the supply chain for spare parts. Exploring alternative suppliers from countries unaffected by the sanctions can ensure consistent availability of necessary components for the Vande Bharat trains.

Strengthening manufacturing capabilities: The Rail Coach Factory, Kapurthala, and other relevant manufacturing units should focus on enhancing their production capacities and streamlining their processes. This includes addressing issues related to raw material availability, supply chain management, and timely approvals of designs to meet the production targets and support the expansion plans.

Continuous training and skill development: Training programs should be conducted for staff involved in operating, maintaining, and servicing Vande Bharat trains. Continuous skill development and knowledge enhancement will ensure that the workforce is equipped to handle advanced technology and provide efficient services.

Effective demand management: A comprehensive analysis of passenger demand patterns should be conducted to optimize train frequencies, routes, and capacity.

Weather-resilient designs: Considering the challenges posed by weather conditions, incorporating weather-resilient designs and features in Vande Bharat trains will enhance their operational reliability. This includes addressing concerns related to waterlogging, ensuring safety during monsoons, and facilitating smooth operations on steep gradients.

Read more: [Not by 'Vande Bharat' alone](#)

Sources: [The Hindu](#), [Business Standard](#), Hindustan Times ([Article 1](#) and [Article 2](#)), [Livemint](#) and [The Wire](#).

Syllabus: GS – 3: Economic development: Infrastructure: Energy, Ports, Roads, Airports, Railways etc.

[Kurukshehra May 2023 Summary] Fostering Rural Crafts through One District One Product – Explained, pointwise

Introduction

Promoting Rural Crafts through the ODOP (One District One Product) initiative in India has emerged as a powerful strategy for inclusive development and the revival of traditional art forms. ODOP aims to leverage the country's rich demographic dividends by transforming rural areas into thriving entrepreneurial ecosystems. Through ODOP, India embraces its diverse craft heritage while propelling rural artisans towards economic self-reliance and global recognition.

What is the One District One Product (ODOP) Initiative?

The One District One Product (ODOP) initiative is a program implemented by the Indian government to promote inclusive development and empower rural communities through the development and promotion of unique products from each district. Inspired by the Japanese concept of One Village One Product (OVOP), ODOP aims to revive and preserve indigenous art, crafts, and traditional knowledge by creating a sustainable environment for their production. The initiative has gained recognition for its bottomup approach and its contribution to integrated development in India.

The major goals of ODOP are: **(a)** To promote and produce indigenous art and crafts, **(b)** To preserve traditional knowledge, **(c)** To support artisans and craftsmen, **(d)** To support livelihood and employability of rural/local community, **(e)** To boost exports through vocal for local, and **(f)** To attain balanced regional development.

Read more: [One District One Product Scheme \(ODOP\)](#)

What are the various rural crafts that can be promoted through ODOP?

Art and Crafts (Products)	Main Places of Production (City / District / State)
Zari (Zardozi Embroidery)	Surat, Bareilly, Varanasi, Agra, Hyderabad, Lucknow, Vadodara, Lathur, Jaipur, Barmer
Carpet	Bhadohi, Varanasi, Mirzapur, Agra, Jaipur, Bikaner, Kashmir, Panipat, Gwalior, Elluru. In states like West Bengal, Uttarakhand, Karnataka, Andhra Pradesh
Rugs and Durries	Agra, Bhadoi, Mirzapur, Jaipur, Panipat, Kashmir, Bhavani, Navalgund, Warangal, Jaisalmer, Barmer. In states Uttar Pradesh, Rajasthan, Haryana, Tamil Nadu, Karnataka, Andhra Pradesh
Textile (Handloom)	Bahraich, Bhuj, Karimnagar, Patan, Varanasi, Nawan, Shaheer, Boudh
Textile (Hand Embroidery)	Lucknow, Barabanki, Unnao, Sitapur, Rae Bareli, Hardoi, Amethi
Textile (Hand Printing)	Hyderabad, Machalipattanam, Varanasi, Farrukabad, Bagh, Behrongarh, Indore, Mandsar, Burhanpur, Ahmedabad, Rajkot, Kutch, Bagru, Chittroli, Sanganer, Jaipur, Jodhpur. In states like Andhra Pradesh, Uttar Pradesh, Odisha, Madhya Pradesh, Gujarat, Maharashtra, Rajasthan
Wood (Carving)	Bhopal, Nagpur, Chennai, Madurai, Mysore, Kashmir. State like Manipur
Wood Inlay	Mysore, Bengaluru, Bijnor, Saharanpur. In states like Punjab, Uttar Pradesh, Karnataka
Wood (Turning & Lacquer Ware)	Etikoppaka, Ernakulam, Chennapatna, Chitrakoot, Davangere, Medak, Sankheda, Varanasi
Stone Carvings	Agra, Bhubaneswar, Puri, Jaisalmer, Cuttack, Cuddapah, Bankura, Kanchipuram, Patna, Mysore, Rajkot, Gwalior, Puducherry, Mahanandi
Stone Inlay	Jodhpur, Jaisalmer, Agra. State like Rajasthan
Cane and Bamboo Crafts	Lakhimpur, Bongaigaon, Guwahati, Agartala, Nelaghar. In states like Assam, West Bengal, Odisha, Arunachal Pradesh, Manipur, Arunachal Pradesh, Tripura
Pottery and Clay Objects	Asharikandi, Bulandshahar, Bhadravati, Nizamabad, Pune, Chandrapur. State like Assam
Terracotta	Several parts of India like Pottery
Horn and Bone Work	Lucknow, Moradabad, Sambhal, Sarai Tarin, Honawar, Gajapati, Jodhpur, Thiruvananthapuram. In states like Uttar Pradesh, Odisha, Rajasthan, Kerala
Folk Paintings	In states like Odisha, West Bengal, Madhya Pradesh, Rajasthan, Bihar, Gujarat, Andhra Pradesh
Conch-Shell Crafts	In states like West Bengal, Tamil Nadu
Theatre, Costumes and Puppet	In states like Odisha, Karnataka, Andhra Pradesh, Tamil Nadu, Bihar, Kerala

Source: Kurukshehra

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What are the prospects and benefits of promoting rural crafts through ODOP?



Source: Kurukshetra

Market expansion and increased sales: Access to the ODOP GeM Bazar and e-commerce platforms enhance market reach. Artisans can sell their products nationally and internationally, leading to increased sales and revenue.

Preservation of cultural heritage: ODOP promotes indigenous arts and crafts, safeguarding traditional knowledge and skills. Crafts such as Rogan arts, Mithila paintings, and Wood carvings are preserved and passed down through generations.

Socio-economic empowerment: Supporting artisans and craftsmen improves their livelihood and employability. Rural communities benefit from increased income and reduced poverty levels.

Boosting exports and enhancing India's image: ODOP aligns with the “vocal for local” initiative, leading to increased exports of local crafts. Handloom textiles, pottery, and other products gain international recognition, enhancing India's reputation as a cultural hub.

Regional development and balanced growth: ODOP ensures balanced regional development by focusing on every district's unique product. By promoting crafts across various regions, ODOP prevents the concentration of growth in urban areas.

Skill development and quality improvement: Support from ODOP leads to skill development among artisans, enhancing their craftsmanship. Through training and guidance, product quality improves, making rural crafts more competitive in the market.

Increased visibility and international exposure: Showcasing ODOP products at international platforms, such as the World Economic Forum, brings global attention. Crafts like Phad paintings, Terracotta, and Handloom textiles gain exposure, attracting international buyers.

Self-reliance and Aatmanirbhar Bharat: Promoting rural crafts aligns with the goal of self-reliance and strengthens India's economy. ODOP contributes to India's self-sufficiency by supporting local artisans and reducing dependency on imports.

Tourism and cultural promotion: Unique crafts under ODOP, such as Kathputli paintings and Tanjore paintings, attract tourists, promoting cultural tourism. Visitors are drawn to regions known for their distinct crafts, boosting local economies and preserving cultural heritage.

Read more: [\[Kurukshetra May 2023 Summary\] Potential of rural handicrafts and rural tourism – Explained, pointwise](#)

What are the government initiatives in promoting rural crafts through ODOP?

One District One Product (ODOP) Scheme: The ODOP scheme implemented by the central government focuses on developing and promoting a unique product from each district, aiming to create a brand identity and boost exports.

Districts as Export Hub (DEH) initiative: The DEH initiative, launched by the Directorate General of Foreign Trade (DGFT) under the Department of Commerce, aims to transform districts into export hubs by identifying products with export potential.

ODOP GeM Bazar: The ODOP GeM Bazar is a government e-marketplace that promotes the sale and procurement of ODOP products across the country.

Support for marketing and international collaboration: ODOP products are showcased in international platforms like the World Economic Forum, allowing artisans to gain exposure and recognition on a global scale. This enables rural crafts to reach international markets and enhances the export potential of these products.

Institutional mechanisms: The government has established State Export Promotion Committees (SEPC) and District Export Promotion Committees (DEPC) to provide institutional support and address issues related to export promotion. Through these committees, artisans and craftsmen receive guidance, assistance, and necessary interventions to improve their marketing strategies, access funding, and overcome challenges in promoting their crafts to both domestic and international markets.

Foreign trade policy 2023: The Government of India has unveiled the Foreign Trade Policy 2023, which focuses on new potential export areas and highlights the role of districts as export hubs.

Read more: [Mission to map rural India's cultural assets covers over one lakh villages](#)

What are the challenges faced in promoting rural crafts through ODOP?

Poor institutional arrangements and support: Many artisans struggle to access financial support or find it difficult to navigate bureaucratic procedures when seeking assistance for their craft enterprises.

Inaccessible funds and financial constraints: Limited availability of financial institutions or schemes specifically tailored to the needs of artisans and craftsmen.

Ineffective backward and forward linkages for marketing: Due to this, artisans may find it challenging to reach a wider customer base due to a lack of marketing channels or difficulty in establishing connections with wholesalers or exporters.

Low adoption of technology and modern techniques: Limited access to and awareness of technological advancements in design, production, and marketing. This limits the competitiveness in the contemporary market.

Lack of marketing skills and intelligence: Artisans may face challenges in identifying market demands, pricing their products appropriately, or effectively promoting their crafts to attract a wider customer base.

Sustainability and Environmental Concerns: The challenge lies in preserving the authenticity of rural crafts while adopting sustainable practices such as using natural dyes, responsibly sourced materials, or minimizing waste generation.

What should be done to promote rural crafts through ODOP effectively?

Create a conducive ecosystem: Improve coordination and collaboration between various government departments, financial institutions, and industry experts to create a conducive ecosystem for rural crafts.

Accessible and tailored financial assistance: Simplify loan procedures and ensure the availability of accessible credit facilities to meet the financial requirements of rural craft businesses.

Enhance Marketing: Develop robust marketing strategies, including market research, branding, and effective promotion techniques, to expand the reach of rural crafts.

Foster market linkages: Foster strong backward and forward linkages by connecting artisans with potential buyers, retailers, exporters, and e-commerce platforms to increase market access.

Skill Development and Technological Integration: Provide training programs and skill development initiatives to empower artisans with marketing skills, entrepreneurship training, and knowledge of modern production techniques. Also facilitate the adoption of technology in rural craft production, including digital tools, e-commerce platforms, and online marketing channels, to enhance competitiveness.

Collaboration and Partnerships: Foster collaborations between artisans, government agencies, industry associations, and non-profit organizations to create synergies and share best practices. Apart from this, there is a need to facilitate international collaborations and partnerships to expand market opportunities for rural crafts through trade fairs, exhibitions, and cultural exchange programs.

Monitoring and Evaluation: Regularly monitor and evaluate the impact of ODOP initiatives, identifying bottlenecks and areas for improvement. Collect feedback from artisans and craft communities to ensure their voices are heard and their needs are addressed effectively.

Source: Kuruksheetra

Syllabus: GS 3: Economic development: Indian Economy and issues relating to planning, mobilization, of resources, growth, development and employment.

Recent development in India – Nepal relations – Explained, pointwise

Introduction

The recent visit of the Nepali Prime Minister to India has highlighted the ongoing developments in India-Nepal relations. The visit aimed to strengthen bilateral ties and address various issues of mutual concern. Both countries have shown a willingness to enhance cooperation in areas such as trade, infrastructure, and hydroelectric power. The visit signifies a positive step towards building a stronger and more prosperous relationship between India and Nepal. However, concerns and challenges persist in this relationship.

What are the recent developments in India – Nepal relations?

Improvement in relations: After a period of strain during the tenure of the past Prime Minister, relations between India and Nepal have been improving. The change in leadership in Nepal has contributed to the positive trajectory.

High-level visits: There have been several high-level visits between India and Nepal, indicating the efforts to strengthen bilateral ties. Nepalese Foreign Secretary visited New Delhi, and Indian Foreign Secretary visited Kathmandu, focusing on enhancing cooperation and resolving contentious issues.

Energy cooperation: India and Nepal have signed agreements to boost cooperation in the energy sector. India is involved in the development of several hydropower projects in Nepal, including the Arun III, Arun-4, Upper Karnali, Seti River 6, and West Seti projects. Long-term power trade agreements have been signed, aiming to import 10,000 MW of electricity from Nepal to India over the next 10 years.

Infrastructure projects: Both countries are working on infrastructure projects to improve connectivity. Recently, India Prime Minister and his Nepalese counterpart remotely unveiled the Kurtha-Bijalpura section of the railway line, virtually flagged off a cargo train from Bathnaha (India) to Nepal Customs Yard and inaugurated Integrated Checkposts (ICPs) at Nepalgunj in Nepal and Rupaidiha on the Indian side.

Cultural and religious ties: Efforts have been made to strengthen cultural and religious ties between India and Nepal. The expedited development of projects related to the Ramayana circuit has been discussed, reflecting the shared cultural heritage between the two countries.

Geopolitical dynamics: India is seeking to counter China's influence in Nepal through economic diplomacy and by expanding cooperation in various sectors.

Read more: [India, Nepal sign pacts on energy, transport](#)

What are the areas of Cooperation between India – Nepal relations?

Read here: [India-Nepal Relationship – Explained, pointwise](#)

What are the growth factors of India – Nepal relations?

Shared cultural and religious heritage: India and Nepal share a deep cultural and religious bond, which has been a significant growth factor in their relations. The cultural and religious ties between the two countries have played an important role in keeping the relations intact at the people's level. For example, the transport of Shilas (stones) from the Kaligandaki River in Nepal to Ayodhya in India for the construction of the Ram Mandir symbolizes the religiosity and cultural oneness between the two nations.

People-to-people connectivity: The open-border system and close people-to-people connection between India and Nepal have been vital in fostering vibrant and dynamic relations. The ease of movement and exchange of goods and services have created strong ties between the two countries.

Economic cooperation: Economic cooperation has emerged as a significant growth factor in India-Nepal relations. India has been involved in various development projects in Nepal, particularly in the energy sector.

Connectivity and infrastructure development: Both countries have focused on enhancing connectivity and infrastructure development, which has contributed to the growth of their relations.

Geopolitical dynamics: India's efforts to counter China's influence and check its growing presence in Nepal have led to increased engagement and cooperation between India and Nepal. India's economic diplomacy and focus on expanding economic cooperation with Nepal are aimed at maintaining its strategic interests in the region.

What is the importance of India to Nepal and vice versa?



Source: Maps of India

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India's importance to Nepal:

Economic dependence: Nepal relies on India for trade and transportation of goods, as well as access to sea routes.

Cultural and religious Ties: India and Nepal share a deep cultural and religious heritage, which strengthens their social bonds.

Assistance and support: During times of crisis, such as the 2015 earthquake and pandemic, India has provided significant aid and support to Nepal.

Infrastructure development: India's involvement in infrastructure projects, such as hydropower, contributes to Nepal's economic growth and development.

Security cooperation: India plays a crucial role in ensuring the security and stability of Nepal, supporting its defense and border management.

Nepal's importance to India:

Strategic location: Nepal shares a border of about 1850 km with five Indian States – Uttarakhand, Uttar Pradesh, Bihar, West Bengal and Sikkim, making it an important buffer state for India's security interests.

Connectivity: Nepal provides a crucial transit route for India to connect with other neighbouring countries and enhance regional connectivity.

Cultural and religious tourism: Nepal attracts a significant number of Indian tourists, especially for pilgrimage and religious purposes.

Energy cooperation: Nepal's hydropower potential can contribute to India's energy requirements, fostering cooperation in the energy sector.

Regional stability: A stable and friendly Nepal is essential for India's overall regional stability and influence.

What are the potential benefits of India – Nepal relations?

Economic growth: Cooperation between India and Nepal promotes trade, investment, and economic development, leading to improved living standards and job opportunities.

Infrastructure development: Joint initiatives contribute to the development of infrastructure projects like hydropower plants and transportation networks, boosting connectivity and trade facilitation.

Energy security: Nepal's hydropower potential can provide clean and renewable energy to India, enhancing energy security and reducing dependence on fossil fuels.

Cultural exchange: Strong cultural ties foster people-to-people connections, tourism, and mutual understanding, enriching the cultural fabric of both nations.

Security cooperation: Collaboration in security matters ensures border stability, counter-terrorism efforts, and intelligence sharing, promoting regional security.

Humanitarian assistance: During times of crisis, such as natural disasters and pandemic, India's support and aid to Nepal demonstrate solidarity and humanitarian cooperation.

Countering China's influence in the region: By maintaining a close relationship, India can help Nepal navigate its relations with China, ensuring that Nepal's interests are protected and balanced between the two neighboring powers. This helps prevent any undue dominance or overreliance on China, promoting Nepal's sovereignty and maintaining regional stability.

Read more: [China's growing influence in Nepal means India's diplomacy and project delivery will need to improve](#)

What are the challenges faced in developing India – Nepal relations?

Geopolitical rivalry: The presence of geopolitical rivalries, particularly between India and China, poses challenges to the development of India-Nepal relations. These rivalries can impact the dynamics and create tensions in the region.

Political instability: Nepal's frequent political instability, characterized by changes in government and power-sharing arrangements, creates challenges in maintaining a consistent and stable relationship with India.

Border disputes: Boundary disputes, such as the delineation of territories like Kalapani and Lipulekh, create challenges and strains in India-Nepal relations. These disputes can lead to tensions and hinder the development of a strong partnership.

Meddling and perceptions: Reports of Indian meddling in Nepali politics and a perceived "Big Brother" behaviour have at times strained relations and created negative perceptions among Nepali parties and politicians.

China's influence: China's expanding role in Nepal presents a challenge to India-Nepal relations. India needs to counter China's influence by strengthening its economic cooperation with Nepal and fostering closer ties.

Economic disparities: India's ability to invest in Nepal may be limited compared to China, leading to economic disparities. Bridging these gaps and ensuring equitable economic cooperation can be a challenge in the relationship.

Must read: [Kalapani territorial dispute between India and Nepal](#)

What should be done?

Strengthen bilateral engagement: Both India and Nepal should prioritize strengthening bilateral engagement through regular high-level visits, diplomatic dialogue, and people-to-people exchanges. This will help build trust and understanding between the two nations.

Address border disputes: India and Nepal should engage in constructive dialogue to address and resolve border disputes, such as the delineation of territories like Kalapani and Lipulekh. Finding mutually acceptable solutions will contribute to a more stable and cooperative relationship.

Avoid meddling and favouritism: India should refrain from interfering in Nepal's internal political affairs and avoid perceived favouritism towards specific political parties. A neutral and unbiased approach will contribute to a more balanced and harmonious relationship.

Counter China's influence: India should proactively counter China's growing influence in Nepal by strengthening its economic cooperation and infrastructure projects in the country. This will help mitigate any negative impact and maintain a healthy balance of power in the region.

Focus on long-term interests: Both India and Nepal should focus on the long-term interests and benefits associated with their relations. Building a strong and sustainable partnership based on mutual trust, shared prosperity, and common aspirations will pave the way for a brighter future for both nations.

Read more: [How To Be A Pal – on India Nepal Relations](#)

Sources: [Indian Express](#), [Financial Express](#), [Economic Times](#), [The New Indian Express](#), Outlook India ([Article 1](#) and [Article 2](#)) [ORF](#) and [Deccan Herald](#).

Syllabus: GS 2: International Relations – India and Neighbourhood relations.

The Issue of Indian railway safety – Explained, pointwise

Introduction

The issue of Indian railway safety has come under scrutiny following a recent Balasore tragic accident. This incident has raised concerns about the lapses in safety measures within the Indian railway system. It highlights the urgent need for comprehensive reforms and improved safety protocols to ensure the well-being of passengers and prevent such devastating accidents in the future.

About the recent train accident and its reason



Guardian graphic. Image: Google Earth. Source: Preliminary investigation

Source: The Guardian

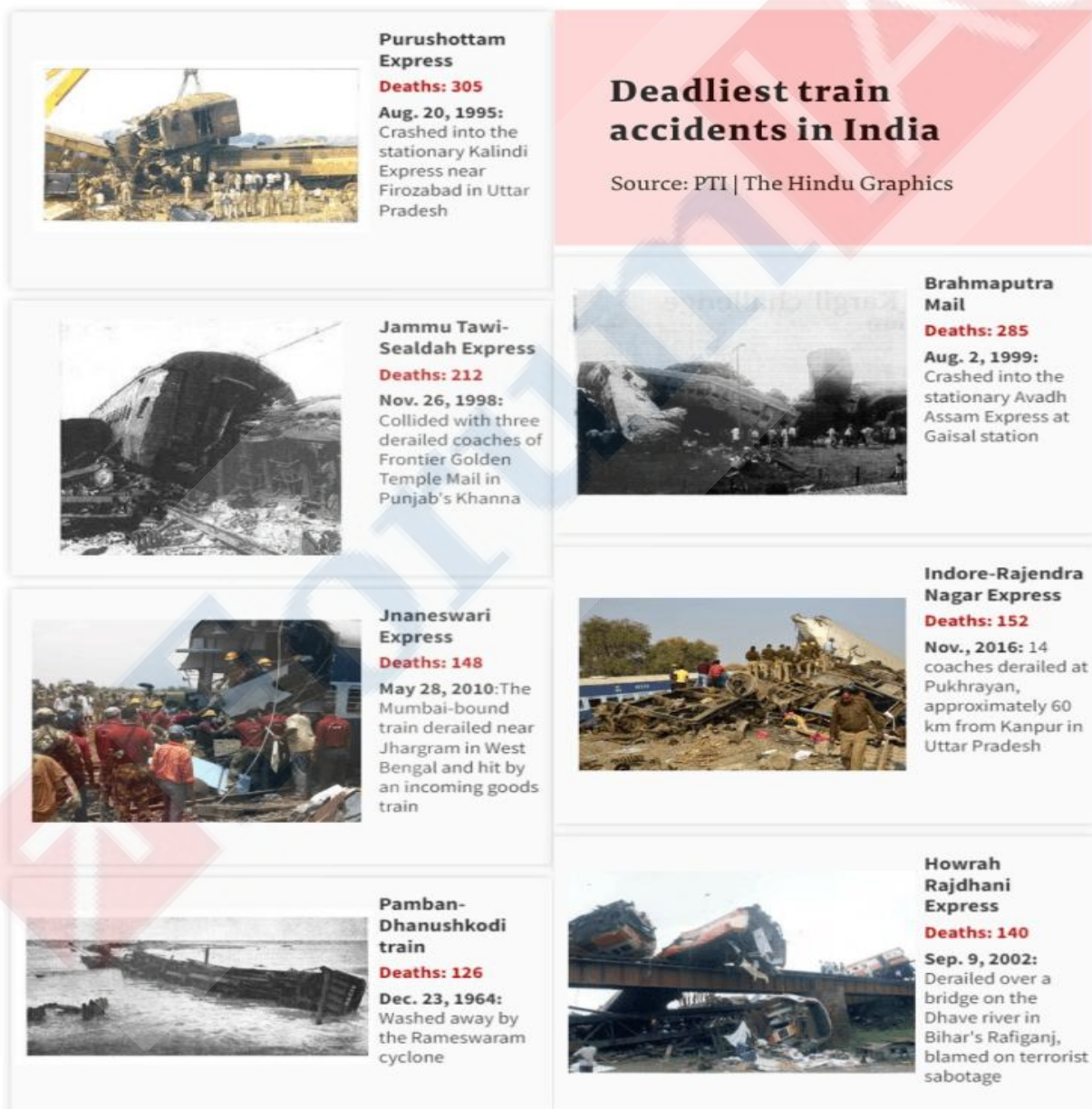
In a recent train accident in Balasore, Odisha, three trains collided, resulting in a high number of casualties and injuries. The collision occurred when the Chennai-bound Coromandel Express

veered off its track and crashed into a stationary goods train. The impact caused the passenger train's coaches to derail and hit another passenger train travelling in the opposite direction.

The preliminary investigation suggests that a technical glitch with the signalling system may have been the reason for the accident. The Railways authorities have identified the root cause and responsible parties and are taking steps to rectify the issue. This tragic incident highlights the ongoing challenges of rail safety in India and the need for improvements to prevent such accidents in the future.

What are the previous train accidents due to lapses in Indian railway safety?

According to the National Crime Records Bureau, an average 23,000 people died every year between 2010 and 2021 in railway accidents. These accidents were due to,



Source: The Hindu

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Derailments: Derailments have been a major cause of train accidents in India. Lapses in safety protocols, track maintenance, and failure to identify and rectify track defects have resulted in derailments. For example, the derailment of the **Puri-Haridwar Utkal Express in 2017**, which claimed 23 lives and injured many, was attributed to negligence in track maintenance.

Collisions: Train collisions have occurred due to lapses in signalling systems, human errors, and failure to maintain safe distances between trains. One such incident was the collision between the **Gorakhdham Express and a halted goods train in Uttar Pradesh, in 2014**, resulting in a high number of casualties and injuries.

Level crossing accidents: Lapses in ensuring the safety of level crossings have led to accidents involving trains and road vehicles. Failure to eliminate manned level crossings, inadequate warning systems, and negligence in adhering to safety procedures have contributed to such accidents. For instance, in 2011, 38 people have been killed and 17 others injured in a **train-bus collision in the Kanshiramnagar district of Uttar Pradesh**.

Signal failures: Malfunctioning or improper signalling systems have been responsible for train accidents. Inadequate maintenance, faulty equipment, and human errors in signalling operations have resulted in collisions and other mishaps. The collision of **two trains in Gaisal, West Bengal (1999)**, occurred due to a signalling error.

Overcrowding and overspeeding: Overcrowding of trains beyond their capacity and overspeeding have also led to accidents. Lack of proper crowd management and failure to enforce speed limits have been significant safety concerns. **The 2018 Amritsar train accident**, where a train struck a crowd watching a Dussehra event near the railway tracks, causing numerous fatalities, highlighted the risks associated with overcrowding.

Read more: [\[Kurukshetra May Summary\] Railway Connectivity – Explained, pointwise](#)

Why the safety of Indian Railways is paramount?

High volume of passengers: India is the fourth-largest rail network in the world at 68,043 km and almost 3.5 billion people travel on this network annually. With a massive population and millions of people relying on the railways for their daily commute, ensuring the safety of Indian Railways becomes crucial. The railways carry a significant volume of passengers, and any safety lapse can have catastrophic effects, as witnessed in past accidents.

Economic impact: Indian Railways is a crucial component of the country's transportation infrastructure and plays a vital role in the economy. Any disruption or safety-related issues can lead to economic setbacks, affecting industries, businesses, and overall development.

Lifeline for economic migrants: Trains are the lifeline for a bulk of India's poorer economic migrants. Their ability to move and improve their economic prospects has a positive impact on their home states through remittances. The economic survey used unreserved railway travel as a proxy for economic migration between 2011 and 2016 and concluded that the annual average inter-state migration was close to nine million.

Reputation and public trust: The safety of Indian Railways is essential to maintain the public's trust and confidence in the system. Instances of accidents and safety lapses can erode the reputation of the railways and result in passengers losing faith in the reliability and security of train travel.

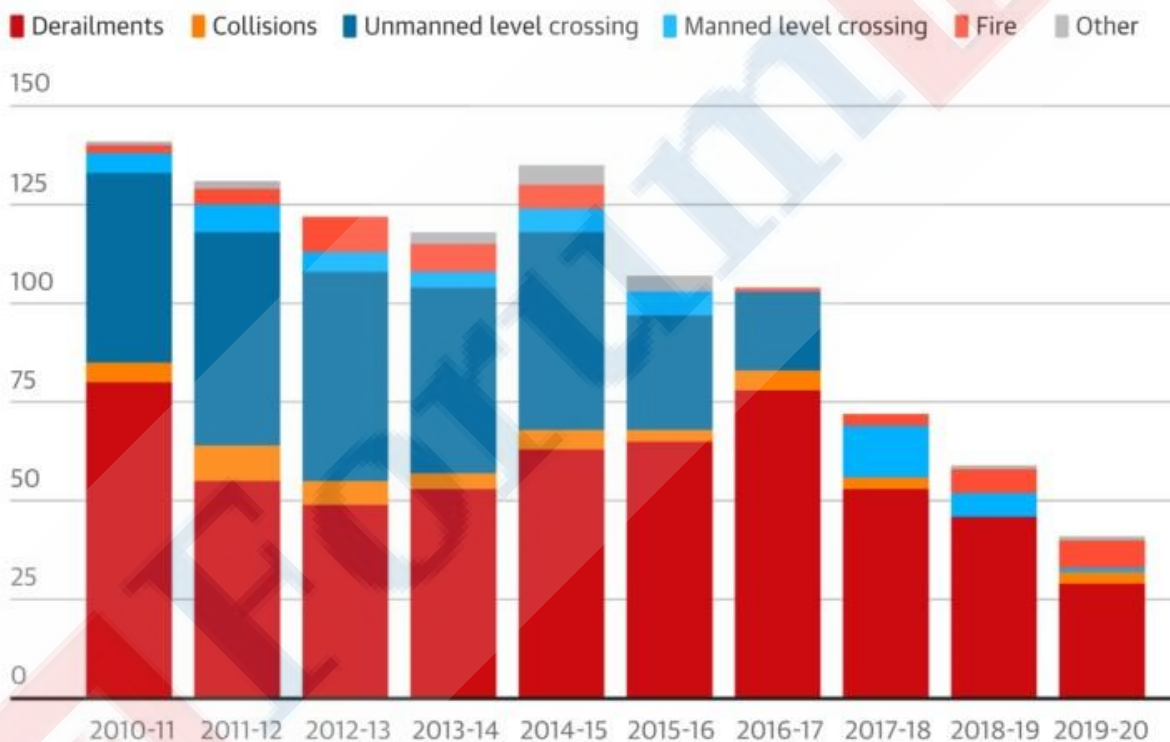
International comparison: Safety standards in Indian Railways are often compared with those of developed countries. Countries like Japan, China, and several European nations have demonstrated that high safety standards are achievable. The focus on safety is not only crucial for passenger well-being but also to align with global best practices and enhance India's image on the international stage.

Connectivity: Indian Railways is a lifeline for connectivity, ensuring people from various regions can travel and access opportunities for economic growth. Safety is crucial for fostering economic development, enabling the seamless movement of goods, and attracting investments.

Regulatory compliance: Safety is a regulatory requirement and a legal obligation for Indian Railways. Adhering to safety protocols and regulations is not only necessary to prevent accidents but also to comply with national and international standards, ensuring the railways operate within a framework that safeguards the well-being of passengers.

What are various government initiatives to address the Indian railway safety concerns?

Train accidents across India are broadly in decline



Guardian graphic. Source: Dhaval Desai at Observer Research Foundation. Note: accidents involving loss of life, injury, loss to railway property or interruption to rail traffic above specified Indian Railways thresholds

Source: The Guardian

Kavach system: KAVACH is an indigenously developed Automatic Train Protection(ATP) System for Indian Railways.

Rashtriya Rail Sanraksha Kosh (RRSK): The government initiated the RRSK in 2017-18, a dedicated fund aimed at carrying out safety-related work in a systematic manner.

Project Mission Raftar: It is an Indian Railway project, introduced in the Railway Budget of 2016-17 and approved by NITI Aayog in 2017. The goal is to double the average speed of freight trains and increase passenger train speed by 50%. While the focus is on improving speed, it indirectly contributes to safety by reducing travel time and potentially minimizing the risks associated with prolonged journeys.

Upgradation of infrastructure: The government has been investing significant funds in the modernization and upgradation of railway infrastructure. This includes the electrification of railway lines, the expansion of rail networks, and the introduction of high-speed and ultra-high-speed lines, such as the Vande Bharat Express.

Implementation of safety measures: Efforts have been made to implement safety measures across the railway network. These include the installation of fire and smoke detection systems in coaches, the provision of fire extinguishers, and the development of technologies like the Kavach application that aids locomotive pilots in triggering the brake system automatically.

Elimination of manned level crossings: The government has been working towards the elimination of manned level crossings, which are prone to accidents. Efforts are being made to replace them with underpasses, overpasses, and other safety measures to enhance railway safety.

Audit reports and recommendations: The Comptroller and Auditor General of India (CAG) periodically conducts audits of Indian Railways, identifying shortcomings and making recommendations to address safety concerns. These reports serve as a basis for corrective actions and improvements in safety protocols.

Read more: [Vande Bharat trains: Potential and Challenges – Explained, pointwise](#)

What are the challenges in ensuring the safety of Indian railways?

Technical glitches and system failures: The occurrence of technical glitches and system failures, such as the electronic interlocking error in the Balasore train crash, poses a significant challenge to ensuring the safety of Indian Railways. These issues can lead to signalling errors, track misalignment, and other critical safety hazards.

Funding constraints and prioritization: The allocation and utilization of funds for safety-related works face challenges. The decline in funding for track renewal, diversion of funds to non-priority tasks, and constraints in the Rashtriya Rail Sanraksha Kosh pose obstacles to effectively addressing safety concerns.

Inadequate maintenance and inspections: The CAG audit reports highlight shortcomings in maintenance activities, inspections, and track renewal processes. Shortfalls in inspections, failure to submit or accept inquiry reports after accidents, and declining funding for track maintenance contribute to safety concerns.

Congestion and overcrowding: The Indian Railways network experiences severe congestion, especially on major trunk routes, leading to overcrowded trains and increased risks. The high volume of passengers and inadequate capacity utilization can impact safety protocols and create challenges in managing passenger flow during emergencies.

Compliance and implementation: Ensuring compliance with safety protocols and timely implementation of safety measures across the vast railway network is a complex challenge. The

need for strict adherence to scheduled timelines for accident inquiries, acceptance of inquiry reports, and effective monitoring mechanisms is emphasized in the reports.

Human Factors: Human error, such as incorrect setting of points, mistakes in shunting operations, and overspeeding, has been identified as a significant factor contributing to train accidents.

What should be done?

Conduct thorough investigations: It is essential to conduct comprehensive and timely investigations into train accidents to identify the root causes and determine accountability. This includes submitting and accepting inquiry reports within prescribed timelines and ensuring that the findings are made public for analysis and discussion.

Strengthen maintenance practices: Prioritize track maintenance, inspections, and infrastructure upgrades to prevent derailments and ensure safe operations. Implement mechanized methods of track maintenance and leverage improved technologies to enhance the efficiency and effectiveness of maintenance activities.

Allocate sufficient funding: Ensure adequate funding for safety-related works, including track renewal, signalling systems, and infrastructure upgrades. Proper utilization of funds from initiatives like the Rashtriya Rail Sanraksha Kosh (RRSK) should be ensured to address safety priorities effectively.

Enhance staffing and training: Address staffing shortages in safety-related positions and provide comprehensive training programs for staff members involved in train operations. Focus on improving skills, knowledge, and adherence to safety protocols to minimize human errors.

Implement advanced technologies: Embrace advanced technologies, to enhance safety monitoring, early detection of faults, and real-time decision-making.

Prioritize safety as a culture: Foster a safety culture across the Indian railways by emphasizing the importance of safety at all levels. Encourage reporting of safety concerns, promote safety awareness and education among staff and passengers, and instil a sense of responsibility for safety in every aspect of railway operations.

Sources: [Live Mint](#), Business Standard ([Article 1](#) and [Article 2](#)), Times of India ([Article 1](#), [Article 2](#), [Article 3](#) and [Article 4](#)), Indian Express ([Article 1](#) and [Article 2](#)) and [The Hindu](#)

Syllabus: GS 3: Economic development: Infrastructure: Energy, Ports, Roads, Airports, Railways etc.

[Yojana May 2023 Summary] Digital health: leveraging technology for transforming health care – Explained, pointwise

Introduction

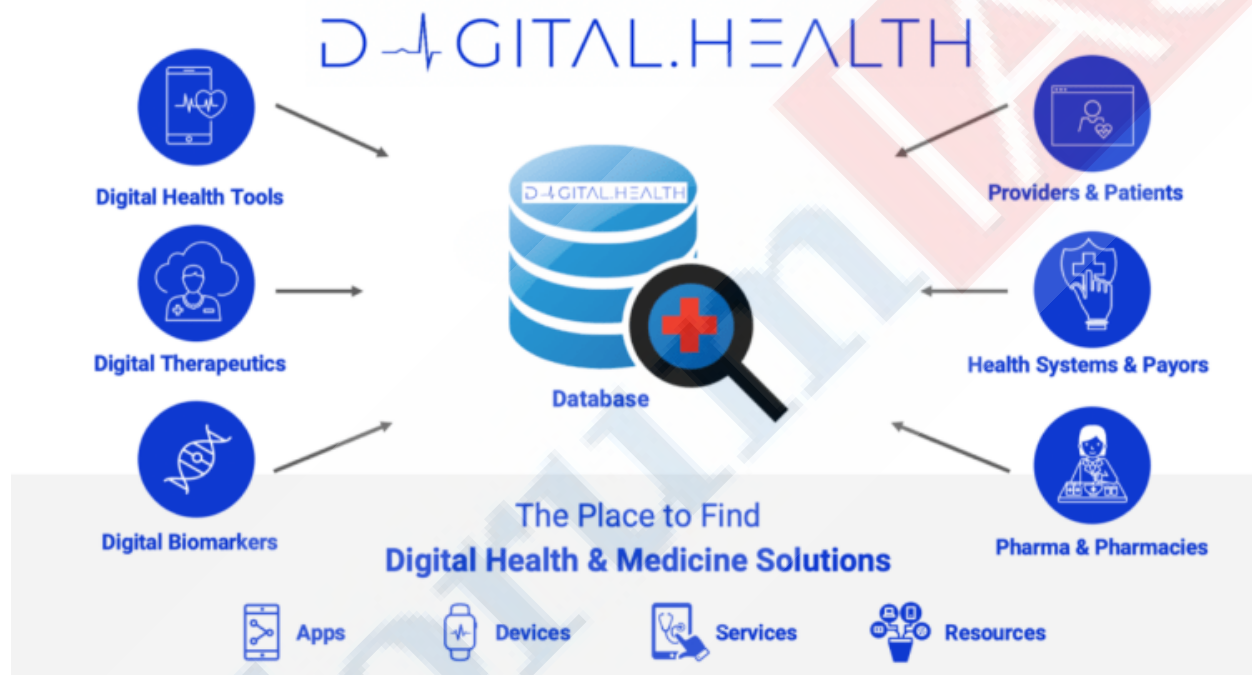
Digital health is a rapidly growing field in the global health sector. Various terms like e-health, telehealth, telemedicine, and health apps are used interchangeably with digital health. The landscape of digital health is expanding, encompassing mobile health (mHealth), digital data management, teleconsultations, wearable devices, and more. The growth of digital health

interventions has been accelerated by factors like the COVID-19 pandemic, increasing smartphone penetration, and investments in healthcare IT infrastructure.

What is digital health?

Digital health is a multidisciplinary framework that involves the integration of software, hardware, and services to provide healthcare solutions. It encompasses the use of disruptive technologies that provide digital and objective data accessible to both caregivers and patients. The goal of digital health is to establish an equal-level doctor-patient relationship, shared decision-making, and democratization of care. It focuses on improving the quality, efficiency, and accessibility of healthcare services through technology interventions.

What are the components of digital health?



Source: Digital Health

Digital health comprises various components, including:

Software applications: Health apps, electronic medical records (EMR), and health informatics platforms are part of the digital health ecosystem.

Hardware devices: Wearable health devices with sensors, mobile devices, and tablets with customized software applications are used for healthcare services.

Services: Telemedicine, teleconsultations, and telehealth platforms enable the delivery of healthcare services using information and communication technologies. These services facilitate diagnosis, treatment, prevention, research, evaluation, and continuing education of healthcare providers.

Note: Telemedicine refers to the delivery of healthcare services using information and communication technologies when distance is a critical factor. It involves the exchange of valid information for diagnosis, treatment, and prevention of disease and injuries. Telemedicine also facilitates research, evaluation, and continuing education for healthcare providers. It enables

remote consultations, making healthcare accessible to individuals who may not have easy physical access to healthcare facilities.

How has the growth of digital health interventions been fuelled?



Source: National Health Authority

Impact of the global pandemic: During the global pandemic, the healthcare sector received heightened attention and priority, leading to a significant boost in the adoption of digital health interventions. Telemedicine platforms and remote monitoring solutions saw a substantial increase in usage as they enabled healthcare providers to remotely monitor patient health and provide care.

Increasing smartphone penetration: The widespread use of smartphones across the globe has played a crucial role in the growth of digital health interventions. Mobile health apps and platforms have made healthcare more accessible and convenient for individuals. These apps allow users to monitor their health parameters, access medical information, and even consult with healthcare professionals remotely. For instance, apps that track and manage chronic diseases like diabetes or provide fitness guidance have become popular among users.

Rapid investments in healthcare IT infrastructure: Developing and developed nations have made substantial investments in healthcare IT infrastructure, further fueling the growth of digital health interventions. These investments have created a robust foundation for the

implementation of digital solutions and have facilitated the integration of various healthcare systems.

Prevalence of chronic diseases: The increasing prevalence of chronic diseases, such as diabetes, cardiovascular diseases, and cancer, has driven the demand for digital health solutions. These solutions offer personalized care plans, remote patient monitoring, and improved patient engagement, enhancing the management of chronic conditions.

What are the advantages of digital health?

Equity and inclusion in healthcare: Digital health interventions have significantly improved access to healthcare services, particularly for individuals in remote or underserved areas. Telemedicine and teleconsultation services allow patients to receive medical advice and treatment from the comfort of their homes, reducing the need for travel and long waiting times. Furthermore, digital health interventions can cater to diverse populations by providing multilingual platforms and accommodating various cultural and linguistic preferences.

Enhanced patient engagement and empowerment: Digital health solutions empower patients by providing them with access to their health information and tools to actively manage their health. Health apps and wearable devices enable individuals to track their vital signs, monitor their progress, and make informed decisions about their well-being.

Efficient and streamlined healthcare delivery: The adoption of digital tools in healthcare has led to increased efficiency and streamlined processes. Electronic medical records (EMRs) and health informatics platforms enable healthcare providers to access and share patient information seamlessly, reducing paperwork and eliminating errors associated with manual record-keeping.

Cost savings for patients and healthcare systems: Digital health interventions have the potential to reduce healthcare costs for both patients and healthcare systems. By minimizing the need for in-person consultations and hospital visits, telemedicine and remote monitoring solutions can lower out-of-pocket expenses for patients. Additionally, digital health technologies improve operational efficiency and resource allocation in healthcare institutions.

Enhanced quality of care and outcomes: Digital health interventions enable healthcare providers to deliver personalized and evidence-based care. Access to real-time patient data, health analytics, and decision support tools help healthcare professionals make informed clinical decisions, leading to improved treatment outcomes and patient safety.

Advancements in medical research and innovation: Digital health platforms and data analytics contribute to medical research and innovation by facilitating the collection and analysis of large-scale health data. This data-driven approach supports evidence-based decision-making, clinical trials, and the development of new treatments and interventions.

What are the government initiatives in digital health?

Ayushman Bharat Digital Mission (ABDM): Launched by the Government of India, ABDM aims to develop an integrated digital health infrastructure that connects various stakeholders in the healthcare ecosystem. It focuses on providing a wide range of data, information, and infrastructure services while ensuring the security and privacy of health-related personal information.

CoWIN: The Covid Vaccine Intelligence Network (CoWIN) system serves as the technological backbone of India's Covid-19 vaccination program. It enables citizens to book vaccination

appointments, facilitates vaccine stock management, and generates digital vaccination certificates. CoWIN has played a crucial role in the administration of millions of vaccine doses across the country.

Tele-MANAS: Telemental Health Assistance and Networking Across States (Tele-MANAS) is an initiative that provides free mental health services through video consultations with mental health specialists. It aims to offer counseling, medical interventions, follow-up services, and linkages to in-person care, particularly in remote areas and for vulnerable populations.

Ni-kshay 2.0 Portal: The Ni-kshay 2.0 Portal is a digital platform launched by the Indian government to support community involvement in tuberculosis (TB) care. It enables the registration of TB patients and facilitates additional support from donors, including diagnostic services, nutritional aid, and vocational support. The platform enhances the management and monitoring of TB patients' needs.

Health Technology Assessment (HTA): Under the Department of Health Research, the Health Technology Assessment in India (HTAI) serves as an institutional arrangement for evidence-based decision-making in health. HTAI evaluates the clinical effectiveness and cost-effectiveness of health technologies, medicines, and programs. It supports the formulation of health policies and the efficient allocation of resources.

Sanjeevani app: The Sanjeevani app is a telemedicine and teleconsultation platform launched by the Government of India. It has been widely recognized for its extensive medical services, especially during the Covid-19 pandemic. The app enables remote consultations between doctors and patients, providing access to healthcare services from the comfort of one's home. It has been instrumental in expanding the reach of healthcare and ensuring timely medical support, particularly in rural and hard-to-reach areas.

Must read: [Ayushman Bharat Digital Health Mission – Explained, pointwise](#)

Conclusion

Digi health has emerged as a transformative force in the healthcare sector, driven by advancements in technology and increased accessibility to healthcare services. It offers numerous advantages such as improved access to care, cost-effectiveness, enhanced efficiency, and better health outcomes. Government initiatives like Ayushman Bharat Digital Mission and the Sanjeevani app have played a pivotal role in advancing digi health interventions and benefiting a large population. The future of healthcare looks promising with the continued growth of digital health.

Source: Yojana

Syllabus: GS 2: Social Justice: Issues relating to development and management of Social Sector/Services relating to Health.

Plastic ban in India: Progress so far – Explained, pointwise

Introduction

The ban on single-use plastic in India has been a significant step towards addressing the plastic waste crisis and promoting sustainability. Since the ban was imposed, the government has taken various measures to enforce the regulations and raise awareness about the harmful impacts of

plastic pollution. However, challenges persist, including the availability of affordable alternatives, resistance from certain sectors, and the need for improved waste management infrastructure. Despite these challenges, progress has been made, but there is still a long way to go in achieving a plastic-free India.

About the decision for Plastic ban in India

The progress of the plastic ban in India has been driven by various legislative actions and global incidents that have highlighted the need for environmental conservation. The Plastic Waste Management and Handling Rules of 2011 laid the foundation for waste management, while the Plastic Waste Management Rules of 2016 focused on extended producer responsibility and plastic waste management strategies. In July 2022, the government imposed a ban on 19 single-use plastic items under the [Plastic Waste Management Amendment Rules, 2021](#).

This ban aligns with the global movement to combat plastic pollution, like, the United Nations Environment Assembly (UNEA 5.2). It has also been influenced by countries like Rwanda and Kenya, which have also implemented similar measures

What is the rationale behind the decision to plastic ban in India?

Plastic pollution crisis: India generated approximately 34.7 lakhs (3.47 million) tonnes of plastic waste in 2019 and 2020. The escalating levels of plastic waste and its adverse effects on ecosystems, including marine pollution, prompted the need for urgent action.

Insufficient recycling capacity: The recycling capacity in India is reported to be only half of the total plastic waste generated. A significant portion ends up in landfills, rivers, and oceans, exacerbating the environmental challenges.

Global concerns and international initiatives: The United Nations Environment Assembly (UNEA) established an Intergovernmental Negotiating Committee (INC) to draft an international legally binding instrument to address plastic pollution. This global focus on tackling plastic waste influenced India's decision to take measures to combat the issue domestically.

Increasing per capita plastic waste: Plastic consumption in the country has risen at a compounded annual growth rate (CAGR) of 9.7 per cent to 14 MT in the financial year 2016-17 to 20 million tonnes in 2019-20. This alarming trend emphasizes the urgent need to address the issue and reduce plastic consumption.

Health hazards: Single-use plastic, particularly when used for food and beverage packaging, poses significant health risks. Plastic chemicals, such as phthalates and bisphenol A (BPA), can leach into food and beverages, potentially causing endocrine disruption and other adverse health effects when consumed.

What is the progress made on single-use plastic ban in India?

1999 | First law on plastic waste management covers manufacture, sale and use. Bans carry bags less than 20 microns in thickness, and sale of food in recycled plastic

2003 | Rules amended, diluting curbs on carry bags

2011 | Plastic Waste (Management and Handling) Rules notified. Ban on use of plastic sachets for gutkha, tobacco and pan masala. Carry bags less than 40 microns in thickness banned

2016 | New Plastic Waste Management (PWM) Rules notified. They talk about making manufacturers, importers and brand-owners responsible. Two-year deadline to phase out multi-layered plastics proposed, but industries oppose it

2018 | Rules amended in April over industry concerns due to dearth of alternatives. In June, PM Modi pledges to phase out single-use plastic (SUP) by 2022

2019 | Standard guidelines for SUP issued. India bans entry of imported

solid plastic scrap in SEZs and export-oriented units

2021 | PWM rules amended to define SUP

2022 | EPR, or extended producer responsibility, guidelines notified for recycling. Some SUP items banned from July 1. Carry bags of less than 120 microns in thickness banned from Dec 31

STEPS TAKEN TO MAKE PLASTIC BAN WORK

- > Enforcement of ban on manufacturing and sale of SUP articles
- > Petrochemical industry told to stop supplying raw material to manufacturers of banned SUP goods
- > Customs told to stop import of banned SUP articles
- > Leading e-commerce companies (Big Basket, Amazon, Flipkart, etc.) told to stop sale/use of SUP articles on their platform
- > Penalties like environmental compensation, permit cancellation and closure of operations slapped on violators



INDIA'S WAR ON PLASTIC

BANNED PLASTIC ARTICLES

- > Flags
- > Candy sticks
- > Ice cream sticks
- > Earbuds
- > Sticks for balloons
- > Polystyrene (thermocool) for decoration
- > Plates, cups, glasses, forks, spoons, knives, straws, trays, etc.
- > Wrapping or packaging films around sweet boxes, invitation cards and cigarette packets
- > Banners thinner than 100 microns
- > Carry bags thinner than 120 microns

THE ROAD AHEAD

- > Promote alternatives to single-use plastic (SUP)
- > Create awareness on phasing out of SUP
- > Certify manufacturers of compostable plastics
- > Help petro-based SUP manufacturers transition to alternatives
- > Test alternative to plastic made from farm stubble at Indian Institute of Science



UNPLASTIC INDIA
An initiative of The Times of India

Take the pledge to eliminate single-use plastic. Join the **21-day Unplastic India Challenge** to adopt plastic-free choices for a better tomorrow. For details, visit www.unplasticindia.com or scan the QR code.



Source: TOI

Ban implementation: Regulatory agencies have conducted raids and spot-checks to seize banned single-use plastic items. For example, authorities in cities like Delhi, Mumbai, Bangalore, and Gurugram have reported seizing plastic items and imposing fines on violators.

Increased awareness: The ban has raised public awareness about the environmental impact of single-use plastics. Awareness campaigns have been conducted to educate the public about the need to reduce plastic waste. For instance, during the Durga Puja festival in Kolkata, several pandals (temporary structures) showcased the theme of plastic and marine pollution to raise awareness.

Development of alternatives: The ban has stimulated the development and availability of alternative products. Like, several companies have started producing biodegradable and compostable alternatives to single-use plastic items such as bags, cutlery, and packaging materials.

Public participation: Citizens have actively engaged in reporting violations through apps and other platforms, aiding enforcement efforts. The Central Pollution Control Board launched **the SUPPCB app**, which allows citizens to report the use of single-use plastics. This public participation helps in identifying and taking action against violators.

State-level initiatives: Some states have taken proactive steps to enforce the ban and curb the use of single-use plastics. For example, in Bihar, the Bihar State Pollution Control Board has implemented measures to address the issue of single-use plastics.

Transition to sustainable practices: Businesses and individuals have started adopting sustainable practices. For instance, several restaurants and food outlets have switched to eco-friendly alternatives such as paper straws, compostable cutlery, and biodegradable packaging materials.

Read more: [Plastic ban failure – Managing plastic waste needs a multi-pronged strategy](#)

What are the steps taken by the government to enforce single-use plastic ban in India?

Plastic waste management rules (2016 and amendment 2021): The government took legislative action to address single-use plastic by imposing a ban on specific items, including spoons, straws, plates, and polythene bags. The ban was implemented in stages, with a prohibition on plastic bags less than 75 microns thick taking effect on September 30, 2021. To strengthen the ban further, bags less than 120 microns thick were prohibited from December 31, 2022.

Extended Producer Responsibility (EPR): The concept of EPR was introduced as part of the government's strategy. Under EPR provisions, manufacturers, brand owners, and importers became responsible for managing the plastic waste generated from their products. They were required to establish systems for the collection and recycling of plastic waste to ensure environmentally sound disposal and reduce the burden on the environment.

Plastic waste management infrastructure: This involves improving waste collection, segregation, recycling, and disposal infrastructure. Investments are being made in recycling facilities and promoting circular economy models to reduce plastic waste and promote responsible plastic management.

Incentives and support: To facilitate the transition away from single-use plastics, the government provided support and incentives to businesses. Micro, small, and medium enterprises (MSMEs) were offered capacity-building workshops and technical assistance to develop alternatives to banned plastic items.

Collaboration and coordination: To effectively implement the ban, the government collaborated with market committees and trade bodies. By working together, government agencies, non-profit organizations, and civil society groups aimed to address the plastic pollution challenge more comprehensively.

Awareness campaigns: To educate the public about the harmful effects of single-use plastic and promote sustainable alternatives, the government organized public events and launched extensive awareness campaigns.

Read more: [India has made little progress in managing its plastic waste](#)

What are the challenges faced while enforcing single-use plastic ban in India?

Read here: [India's ban on select single-use plastic items: A start but still a long way from blanket ban](#) and [Single-use plastic ban: Reading the fine print reveals ominous loopholes](#)

What should be done?

For a successful plastic ban

If laws are not enforced appropriately then compliance is reduced or eliminated

Plastic bag bans and waste disposal systems have to be tackled together



Providing sustainable alternatives is essential for a successful plastic ban

There is a chance of a black market emerging in places where plastic has been banned

It is crucial to identify loopholes while drafting the legislation

Source: Hindustan Times

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Strict enforcement of the ban: Governments at all levels, including local, state, and national, need to ensure the strict enforcement of the ban on single-use plastic. This requires dedicated resources, monitoring mechanisms, and penalties for non-compliance. Authorities should conduct regular inspections, impose fines on violators, and take legal action against repeat offenders.

Public awareness and education: Awareness and educational campaigns can be conducted through various channels, including schools, universities, mass media, and social media platforms. The focus should be on changing people's behaviour and promoting the use of sustainable alternatives.

Promote sustainable alternatives: The availability and affordability of sustainable alternatives to plastic, such as paper bags, cloth bags, and biodegradable materials, need to be increased. Governments can provide incentives and support to businesses that produce and use eco-friendly packaging materials. This can include tax breaks, subsidies, and grants for research and development of innovative solutions.

Improve waste management infrastructure: Governments should invest in waste management facilities, recycling plants, and recycling awareness programs. This will help in reducing the amount of plastic waste that ends up in landfills, water bodies, and the environment.

Encourage industry responsibility: Industries and companies that produce and use plastic should take responsibility for their waste. Extended Producer Responsibility (EPR) programs can be implemented. This can incentivize companies to reduce plastic packaging, invest in recycling technologies, and promote sustainable practices throughout their supply chains.

International cooperation: Plastic pollution is a global issue that requires collaboration among nations. Governments should engage in international agreements and partnerships to address the problem collectively. Sharing best practices, knowledge, and technologies can accelerate progress in reducing plastic pollution.

Research and innovation: Continuous research and innovation are vital to finding sustainable alternatives to plastic and developing more efficient recycling methods. Governments, academic institutions, and private sectors should invest in research and development initiatives focused on finding innovative solutions to plastic pollution.

Read more: [Beating plastic pollution \(On plastic waste management rules\)](#)

Syllabus: GS 3: Environment and Bio-diversity: Environmental pollution and degradation.

Sources: Times of India ([Article 1](#), [Article 2](#) and [Article 3](#)), [ORF](#), [DW](#), [Indian Express](#), [DTE](#), [Scroll](#) and [Tribune](#)

Law Commission's recommendations on sedition and its relevance – Explained, pointwise

Introduction

The 22nd Law Commission's recommendations on sedition have recently stirred huge debate. The Commission advocated amendments instead of repeal, the Commission sought to refine the law to ensure alignment with past Supreme Court (SC) judgments and to appropriately calibrate punishments.

These recommendations have significant implications as they strive to balance the necessity of preserving national security and stability with the crucial democratic value of freedom of speech. However, concerns persist about the potential misuse of the law, its impact on dissent and democratic discourse, and the ambiguity surrounding its application.

What is Sedition?

Evolution of the law

Sedition is a cognisable, non-bailable and non-compoundable offence under Section 124A of Indian Penal Code

BEFORE INDEPENDENCE

1870: The section on sedition is introduced by the British to the IPC

The British rulers used the law to muzzle demands for freedom. For instance, Bal Gangadhar Tilak was the first person to be convicted of sedition in colonial India.

AFTER INDEPENDENCE

1948: In discussions, Indian leaders agree to drop "sedition" from the Constitution

1949: "Sedition" is no longer part of the Indian Constitution adopted on November 26 this year. However, Section 124A remains in the IPC

1951: Nehru govt brings in first amendment under Article 19(1)(a), and puts in "reasonable restrictions" on the right to free speech

1974: Indira Gandhi govt makes Section 124A a cognisable offence that authorises police to make arrests without a warrant

PRESENTLY

2019 data shows that sedition cases rose by 25% and arrests by 41% over the previous year. However, only 3% of cases led to convictions

Source: Hindustan Times

Must read: [Section 124 A or Sedition law](#)

What are the Law Commission's recommendations on sedition?

Law Commission's recommendation

- Punishment for anybody who brings or attempts to bring in "hatred or contempt", or excites "disaffection" towards the government, "with a tendency to incite violence or cause public disorder"
- "Tendency" means mere inclination to incite violence or cause public disorder rather than proof of actual violence or imminent threat to violence
- Alternative jail term increased from up to 3 years to up to 7 years
- Model guidelines by central government to introduce procedural safeguards to prevent misuse of law
- Amendment in CrPC to ensure no FIR is registered without preliminary enquiry and government permission for registering FIR

Source: Law Commission of India

Source: The Print

Amendment rather than repeal: The Law Commission recommends amending, rather than repealing, Section 124A of the Indian Penal Code (IPC). This is based on their belief that the elimination of this law could pose a threat to the country's security and integrity.

Alignment with Kedar Nath verdict: The Commission proposes that the amendment should align with the SC 1962 Kedar Nath verdict. This judgment stipulates that there must be a 'pernicious tendency to incite violence' to invoke the sedition law, safeguarding against its misuse for stifling free speech.

Incorporation of 'Tendency' concept: The recommended amendment to Section 124A incorporates the concept of a 'tendency to incite violence or cause public disorder', as clarified in the Kedar Nath judgment. The term 'tendency' refers to a mere inclination to incite violence or cause public disorder.

Procedural safeguards: The Law Commission suggests adding procedural safeguards to prevent misuse of the Sedition law. These may include a revision to Section 154 of the Criminal Procedure Code stipulating that an FIR under Section 124A can only be registered following a preliminary inquiry by a police officer and subsequent approval by the central or state government.

Must read: [Sedition law can be retained but with safeguards: Law Commission](#)

What are the reasons for the recommendation of strong sedition law by the Law Commission?

Read here: [The reasons Law Commission gave while recommending a stronger sedition law](#)

What are the recommendations of other commissions and judgments on sedition?

Contentious history

Section 124 A of the IPC penalises sedition as punishable with either imprisonment ranging from 3 yrs to a lifetime, a fine, or both

- Sedition law was introduced by the British in 1870, and almost dropped from the Constitution in 1948
- The word "sedition" disappeared from the Constitution on November 26, 1949 and Article 19 (1)(a) gave absolute freedom of speech and expression. However, Section 124A continued to stay in IPC.
- In 1951, Jawaharlal Nehru brought in the first amendment of the Constitution to limit the freedom under Article 19(1)(a) and enacted Article 19(2) to empower the State to put curbs in the form of "reasonable restrictions" on right to free speech.
- In its judgment in the Kedar Nath case in 1962, a Constitution bench upheld the validity of the sedition law. The bench held that Section 124A only penalised words that reveal an intent or tendency to disturb law and order or that seem to incite violence. This definition has been taken as precedent for all matters pertaining to section 124A ever since.
- According to the NCRB data, uploaded on its website, cases of sedition and under the stringent Unlawful Activities (Prevention) Act showed a rise in 2019, but only 3% of the sedition cases resulted in convictions.



Source: Hindustan Times

Recommendation of the 21st law commission: The 21st Law Commission of India also dealt with the question of sedition. While it didn't provide an explicit recommendation, it released a consultation paper in 2018 seeking public views on the sedition law.

The consultation paper suggested that every irresponsible exercise of the right to free speech and expression should not be termed seditious in a democracy. The Commission expressed concern that the sedition law should not be misused to suppress free speech, an essential element of a vibrant democracy.

Various Judgements on Sedition

Kedar Nath Singh vs Bihar (1962): The SC in the landmark judgement of Kedar Nath Singh vs Bihar in 1962 upheld the validity of the sedition law. However, it clarified that the application of the law should be limited only to acts involving intention or tendency to create disorder, or disturbance of law and order, or incitement to violence. This interpretation added a crucial qualifier to the sedition law – mere criticism of the government could not be termed as sedition unless it incited violence.

Balwant Singh vs Punjab (1987): In another important judgement, Balwant Singh vs Punjab, the SC held that mere words or slogans against the State which do not lead to violence cannot lead to invocation of section 124A IPC. In this case, two individuals were acquitted of sedition charges for shouting pro-Khalistan slogans on the day Indira Gandhi was assassinated. The court stated that raising of some lonesome slogans, a couple of times, which neither evoked any response nor any reaction from anyone in the public, would not amount to sedition.

Shreya Singhal vs Union of India (2015): In the case of Shreya Singhal vs Union of India in 2015, the SC held that vague and over-broad offences would be unconstitutional. While this case was primarily dealing with Section 66A of the IT Act, it set a precedent for laws restricting freedom of speech and expression, including the sedition law. The court ruled that any law, including those pertaining to sedition, which infringes on the right to free speech, must not be vague and must be as minimal as possible in its restriction of speech.

What are the concerns associated with the Law Commission's recommendations on sedition?

Risk of misuse due to the addition of 'Tendency': The Law Commission has suggested an amendment that includes a 'tendency' to incite violence as part of the sedition law. However, this introduces a new risk of misuse.

For example, any expression that may be interpreted as an inclination towards causing disorder could lead to sedition charges, even if no actual violence or public disorder occurs. This could potentially result in silencing critics of the government under the guise of maintaining public order.

Contradiction with prior supreme court rulings: The Commission's recommendation appears to contradict previous judgments of the SC. For instance, in the case of **Balwant Singh vs Punjab in 1987**, the Supreme Court ruled that merely raising slogans against the state can't be considered as a ground for applying section 124A IPC.

Contrary to this, the Commission's recommended language for the amendment may allow the invocation of sedition charges in such scenarios.

Risk of unconstitutionality due to vague offences: The report fails to consider the implications of the Shreya Singhal judgment (2015) where the SC declared that vague and over-broad offences could be unconstitutional. The Court maintained that such laws couldn't be considered a reasonable restriction on free speech. Despite this, the Commission's recommendations do not address this potential unconstitutionality.

Dismissing the relevance of comparative jurisdictions: The Commission's report dismisses the importance of learning from international experiences with sedition laws, stating that the Indian context is unique. However, this dismissive approach could prevent the application of beneficial insights and best practices from jurisdictions that have handled similar legal challenges. For example, the UK abolished its sedition law in 2009 considering it obsolete, which might be a pertinent point of discussion in the Indian context.

Read more: [Law Commission's sedition recommendations: Silencing what's left of dissent](#)

What should be done?

Clarification and amendment: There seems to be a strong consensus that Section 124A of the IPC, which defines the sedition law, needs to be clarified and amended. This includes aligning it with the SC 1962 verdict in the Kedar Nath Case.

Re-evaluating SC Judgments: Some concerns were raised regarding the Commission's interpretation of various SC judgments related to sedition. It might be prudent to reassess these judgments and their implications on the sedition law, including the Kedar Nath judgment, the Balwant Singh judgment, and the Shreya Singhal judgment.

Addressing constitutional challenges: The ongoing constitutional challenges to the sedition law need to be addressed. The report by the Law Commission seems to have disregarded these challenges. A comprehensive review of the law should take into account these challenges and precedents to ensure the law is in line with constitutional principles.

Considering societal context: The SC has noted that the sedition law might not be in tune with the current societal context. This suggests a need for a broader dialogue about the role of the sedition law in contemporary Indian society. There is a need to consider the factors such as changes in communication technology, social media, and evolving norms around free speech and dissent in this respect.

Sources: The Hindu ([Article 1](#), [Article 2](#) and [Article 3](#)), Times of India ([Article 1](#), [Article 2](#) and [Article 3](#)), [The Quint](#), [Live Law](#), [Indian Express](#), and [Hindustan Times](#).

Syllabus: GS 2: Indian Constitution and Polity – Criminal Justice System.

An analysis of PLI (production-linked incentive) scheme – Explained, pointwise

Introduction

The Production-Linked Incentive (PLI) scheme, a government initiative aimed at promoting domestic manufacturing and attracting investments, brings forth diverse perspectives. This includes criticism from renowned economist Raghuram Rajan.

Rajan has raised concerns regarding the potential risks associated with overreliance on fiscal subsidies and has emphasized the need for a comprehensive approach to address underlying structural issues in the manufacturing sector.

While the PLI scheme intends to spur job creation and boost investment, it is crucial to examine both the positive aspects and the challenges associated with its implementation to assess its overall effectiveness.

About the PLI Scheme

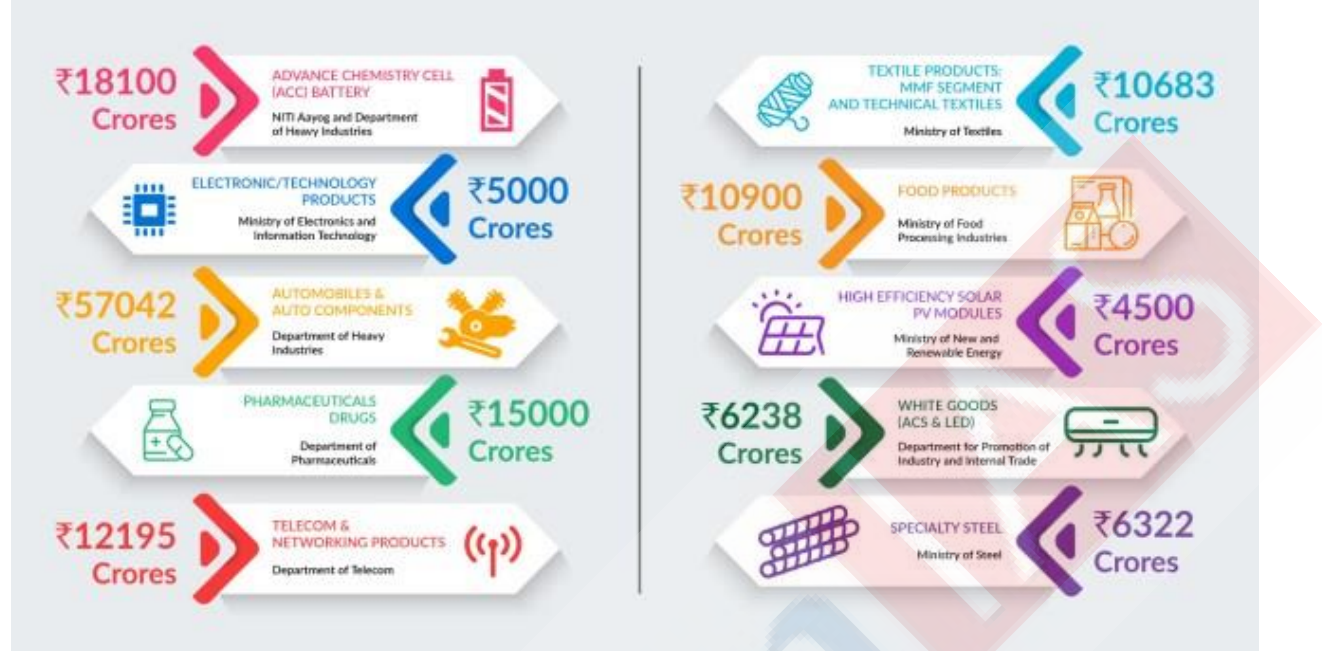


Source: PIB

The PLI scheme is a financial initiative launched by the Indian government to boost domestic manufacturing and make it globally competitive. It began in March 2020, covering mobile manufacturing and IT hardware initially, and has since expanded to include 14 sectors such as pharmaceuticals, telecom, food products, automobiles, textiles, and drones. The scheme offers subsidies based on additional investments, incremental sales, and value additions.

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

What are the achievements of the PLI Scheme so far?



Source: Ingressgc

Increased export growth: Under the PLI scheme, sectors such as electronics, automobiles, pharmaceuticals, white goods, and textiles have witnessed significant growth in exports. For example, exports of electronic goods increased by 57.36 percent during March 2023 at USD 2.86 Billion as compared to USD 1.82 Billion in March 2022.

Attracting investments: The PLI scheme has successfully attracted both domestic and foreign investments in various sectors. Companies have shown interest in setting up manufacturing facilities in India to leverage the incentives provided by the scheme. For instance, The 20 automobile companies have proposed a total investment of around Rs. 45,000 crores (US\$ 5.95 billion).

Job creation: The PLI scheme has played a crucial role in generating employment opportunities across sectors. For example, the drone manufacturing sector alone is expected to create more than 10,000 direct jobs, while the textile sector is estimated to create over 7.5 lakh additional jobs.

Incremental production and investments: The PLI scheme has stimulated incremental production and investments in targeted sectors. It is expected to bring in incremental investment of INR 7,920 crore and incremental production worth INR 1,68,000 crore.

Improving India's "Global Manufacturing Rankings": India's efforts towards manufacturing growth, including the PLI scheme, have been recognized globally. India secured second position after China in the Global Manufacturing Risk Index 2021, reflecting the progress made in the manufacturing sector.

Contribution to GDP: The PLI scheme is expected to have a positive impact on India's GDP. It is estimated to add 1.7% to the country's GDP by 2027, generating significant economic growth and contributing to overall prosperity.

Read more: [PLI scheme push: Electronics is India's fastest-growing export](#)

What are the challenges faced during the implementation of the PLI Scheme?

Regulatory hurdles: Despite efforts to simplify the regulatory environment, Indian businesses often grapple with red tape, bureaucratic hold-ups, and complex regulatory requirements that can slow down or complicate the implementation of the PLI scheme. Achieving consistency and transparency in policy regulations across states and sectors is a challenge.

Infrastructure bottlenecks: Infrastructure gaps, especially in terms of power, logistics, and connectivity, can pose significant challenges to companies looking to scale their operations under the PLI scheme. Inadequate infrastructure can increase operational costs and hamper competitiveness.

Access to capital: Despite the financial incentives provided by the PLI scheme, businesses, especially small and medium-sized enterprises, often face difficulties in accessing affordable capital. This can limit their ability to invest in new technologies, expand capacity, or upgrade their infrastructure.

Skills gap: While India boasts a large workforce, there's a notable shortage of highly-skilled labour, particularly in advanced technology sectors targeted by the PLI scheme.

Lack of advanced technology: The adoption of advanced technologies, which is essential for competitiveness in many of the targeted sectors, is still relatively low in India. The cost and complexity associated with technology adoption can pose challenges for companies looking to benefit from the PLI scheme.

Geopolitical factors: Fluctuations in global trade dynamics and geopolitical tensions can impact the outcomes of the PLI scheme. For instance, trade restrictions, tariffs, or changes in the global supply chain can affect the export potential of companies benefiting from the scheme.

Structural issues in the economy: Structural issues, such as small-scale operations, regulatory constraints, and fragmented supply chains, can hinder the effectiveness of incentive schemes like the PLI.

Read more: [What critics of the govt miss: Not much is lost if the PLI scheme fails](#)

What are the concerns against PLI Scheme?

While the PLI scheme has been lauded for its potential to boost India's domestic manufacturing sector, there are several concerns that critics have raised:

Selective sector focus: Critics argue that the PLI scheme's focus on selected sectors may lead to a distortion in the allocation of resources. The scheme could create an uneven playing field where some sectors enjoy more benefits than others.

Dependence on subsidies: There's a concern that the PLI scheme may create industries that are dependent on government subsidies for their survival. This could potentially lead to long-term problems, as these industries may not be competitive without ongoing government support.

Implementation challenges: Implementing the PLI scheme effectively across diverse sectors could be challenging. The administration needs to ensure that the benefits reach the intended recipients, which requires a robust infrastructure and a high level of administrative efficiency.

Fiscal burden: The scheme involves substantial financial outlays by the government. Critics argue that this could increase the fiscal burden on the government, especially in a post-pandemic economy where resources are stretched thin.

Regional Trade Agreements (RTA): Critics argue that by focusing on domestic manufacturing, the Indian government may be missing out on opportunities presented by regional trade agreements. They contend that participation in RTAs could expose India to larger markets and international supply chains.

Attracting quality investments: While the scheme is designed to attract investments, there are concerns about whether it will attract high-quality investments that can lead to technology transfers and improvements in productivity.

Environmental concerns: As industries scale up their manufacturing capabilities under the PLI scheme, there will be an increased need for sustainability and environmental conservation measures. Balancing growth with environmental responsibility could pose a challenge.

Read more: [Testing times for PLI schemes: Covid-related delays put firms in pressure](#)

What should be done to improve manufacturing?

Invest in infrastructure: Efficient logistics and infrastructure are vital for a robust manufacturing sector. This involves improving transportation networks (road, rail, air, and sea), streamlining port processes, improving power supply, and building efficient industrial clusters.

Improve “Ease of Doing Business”: Reducing bureaucratic red tape, simplifying regulations, and providing a clear and stable policy environment can make it easier for businesses to operate, invest, and expand their manufacturing capabilities.

Boost skills and innovation: Encourage and invest in technical and vocational education and training to build a skilled workforce. In addition, promoting research and development can foster innovation, which can drive productivity growth in the manufacturing sector.

Promote digital transformation: Leveraging Industry 4.0 technologies such as AI, IoT, and automation can improve efficiency, reduce costs, and boost the competitiveness of the manufacturing sector.

Enhance access to capital: Making it easier for manufacturers to access affordable capital can spur investment in new technologies and capacity expansion.

Review trade policies: Evaluate existing free trade agreements (FTAs) to ensure they benefit the domestic manufacturing sector. Also, consider engaging in FTAs that provide Indian manufacturers with access to global markets.

Sustainable manufacturing practices: Adopt and promote sustainable and green manufacturing practices. This not only helps in environment conservation but also opens up new markets for sustainable products.

Sources: [The Hindu](#), [Invest India](#), [The Hindu Businessline](#), [Livemint](#), [Hindustan Times](#), [The New Indian Express](#), [Business Standard](#), [Economic Times](#), [Fortune India](#) and [Indian Express](#).

Syllabus: GS 3: Economic development: Changes in industrial policy and their effects on industrial growth.

Regulating AI (Artificial Intelligence): Need and way forward – Explained, pointwise

Introduction

The recent visit of Sam Altman, the CEO of OpenAI, to India has reignited the discussion on the need for regulating Artificial Intelligence (AI). With AI rapidly advancing and its potential impact on society, there is a growing consensus among experts that regulation is necessary to ensure responsible and ethical use of AI technology.

As countries like India, the European Union, the United States, and Japan are actively working on regulations, it is crucial to explore the need for AI regulation and chart a way forward that balances innovation and societal well-being.

Why there is a need to regulate AI?

Bias and discrimination: AI systems can inherit biases from the data they are trained on, leading to discriminatory outcomes. For example, facial recognition algorithms have been shown to have higher error rates for women and people with darker skin tones.

Lack of transparency: Many AI algorithms operate as black boxes, making it difficult to understand how they reach their decisions. This lack of transparency raises concerns about accountability and the potential for unfair or biased outcomes.

Lack of accountability: The responsibility and accountability for AI decisions can be unclear, especially when complex systems are involved. This poses challenges in determining liability in case of AI-related accidents or harm caused by AI systems.

Privacy and data protection: AI systems often rely on vast amounts of personal data, raising concerns about privacy and data protection. Improper handling of data can result in unauthorized access, misuse, or breaches of sensitive information.

Security risks: AI systems can be vulnerable to cybersecurity threats and attacks. Adversarial attacks can manipulate AI models to produce incorrect or malicious results, posing risks in critical domains such as autonomous vehicles or healthcare.

Ethical considerations: AI raises ethical questions related to the impact on jobs, social inequality, and the concentration of power. For example, automated decision-making in hiring processes may perpetuate existing biases and result in unfair outcomes.

Lack of regulation and standards: The rapid advancement of AI has outpaced the development of comprehensive regulatory frameworks and industry standards. This creates a regulatory gap and potential risks associated with unchecked AI development and deployment.

Must read: [What is Generative AI? Highlight its implications?](#)

What are the various options for regulating AI?

Soft law approach: Soft law approaches include options such as guidelines, best practices, industry standards, etc. This can be more flexible and adaptable to the rapidly evolving AI landscape. Soft law can provide initial guidance without imposing rigid regulations.

Graduated regulation: Implement a regulatory framework that takes into account the size and capacity of AI companies. Differentiate between large, established companies and smaller startups, applying more stringent regulations to the former while allowing the latter some flexibility to encourage innovation.

Regulatory sandboxes: Create regulatory sandboxes or controlled environments where startups and small companies can experiment with AI technologies under supervision. This allows for innovation while ensuring compliance with basic ethical and safety standards.

Collaboration with the tech community: Engage with the tech community, including startups and small companies, in the regulatory process. The governments should seek input and feedback to better understand their unique challenges and ensure that regulations are practical and effective.

A balance between hard and soft Law: Strike a balance between hard law (legislation and binding regulations) and soft law (guidelines and standards) to create a regulatory framework that is both enforceable and adaptable to technological advancements.

Global regulatory cooperation: Foster international collaboration to establish a unified global regulatory framework for AI. This can involve engaging with other countries and international organizations to develop common standards, principles, and guidelines that can be adopted universally.

Must read: [Generative AI \(Artificial Intelligence\): Benefits and Challenges – Explained, pointwise](#)

What are the advantages of regulating AI?

Ethical use and accountability: Regulation ensures that AI systems are developed and deployed in an ethical manner, holding organizations accountable for their actions. This promotes responsible AI practices and prevents the misuse of AI technologies.

Fairness and non-discrimination: Regulating AI can help address bias and discrimination by enforcing fairness principles. It ensures that AI systems do not disproportionately impact certain groups and promotes equal opportunities for all individuals.

Consumer protection: Regulating AI protects consumers from fraudulent or deceptive practices. It ensures transparency and fairness in AI-driven products and services, enabling consumers to make informed decisions and seek redress in case of harm.

International collaboration: Regulations facilitate international cooperation and harmonization of AI standards. This promotes consistency in ethical practices, fosters global collaboration, and addresses challenges associated with cross-border AI applications.

Trust and public confidence: Regulations help build trust and public confidence in AI technologies by ensuring responsible and accountable use. This can lead to wider adoption of AI solutions and increased societal acceptance.

Read more: [How should humans respond to advancing artificial intelligence?](#)

What are the challenges in regulating AI?

Rapid technological advancement: AI is evolving at a rapid pace, making it challenging for regulators to keep up with the latest developments and effectively regulate a technology that is constantly evolving.

Complexity and development: Regulating AI is challenging due to its complexity and the speed at which it develops. Creating effective regulations that address the intricacies of AI systems and keep pace with technological advancements can be difficult.

Increased costs and competition: Compliance with regulations may impose additional costs on businesses, particularly smaller companies and startups, limiting their ability to compete in the AI market. The burden of regulatory compliance could disproportionately affect smaller players.

Accountability and liability: Determining responsibility and liability when AI systems cause harm or make erroneous decisions can be challenging. Clarifying the legal frameworks and accountability structures surrounding AI is crucial for effective regulation.

International cooperation: AI regulation requires international cooperation and collaboration to address global challenges, harmonize standards, and prevent regulatory arbitrage. Developing consensus among different countries with varying interests and priorities can be a complex task.

Read more: [Bot's The Problem – On the issue of Artificial Intelligence](#)

How global countries are planning to regulate AI?



Source: Pixelplex

India is planning to regulate AI through several initiatives and frameworks:

Digital India framework: India is developing a comprehensive Digital India framework that will include provisions for regulating AI. The framework aims to protect digital citizens and ensure the safe and trusted use of AI.

An ecosystem of modern cyber laws and regulations: India is constructing an ecosystem of modern cyber laws and regulations driven by the principles of openness, safety, trust, and accountability. These laws and regulations will provide a framework for governing AI technologies.

National AI programme: India has established a National AI Programme to promote the efficient and responsible use of AI. **National Data Governance Framework Policy:** India has implemented a National Data Governance Framework Policy to govern the collection, storage, and usage of data, including data used in AI systems. This policy will help ensure the ethical and responsible handling of data in the AI ecosystem.

Draft Digital India Act: The Ministry of Information Technology and Electronics is working on framing the draft Digital India Act, which will replace the existing IT Act. The new act will have a specific chapter dedicated to emerging technologies, particularly AI, and how to regulate them to protect users from harm.

Rest of the World:

European Union: The European Union is working on the draft [Artificial Intelligence Act \(AI Act\)](#) to regulate AI from the top down. The Council has published its position, and dialogues with the European Parliament are expected to begin. The goal is to finalize the legislation by the end of 2023.

United States: The White House Office of Science and Technology Policy has published a non-binding Blueprint for the Development, Use, and Deployment of Automated Systems (Blueprint for an AI Bill of Rights), listing principles to minimize potential harm from AI. The National Institute of Standards and Technology (NIST) has released a non-binding AI Risk Management Framework to help companies assess and manage risks associated with AI systems.

Japan: Japan's approach to regulating AI is guided by the Society 5.0 project, aiming to address social problems with innovation. The Integrated Innovation Strategy Promotion Council has published social principles for human-centric AI and guidelines for AI developers and companies. The Governance Guidelines for Implementation of AI Principles provide action goals and implementation examples for AI companies.

China: China has established the "Next Generation Artificial Intelligence Development Plan" and published ethical guidelines for AI. The country has also introduced specific laws related to AI applications, such as the management of algorithmic recommendations.

Read more: [Regulating AI – Guidelines will need to evolve over time](#)

What should be done?

Establish comprehensive and flexible regulatory frameworks: The governments should develop clear guidelines and laws that address various aspects of AI, including data privacy, algorithmic transparency, accountability, and potential biases. These frameworks should be adaptable to the rapidly evolving nature of AI technology.

Foster international cooperation: Given the global nature of AI and its potential impact, collaboration among countries is essential. International standards and agreements should be developed to promote ethical practices and ensure consistency in regulation across borders.

Encourage industry self-regulation: Companies involved in AI development should take responsibility for ensuring the ethical and responsible use of their technologies. Self-regulatory initiatives can complement government regulations and demonstrate a commitment to safeguarding public interests.

Promote transparency and explainability: AI algorithms and systems should be transparent, with clear explanations of their functioning and decision-making processes. This will enable

users and regulators to understand how AI systems operate and detect potential biases or discriminatory outcomes.

Invest in AI research and education: Governments, academic institutions, and industry stakeholders should allocate resources to research, development, and education in the field of AI. This will help create a well-informed workforce capable of addressing regulatory challenges and ensuring the safe and responsible deployment of AI technologies.

Sources: Indian Express ([Article 1](#) and [Article 2](#)), [Business Today](#), [Live Mint](#), [Computer Weekly](#), [Forbes](#), [Hindustan Times](#), [Economic Times](#), [One India](#) and [Harvard Business Review](#).

Syllabus: GS 3: Science and Technology – developments and their applications and effects in everyday life.

[Kuruksheetra June 2023 Summary] Fostering Water Management for Food Security – Explained, pointwise

Introduction

Water management for food security is a pressing global concern, particularly in areas like India, where agriculture plays a vital role. The agricultural sector is the biggest consumer of water globally, accounting for about 70% of all surface and groundwater withdrawals. India, in particular, uses 80-90% of the total water for agriculture. However, the looming threat of climate change, coupled with a booming population and shifting land-use patterns, has heightened concerns around water scarcity, necessitating urgent conservation measures.

Why Fostering Water Management for Food Security is Necessary?

Water availability and Sources	
Average Annual Rainfall (1985-2015)	105 mm (3880 BCM)
Annual Rainfall (2020)	1283 mm
Mean Annual Natural Run-Off	1999.2 BCM
Total Utilisable Water	1122 BCM
Net Ground Water Availability (2013)	411 BCM
Estimated Utilisable Surface Water Potential	690 BCM
Total Replenishable Ground Water Resources (2013)	432 BCM
Ultimate Irrigation Potential	139.9 Mha (From Surface Water= 76 Mha and 64 Mha from Groundwater)

Source: Kuruksheetra

Rising Demand for Food: With the world population expected to reach nearly 10 billion by 2050, there is an increased demand for food. Efficient water management ensures that this growing demand can be met without depleting our water resources.

Climate Change: Changing climatic patterns have resulted in water scarcity in certain areas and floods in others. Effective water management helps in building resilience against such adverse effects of climate change, thereby ensuring food security.

Depletion of Water Resources: Overexploitation of water resources, particularly for irrigation, has led to their rapid depletion. Fostering efficient water management practices can prevent further depletion and ensure the sustainability of these resources.

Uneven Distribution of Water Resources: Water resources are not evenly distributed across the globe, leading to areas of abundance and areas of scarcity. Efficient water management can help in the optimal utilization of these resources, ensuring food security in all regions.

Socio-economic Considerations: A large section of the global population is dependent on agriculture for their livelihood. Efficient water management not only ensures food security but also economic security for these individuals.

Must read: [\[Kurukshetra April 2023 Summary\] Groundwater Water Management through Panchayats – Explained, pointwise](#)

What initiatives has the Government of India taken to Fostering Water Management for Food Security?

Sector	Water Demand in BCM (Billion Cubic Meter)								
	Standing Sub-Committee of MOWR			NCIWRD					
	2010	2025	2050	2010		2025		2050	
				Low	High	Low	High	Low	High
Irrigation	688	910	1072	543	557	561	611	628	807
Drinking water	56	73	102	42	43	55	62	92	111
Industry	12	23	63	37	37	67	67	81	81
Energy	5	15	130	18	19	31	33	63	70
Other	52	72	80	54	54	70	70	111	111
Total	813	1093	1447	694	710	784	843	973	1180

Source: Kurukshetra

Pradhan Mantri Krishi Sinchayee Yojana (PMKSY): Launched in 2015-16, PMKSY aims to provide irrigation facilities to every farm and improve water efficiency. It amalgamates multiple schemes such as Accelerated Irrigation Benefit Programme (AIBP), Integrated Watershed Management Programme (IWMP), and the On Farm Water Management (OFWM). The scheme has a budget of \$93,068 crore for 2021-26 and is expected to benefit around 22 lakh farmers.

Per Drop More Crop (PDMC): A part of the PMKSY, this scheme was launched in 2015-16 with the goal of improving water use efficiency and productivity while reducing input costs. It promotes the use of Micro Irrigation technologies like drip and sprinkler irrigation systems. The

Government also provides financial assistance or subsidy to small and marginal farmers at 55% of the indicative unit cost and at 45% to other farmers under the PDMC scheme.

Sahi Fasal Campaign: Initiated by the Ministry of Jal Shakti in 2019, this campaign is designed to educate farmers about efficient farming methods and crop selection to maximize water usage.

Bhartiya Prakratik Krishi Paddhati (BPKP): The Government promotes natural farming through this scheme. It aims to reduce cultivation costs, restore soil ecosystems, conserve resources, boost farmer incomes, and ensure environmental sustainability. It is estimated that natural farming requires 50-60% less water and electricity and reduces methane emissions.

Must read: [Natural Farming – process, advantages and challenges – Explained, pointwise](#)

What are some measures to mitigate the water footprints of crops?

Promote Efficient Irrigation Systems: Micro-irrigation systems, such as drip and sprinkler irrigation, are being promoted under the 'Per Drop More Crop' initiative. These systems deliver water directly to the plant roots, reducing evaporation and runoff, thus significantly reducing the water footprint.

Crop Diversification: The government is encouraging farmers to grow less water-intensive crops. Crop rotation and multi-cropping are also promoted as they can enhance soil fertility and reduce the water footprint.

Natural Farming Methods: Practices such as the Bhartiya Prakratik Krishi Paddhati (BPKP) promote natural farming, which requires 50-60% less water and electricity compared to conventional farming methods.

Promote Rainwater Harvesting: Rainwater harvesting is being encouraged at both the farm and community level to collect and store rainwater for later use. This can significantly reduce the demand for groundwater and thus the water footprint.

Increase educational programs: The Sahi Fasal campaign educates farmers about water-efficient farming methods and appropriate crop selection based on regional water availability. For instances, nutritious Millets such as Shree Anna Bajra and Shree Anna Jowar are encouraged for cultivation in water scarce regions of the country.

Use of Water-Efficient Goods: The Bureau of Water Use Efficiency (BWUE) has published Indian Standards for micro-irrigation products to promote water efficiency in agriculture.

Monitoring and Regulation: Regular monitoring of Water Use Efficiency (WUE) across all sectors helps to identify areas for improvement and devise effective strategies for reducing the water footprint. This will also help in achieving SDG target 6.4, which focuses on 'substantially increase water- use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity by 2030'.

Community Participation: The government encourages community participation in water conservation. Self-help groups and cooperatives disseminate techniques like rainwater harvesting, groundwater recharge, and the use of micro-irrigation technology to farmers.

Must read: [Water Management needs a Hydro Social Approach](#)

The imperative to foster water management for food security is clear, given the projected population growth, climate change implications, and increasing water stress. With agricultural practices consuming the majority of India's water resources, promoting water-efficient farming techniques and technologies is key. Policymakers and scientists are actively working on bringing about a shift from intensive to resource-efficient, climate-smart farming, but much work remains to be done. Through collective efforts and the successful implementation of water conservation policies, it is possible to ensure food security and sustainable socio-economic growth.

Source: Kuruksheetra

Syllabus: GS 1: Human and Economic Geography: Distribution of key natural resources across the world (including South Asia and the Indian sub-continent).

El Nino: Concept and impacts – Explained, pointwise

Introduction

The National Oceanic and Atmospheric Administration (NOAA) recently announced the return of the El Niño phenomenon to the Pacific Ocean. El Niño is a climate pattern that emerges sporadically along the equatorial Pacific and is known for triggering global weather changes. The impacts of El Niño extend far beyond weather, influencing marine ecosystems, agriculture, and human health. As this powerful force returns, understanding the concept of El Niño and its widespread impacts becomes crucial for everyone.

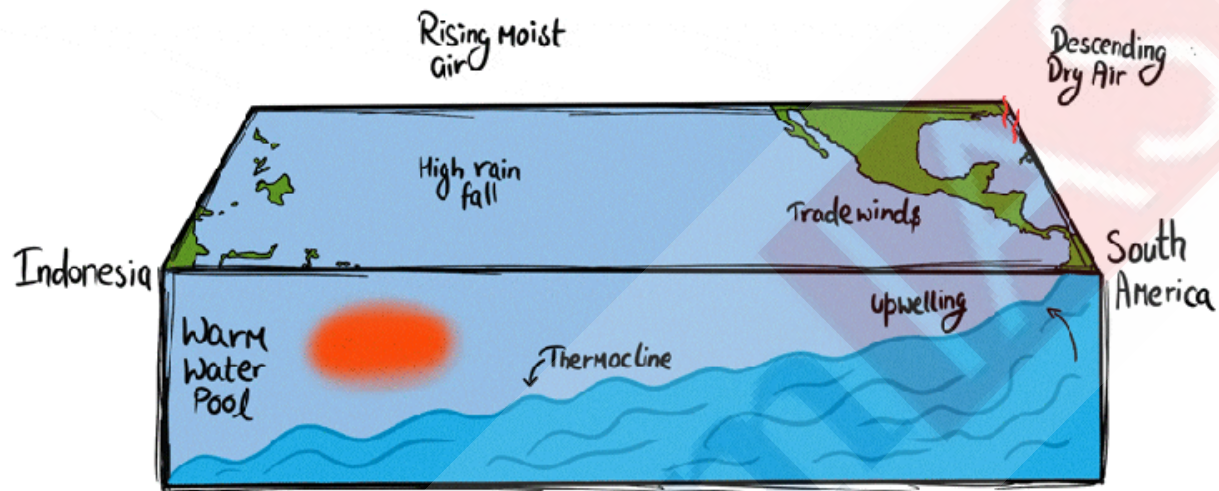
What Is El Nino?

El Niño is a climate pattern that describes the unusual warming of surface waters in the eastern tropical Pacific Ocean. El Niño is the “warm phase” of a larger phenomenon called the El Niño-Southern Oscillation (ENSO). La Niña, the “cool phase” of ENSO, is a pattern that describes the unusual cooling of the region's surface waters. El Niño and La Niña are considered the ocean part of ENSO, while the Southern Oscillation is its atmospheric changes. El Niño events occur irregularly at two- to seven-year intervals.

How will the formation of El Niño occur?

INDIA
TODAY

Normal Condition



Normally, trade winds blow from east to west, pushing warm water to the west. This warm water causes the air to rise, creating clouds and rain in the west. The dry air then descends on the east side of the ocean, creating a circulation pattern.

Source: India Today

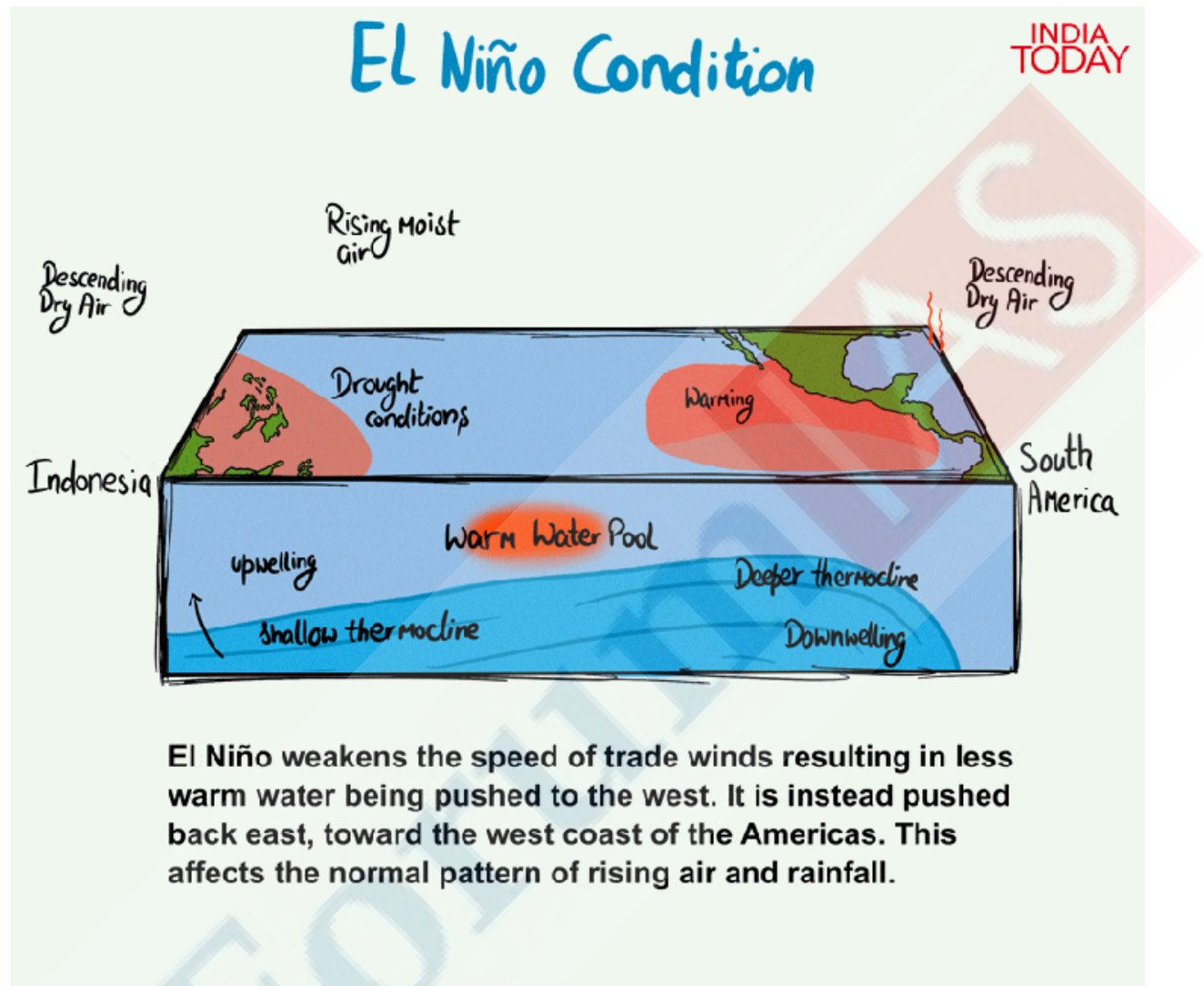
The formation of El Niño involves a series of interactions between the ocean and the atmosphere in the tropical Pacific. Here are the key steps in this complex process:

Normal conditions: Under normal conditions, the trade winds (which are part of the Earth's general circulation) blow across the tropical Pacific from east to west. These winds push warm surface water towards the western Pacific (near Asia and Australasia), piling it up there. This leaves room for cold, nutrient-rich water to well up from the depths in the eastern Pacific (near South America).

Air circulation: The accumulation of warm water in the west heats the overlying air, making it moist and buoyant. This warm, moist air rises, leading to the formation of rain clouds. The rising air creates a low-pressure system in the west, and a high-pressure system forms in the east where cooler, drier air descends. This pressure difference reinforces the trade winds, completing what is known as the Walker circulation.

Weakening trade winds: The onset of El Niño involves a weakening or reversal of the trade winds. This can happen for various reasons, such as changes in the sea surface temperature

distribution or atmospheric pressure patterns. The weakening of the trade winds is often initiated by an atmospheric phenomenon known as a westerly wind burst.



El Niño weakens the speed of trade winds resulting in less warm water being pushed to the west. It is instead pushed back east, toward the west coast of the Americas. This affects the normal pattern of rising air and rainfall.

Source: India Today

Spread of warm water: When the trade winds weaken, they can no longer push the warm water to the west as effectively. As a result, the warm water spreads from the western Pacific to the east. This process is known as a **Kelvin wave**. The spread of warm water to the east suppresses the upwelling of cold water near South America.

Feedback loop: The eastward spread of warm water further weakens the trade winds, creating a feedback loop that intensifies El Niño. This is because the warmer water warms the overlying air, which lowers the atmospheric pressure and weakens the trade winds.

Establishment of El Niño: As this feedback loop continues, the warm water in the eastern Pacific gets warmer, and the weakened trade winds get weaker. Eventually, a full-blown El Niño event is established, characterized by significantly warmer than average sea surface temperatures in the central and eastern Pacific.

What are the El Niño impacts in India?

El Niño impact on monsoon patterns and rainfall: El Niño can significantly impact the Indian monsoon, leading to fluctuations in rainfall patterns. During an El Niño year, India often experiences below-average monsoon rains, potentially causing drought conditions.

Droughts and water scarcity: Reduced monsoon rainfall can lead to water scarcity and droughts in many parts of India. These conditions can adversely affect agriculture, causing a decrease in crop yields.

Agriculture and food security: The irregular monsoon patterns during El Niño can impact agricultural yield, leading to potential food shortages and affecting farmers' livelihoods.

Forest fires: During El Niño years, drier conditions may increase the likelihood of forest fires, especially in regions prone to such disasters. Forest fires can cause extensive damage to ecosystems and human settlements, leading to loss of biodiversity and property.

Health impact: El Niño can also lead to public health issues in India. For instance, drier conditions and heat waves can increase the risk of heat-related illnesses. Additionally, changes in weather patterns can also lead to the spread of vector-borne diseases like malaria and dengue.

Economic implications: The altered weather conditions can have significant economic implications. Reductions in agricultural output can increase food prices, while the costs associated with extreme weather events can strain the country's economy.

Climate extremes: El Niño can contribute to other climate extremes in India, such as heatwaves and intense cyclones. These events can cause substantial damage to infrastructure, property, and human lives.

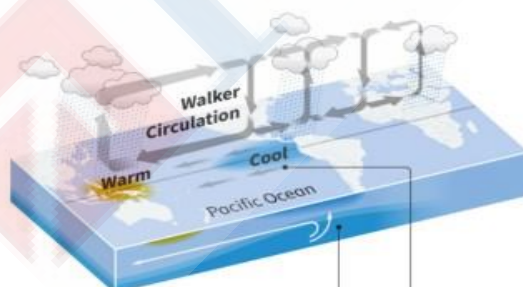
What are the El Niño impacts in regions outside India?

El Niño explained

The El Niño–Southern Oscillation (ENSO) is the Earth's most influential driver of climate variability. El Niño, the warm phase of the ENSO cycle, is marked by warmer-than-average sea surface temperatures across the central and eastern Pacific Ocean.

NEUTRAL CONDITIONS

The Walker Circulation is an east-west vertical atmospheric circulation above the Equatorial Pacific. Moist air rises over normally warm seas, causing abundant rainfall over Asia and Australia.

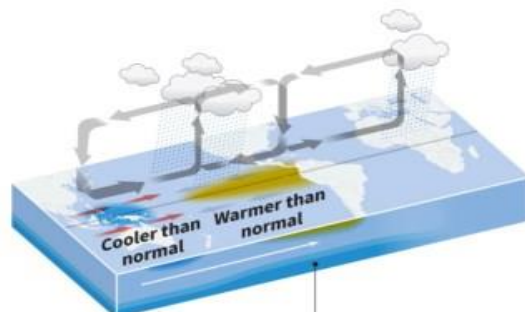


Upwelling of cold water cools the air, giving South America a cooler and drier climate

Easterly trade winds push warm surface waters westward

EL NIÑO CONDITIONS

As trade winds weaken or reverse, warm water and rain clouds from the western Pacific Ocean shift eastward towards the Americas.



Surface waters in the central and eastern Pacific Ocean become significantly warmer, reducing the upwelling of cold water

Sources: Australia Bureau of Meteorology; NOAA National Weather Service

Source: NOAA

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El Niño affects various regions across the globe in different ways. Here are some impacts observed in regions outside India:

North America: El Niño tends to suppress Atlantic hurricane activity, although there are exceptions depending on other climate factors.

South America: Coastal countries in South America like Peru and Ecuador can experience heavy rains and flooding. El Niño weakens the upwelling of cold, nutrient-rich waters along the coasts of South America, which can negatively impact marine ecosystems and fisheries.

Australia and Southeast Asia: These regions generally experience decreased rainfall during El Niño events, which can lead to droughts and significantly impact agriculture, water supply, and ecosystems. This decrease in precipitation can also heighten the risk of wildfires.

Africa: East Africa may receive more rain than usual, which could lead to flooding. Southern Africa may face drier conditions, which can lead to water shortages and impacts on agriculture.

Europe: The impacts on Europe are more uncertain and depend on how El Niño interacts with other climate patterns. However, it can potentially influence the strength and path of the jet stream, which could result in various weather anomalies in the region.

How global nations are planning to mitigate and combat El Niño impacts?

Creation of disaster risk reduction funds: Countries like Peru have created dedicated funds to tackle El Niño. Peru's Disaster Risk Reduction Fund is specifically designated to prepare for and mitigate the potential impacts of El Niño. These funds are often allocated to various activities, including improving infrastructure to withstand extreme weather events, supporting early warning systems, and assisting recovery efforts after disasters.

Improved monitoring and early warning systems: The US-based National Oceanic and Atmospheric Administration (NOAA) continually invests in technology to monitor oceanic and atmospheric conditions better, helping predict an impending El Niño event. Early warnings from organizations like NOAA can help governments worldwide to prepare well in advance and implement strategies to minimize potential impacts.

International cooperation and policy frameworks: Many countries collaborate through international agreements and conventions to manage El Niño's impacts. The Paris Climate Agreement, signed by 196 nations, underscores the importance of global action to address climate change, including phenomena like El Niño. These agreements may involve the sharing of information and resources, the development of common strategies, and cooperation on research and development efforts related to El Niño.

Climate change mitigation efforts: As the effects of climate change can potentially exacerbate the frequency and intensity of El Niño, efforts to mitigate climate change are an integral part of addressing El Niño. The UN's Intergovernmental Panel on Climate Change (IPCC) plays a crucial role in guiding global policies related to climate change, including strategies to cope with El Niño events.

Adapting agriculture and infrastructure: In countries like India, which are heavily impacted by El Niño, there are ongoing efforts to adapt agricultural practices to be more resilient to changes in rainfall and temperature. This includes implementing irrigation facilities, diversifying crop types, and promoting weather-based crop insurance.

What should be done?

Promoting climate resilient infrastructure: Infrastructure development needs to factor in climate resilience, meaning that buildings, roads, and other infrastructure should be constructed to withstand extreme weather events like those brought on by El Niño.

Strengthening international collaboration: Countries should strengthen international cooperation to share knowledge, technology, and resources to mitigate the impacts of El Niño. Climate change has no borders, and global collaboration is crucial.

Climate change mitigation: Efforts should be heightened to reduce greenhouse gas emissions, as global warming can exacerbate the effects of El Niño. This includes promoting clean energy, reducing deforestation, and implementing sustainable practices in industries.

Adapting agricultural practices: In agriculture-based economies, there should be widespread education on the effects of El Niño on weather patterns to help farmers adapt their practices. This can include crop diversification, implementing irrigation facilities, and promoting weather-based crop insurance.

Building disaster management capacity: Countries should work on building their capacity to manage and respond to disasters caused by El Niño. This includes establishing effective disaster response strategies, conducting regular drills, and ensuring adequate resources are allocated to disaster management.

Conserving marine ecosystems: Since El Niño severely impacts marine ecosystems, it is crucial to conserve and protect these ecosystems as much as possible. This includes preventing overfishing, reducing pollution, and protecting marine habitats like coral reefs.

Sources: [Business Standard](#), [Bloomberg](#), [Time](#), [The Weather Channel](#), [Climate.gov](#), [Live Mint](#), [NPR](#), [TOI](#), [Reuters](#), [India Today](#), [DTE](#), [Financial Express](#) and [BBC](#)

Syllabus: GS 1: Geophysical Phenomena: Important Geophysical phenomena

Data Security in India: Need and Challenges – Explained, pointwise**Introduction**

India, set to become a trillion-dollar digital economy by 2026, faces significant data security needs and challenges. With over a billion people, digitization and burgeoning internet usage, India must protect its citizens' data from vulnerabilities and breaches. However, despite a digitally-forward government and robust IT sector, the country lacks critical infrastructure, comprehensive data protection laws, and effective cybersecurity regulations. Consequently, India grapples with increased cyber threats, placing a spotlight on the urgent need for robust data security measures and the challenges in implementing them.

What is the recent allegation of a data security breach of CoWIN data?

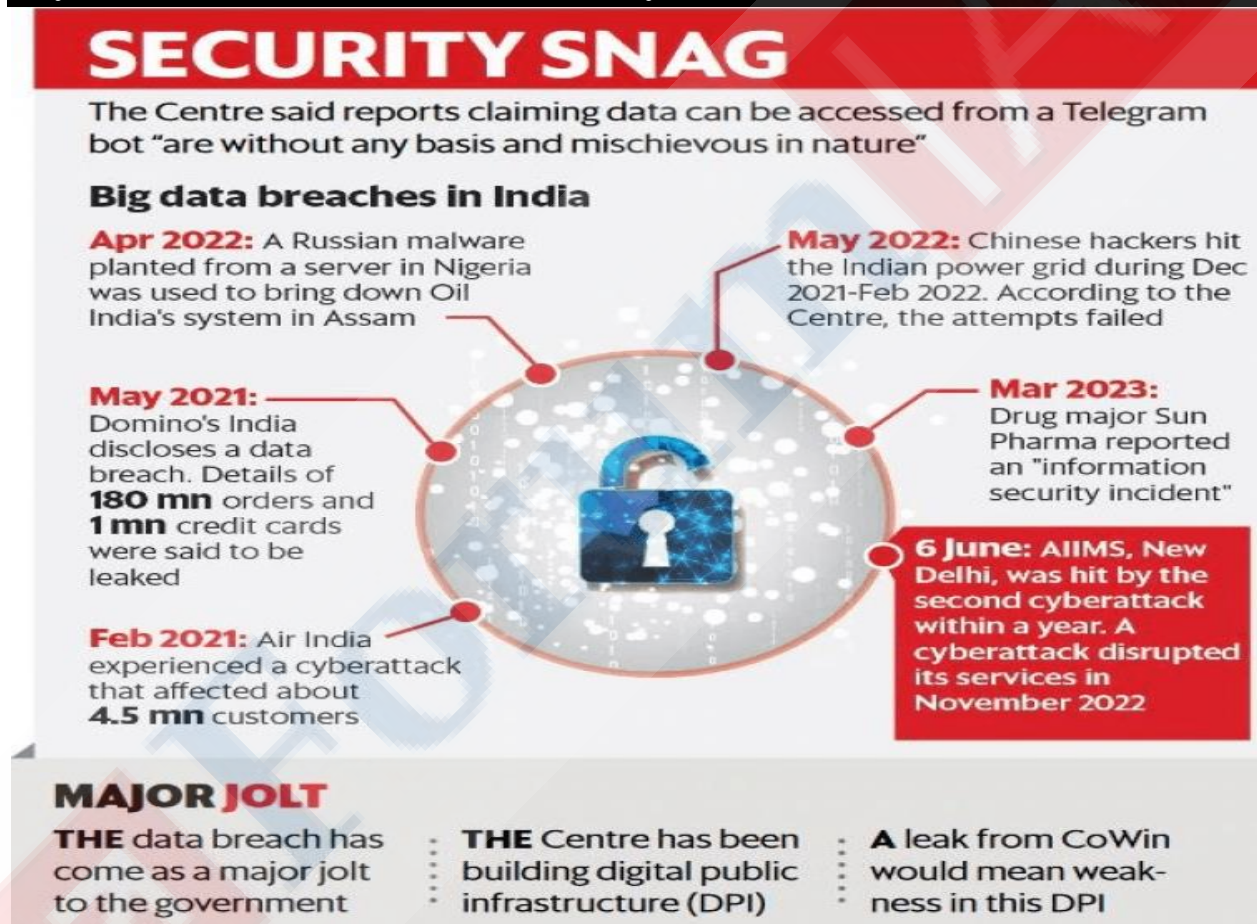
Data security breach: There have been recent allegations surrounding a data security breach of CoWIN, the centralized digital platform used in India for COVID-19 vaccination registration. The claims suggest that unauthorized access to the personal data of millions of CoWIN registered users occurred, with this data then being reportedly displayed via a Telegram bot.

Sensitive information leaked: The leaked data is said to include sensitive information such as names, contact details, Aadhaar numbers, and the vaccination status of users. The situation has raised serious concerns about privacy and data protection in India, and highlights the need for robust cybersecurity measures.

Indian government response: The Indian government, and specifically the Ministry of Health and Family Welfare, have denied any data breach. They insist that their security measures for CoWIN are stringent and that no data has been compromised. Despite their assurances, this incident underscores the urgent need for more comprehensive data protection legislation in India.

Read more: [CoWIN vaccination data out, Centre denies breach](#)

Why does India need to focus on Data Security?



Source: Live Mint

Rapid digitization: India's rapid digital transformation, especially in government services and the financial sector, necessitates a stronger focus on data security. India's digital public infrastructure, known as India Stack, handles vast amounts of personal data that could be targeted by cybercriminals.

Large-scale data breaches: Over 80 million Indian users were reportedly affected by data breaches in 2021. These breaches can undermine user trust in digital systems, negatively impact the transition to digital services, and cause significant financial damage.

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Increasing cybersecurity threats: India witnessed over 674,000 cybersecurity incidents in just the first half of 2022, as reported by CERT-In. This signals an escalating trend in cyber threats.

Poor ranking in “Global Cybersecurity Index”: India’s low ranking (17 out of 20) in the MIT Technology Review CyberDefense Index 2022/23 is indicative of its inadequate cybersecurity preparedness. The report cited a lack of critical infrastructure and weak cybersecurity regulation as key areas of concern.

Data protection legislation gap: Despite the Supreme Court’s ruling in 2017 that privacy is a fundamental right, comprehensive data protection legislation is still missing in India. This leaves the digital rights and privacy of users exposed.

Global tech presence: Most Indian citizens use foreign-owned social networking sites and mobile devices dominated by foreign manufacturers. This, coupled with the push towards data localization, adds layers of complexity to India’s data security landscape.

National security concerns: Governments need access to personal data for national security reasons, but without appropriate data security, this can lead to misuse or compromise of sensitive information.

How is Data Security ensured in India?



Source: DSCI

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Digital public infrastructure: India has established a digital public infrastructure (DPI), known as India Stack. This DPI ensures secure and privacy-respecting digital access to public and private services.

Computer Emergency Response Team (CERT-In): It is the national nodal agency that deals with cybersecurity threats in India. It responds to cybersecurity incidents and strengthens India's response to cybersecurity threats.

Regulatory measures: Even though comprehensive data protection legislation is still pending, India relies on regulations within the Information Technology (IT) Act of 2000 and sector-specific regulations for data privacy and protection.

National cybersecurity policy: India has a national cybersecurity policy that provides a framework for securing cyberspace in the country. It aims to create a cyber-secure environment that allows the robust growth of the IT and digital sectors.

Public-private partnerships: India works with private sector companies to enhance cybersecurity capabilities. The government has established institutions to ensure the continuity of India Stack's operations, acting as a catalyst in developing India's cybersecurity ecosystem.

Data localisation: Some drafts of data protection bills have proposed stringent data localisation provisions, requiring data fiduciaries to store a copy of personal data collected in India. This could help enhance control over data and its security.

Read more: [Data Protection Framework in India – Explained, pointwise](#)

How global nations are ensuring Data Security?

Data protection regulations: Many nations have established comprehensive data protection laws. For example, the European Union implemented the General Data Protection Regulation (GDPR), which offers stringent guidelines for the collection, storage, and use of personal data. In the United States, individual states like California have rolled out their own privacy laws such as the California Consumer Privacy Act (CCPA).

National cybersecurity strategies: Countries like the United States, the United Kingdom, Australia, and Canada have outlined national cybersecurity strategies. These documents detail government approaches to managing cyber threats, protecting critical infrastructure, and ensuring the security of digital services.

Establishing cybersecurity agencies: Specific agencies handle cybersecurity in various countries. For example, the United States has the Cybersecurity and Infrastructure Security Agency (CISA), while the United Kingdom operates the National Cyber Security Centre (NCSC).

International cooperation: The European Union, through its cybersecurity agency ENISA, promotes cooperation between member states in the cybersecurity field. Similarly, the "Five Eyes" alliance – comprising the United States, United Kingdom, Canada, Australia, and New Zealand – regularly share intelligence, including cybersecurity threats.

Incident response teams: Many nations, including India with its Computer Emergency Response Team (CERT-In), and South Korea with its Korea Internet Security Agency (KISA), have teams dedicated to handling cybersecurity incidents.

Regulation of cybersecurity products and services: Governments are also putting stricter regulations on the cybersecurity products and services used in their countries. This includes setting minimum security standards and certifying products for their security.

What are the challenges in ensuring Data Security in India?

Infrastructure and regulation deficiency: The MIT Technology Review CyberDefense Index indicates India has a significant deficit in critical infrastructure, weak cybersecurity regulation, and limited national digital economy adoption, despite having a digital-forward government and one of the world's largest IT-enabled service sectors.

Lack of national cybersecurity law and dedicated ministry: Despite the rising number of cyberattacks and the urgent calls for stronger cybersecurity measures, India currently lacks a comprehensive national cybersecurity law and a ministry dedicated to cybersecurity.

Inadequate data protection law: India's Personal Data Protection Bill of 2019 was withdrawn due to severe criticism over its potential to infringe upon personal data privacy. The country's data protection remains under the IT Act of 2000, which only provides for punishment in cases of negligent data handling. This approach is insufficient for the modern digital era, with its complexities and new types of threats.

Resource constraints and firefighting: Often, resources dedicated to cybersecurity are insufficient, leading to a constant firefighting mode, leaving little time for learning, strategizing, or improving defenses.

Reliance on foreign infrastructure: Most Indian internet users rely on foreign-owned social networking sites and hardware, creating unique national security challenges. This reliance could expose the country to additional cyber threats and data breaches.

Read more: [Draft Digital Personal Data Protection Bill, 2022: Benefits and Concerns – Explained, pointwise](#)

What should be done to ensure Data Security in India?

Establish strong legal frameworks: As in the European Union's GDPR model, India needs comprehensive legal frameworks to protect personal data and prevent breaches.

Cybersecurity Ministry and laws: Like Australia, India could establish a dedicated Cybersecurity Ministry to oversee and respond to cybersecurity threats. Similarly, robust national cybersecurity laws would strengthen India's ability to respond to cyber threats.

Invest in infrastructure: There's a need to build robust digital infrastructure similar to the Netherlands, which is a nerve center for pan-European cybersecurity.

Upskill and cross-skill: To meet evolving threats, India needs to invest in skills development in emerging tech cybersecurity domains. Experts could be trained in adaptive security, cloud security posture management (CSPM), Zero Trust Architecture (ZTA), and quantum cryptography, among other areas.

Public-private partnerships: In line with global best practices, fostering partnerships between government, industry, and academia can help to develop innovative solutions to cybersecurity challenges.

Adopt zero trust models: As recommended by global cybersecurity experts, adopting a Zero Trust Architecture (ZTA) approach, which assumes that no users or devices are trustworthy by default, regardless of their location or network, can help bolster security.

Awareness and training: There should be continuous efforts to increase awareness and training among internet users about data privacy and the steps they can take to protect their own data.

Regular cybersecurity audits: Like many developed nations, India should implement regular and rigorous cybersecurity audits for both public and private entities to ensure that they're adhering to the best practices in data security.

Sources: Indian Express ([Article 1](#), [Article 2](#) and [Article 3](#)), Times of India ([Article 1](#), [Article 2](#) and [Article 3](#)), [Business Standard](#), [Livemint](#), [The Hindu](#), [East Asia Forum](#), [Economic Times](#) and [Business Today](#))

Syllabus: GS 3: Security Issues: basics of cyber security.

Transgenic Crops in India: Need and Challenges – Explained, pointwise

Introduction

Transgenic crops are subject of significant debate in India. Despite their potential to combat agricultural challenges, they raise concerns regarding their impact on the environment and human health.

Recently, three Indian states – Gujarat, Maharashtra, and Telangana – have delayed testing a new transgenic cotton seed, approved by the Centre's Genetic Engineering Appraisal Committee (GEAC). This situation highlights the ongoing challenges and complexities surrounding the acceptance and implementation of transgenic crops in India.

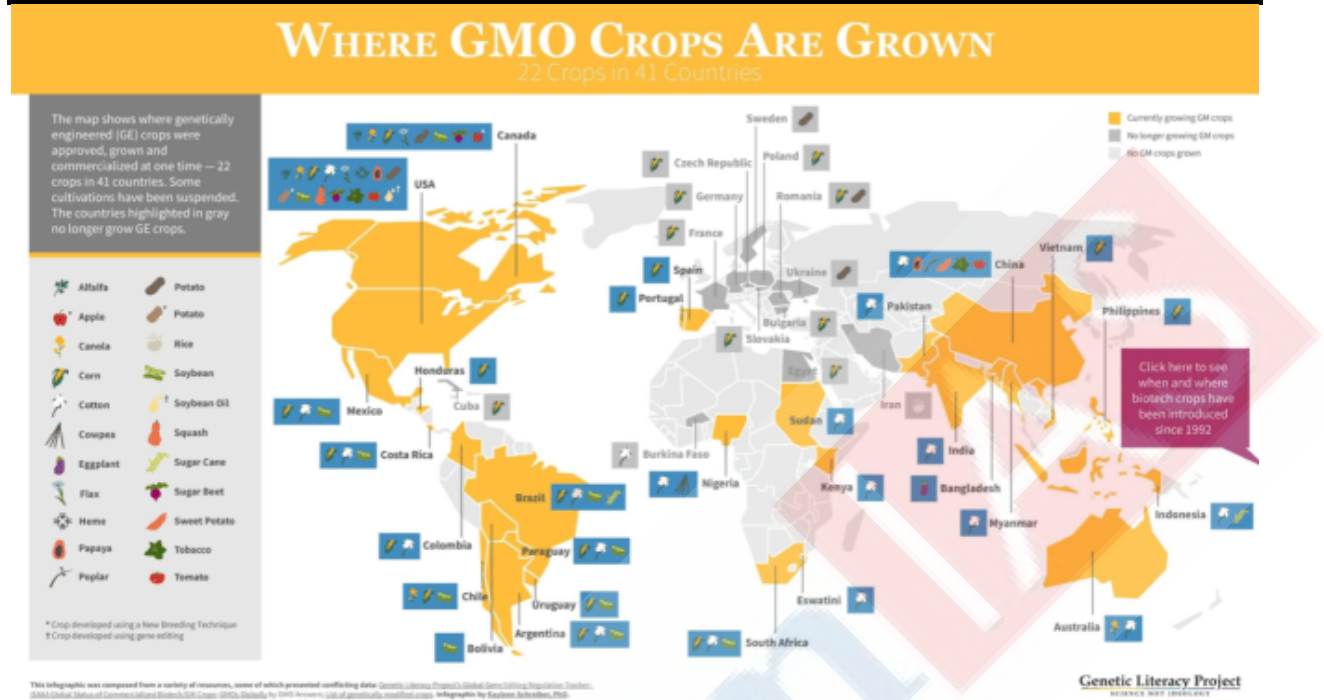
What are transgenic crops?

Transgenic crops, also known as genetically modified organisms (GMOs), are plants that have had their DNA altered using genetic engineering techniques. This process involves inserting one or more genes from a different species into the plant's genome to confer certain advantageous traits that aren't naturally present in the species.

An example of a transgenic crop is Bt cotton, which is widely grown in several countries, including India.

Transgenic crops like these are developed to improve crop yield, enhance nutritional value, reduce the use of chemical pesticides, and increase resistance to environmental stressors like drought or frost. However, the use of GMOs also raises concerns related to potential health risks, environmental impact, and ethical considerations.

About the transgenic crops permitted in India and in other countries



Source: Genetic literacy project

Transgenic crops in India

Bt cotton: In India, the major transgenic crop that has been commercialized is Bt cotton. Bt cotton is genetically modified cotton that expresses a toxin derived from the bacterium *Bacillus thuringiensis*, which provides resistance against destructive pests such as the bollworm.

GM mustard: In addition, India is also considering the commercial release of genetically modified mustard known as Dhara Mustard Hybrid (DMH -11). This GM mustard has genes from a soil bacterium that enhance hybridization, potentially leading to a yield increase of 25-30%. As of now, this crop has received approval from the GEAC but is yet to receive final clearance from the Ministry of Environment.

Other transgenic crops which are under developmental phases in India

GE banana: The National Agri-Food Biotechnology Institute (NABI) in Mohali is developing fungus-resistant varieties and exploring the fortification of bananas with iron. They are also working on increasing the amount of provitamin A in the fruit.

GE potato: The Central Potato Research Institute (CPRI) in Shimla has received permission to conduct research on the GE potato hybrid KJ66, derived from the wild Mexican potato, aimed at combating the late blight pathogen *Phytophthora infestans*.

GE maize: Rallis India Limited has received conditional approval from GEAC to conduct trials on GE maize, aimed at improving its resistance to the moth *Spodoptera frugiperda* and tolerance to the herbicide glyphosate.

GE rubber: The Rubber Research Institute in Kottayam has been granted permission for trials of two GE rubber lines expressing an 'osmotin' gene, which is expected to confer resilience to the plants under a range of adverse conditions.

Transgenic crops in other countries

Soybeans: In the United States, one of the first and most widespread transgenic crops is the Roundup Ready soybean. These soybeans are engineered to be resistant to glyphosate, the active ingredient in the herbicide Roundup.

Bt maize: Another common transgenic crop is Bt maize (or corn), which like Bt cotton, contains a gene from the *Bacillus thuringiensis* bacterium. This allows the maize to produce a protein that is toxic to certain types of pests, notably the European corn borer.

Golden rice: In some parts of Asia, a genetically modified version of rice known as Golden Rice has been developed. This rice is modified to produce beta-carotene, a precursor of vitamin A, in the edible parts of the rice plant. This is intended to combat vitamin A deficiency, a significant public health problem in many developing countries.

Must read: [GM Crops in India: Issues and challenges – Explained, pointwise](#)

How India is regulating transgenic crops?

Mandate of Ministries/Departments	
Ministry of Environment, Forest and Climate Change	<ul style="list-style-type: none"> Primarily responsible for conservation and protection of environment, ensuring environmental and human health safety before release of GMOs / LMOs. Nodal agency for implementing Rules, 1989 and the Cartagena Protocol on Biosafety
Department of Biotechnology (Ministry of Science & Technology)	<ul style="list-style-type: none"> Nodal department for promoting biotechnology programs Provides scientific support in implementation of biosafety regulations Provide services in areas of research, infrastructure, generation of human resource
Ministry of Agriculture	<ul style="list-style-type: none"> Policies aimed at agriculture growth. Indian Council of Agricultural Research (ICAR) responsible for monitoring agronomic benefits of GM technology. Monitoring post-release performance of GM crops.
Ministry of Health and Family Welfare	<ul style="list-style-type: none"> Policies aimed at protecting and monitoring human health. Food Safety and Standards Authority of India responsible for regulating genetically engineered foods.
Ministry of Commerce and Industries	<ul style="list-style-type: none"> Enhance trade with other countries through export/import policies. Nodal agency for implementing DGFT notification on GMOs
Central Board of Excise and Customs, Department of Revenue, Ministry of Finance	<ul style="list-style-type: none"> Enforcement of regulation pertaining to transboundary movement of GMOs/LMOs at point of entry

Source: The Hindu

India has a well-established regulatory framework in place to control and supervise the introduction and cultivation of GM crops. This is governed by various rules, regulations, and guidelines set by different ministries and departments.

The Genetic Engineering Appraisal Committee (GEAC): The committee reviews proposals related to the release of GM organisms and products into the environment, including experimental field trials.

Environment Protection Act: The GEAC or people authorised by it have the power to take punitive actions under the Environment Protection Act.

Role of the [Indian Council of Agriculture Research \(ICAR\)](#): The ICAR plays a crucial role in supervising the development of new GM varieties and hybrids. For example, the recent approval for GM mustard allows for the environmental release of two genetically engineered mustard varieties under the supervision of the ICAR.

Assessment of Risks: The regulatory framework also requires the evaluation of potential risks to human health, animal health, and biodiversity. This involves rigorous testing under laboratory and field conditions to ensure the safety and efficacy of GM crops.

Public Consultation: In some cases, public consultation is also part of the process before a final decision is made about the commercialization of a GM crop. This allows stakeholders, including the public, to voice their concerns and opinions.

Read more: [Genetic Engineering Appraisal Committee approves commercial cultivation of genetically modified mustard yet again](#)

What are the arguments supporting the introduction of transgenic crops in India?

Addressing food security: One of the main arguments supporting the introduction of transgenic crops in India is the potential to enhance food security. With India's population continually growing, transgenic crops offer a promising solution to increase agricultural yield and meet the escalating food demand.

Improved crop characteristics: Transgenic crops can be engineered to have desired traits such as drought resistance, pest resistance, and improved nutritional content. These modifications can lead to healthier, more resilient crops that are better suited to varying climatic conditions and can contribute to higher yields.

Economic benefits for farmers: Transgenic crops can provide economic advantages to farmers. The use of crops genetically engineered to resist pests, for instance, can reduce the need for expensive pesticides. The GEAC's recent approval of GM mustard is a prime example of this, with the potential to boost yield and subsequently increase farmers' income.

Potential environmental benefits: By reducing the need for chemical pesticides and herbicides, transgenic crops may also help decrease environmental pollution. Furthermore, certain GM crops may require less water, contributing to more sustainable water use.

Enhanced crop diversity: Transgenic technology can facilitate the development of new crop varieties, enhancing agricultural biodiversity. This could offer farmers a greater choice of crops to cultivate, potentially leading to more diverse farming systems.

What are the arguments against the introduction of transgenic crops in India?

Health concerns: Some groups argue that the consumption of genetically modified crops could potentially lead to health issues. There are concerns about allergenicity, antibiotic resistance, and the overall safety of consuming foods derived from GMOs.

Impact on biodiversity: Critics also argue that the introduction of transgenic crops could negatively impact biodiversity. There are concerns that the proliferation of GM crops could lead to the genetic contamination of wild relatives of the modified crops. The increased use of herbicide-resistant crops could harm non-target organisms and beneficial insects.

Potential socio-economic implications: There are also socioeconomic considerations. For instance, small farmers might face difficulties if they cannot afford the often higher-priced GM seeds, potentially exacerbating economic inequalities in rural communities.

Dependence on multinational companies: Many GM seeds are patented by multinational corporations. Farmers using these seeds would be dependent on these companies for their supply, potentially leading to monopolistic practices and loss of control over their own agricultural practices.

Ethical and cultural concerns: For some, the genetic modification of crops raises ethical questions about human intervention in nature. These can be especially potent in countries like India with rich cultural and religious traditions tied to natural processes.

What should be done?

Enhanced research and development: To address concerns related to transgenic crops, further research and development should be undertaken. This should focus on comprehensive risk assessment, long-term impact studies, and the development of techniques to prevent cross-contamination.

Rigorous regulatory framework: The regulatory framework for the approval and monitoring of transgenic crops in India needs to be rigorous. This can help ensure that only those GM crops that are safe for human health and the environment are permitted.

Capacity building in biotechnology: India needs to enhance its capacity in the field of biotechnology. This involves training scientists in advanced techniques, and creating world-class laboratories that can undertake cutting-edge research in this field.

Public awareness and engagement: Transparent, evidence-based information on GM crops should be shared with the public to address concerns and misconceptions. This could involve engaging with communities through public consultations before the introduction of GM crops.

Protecting farmers' interests: Policies should be in place to protect farmers from potential exploitation by multinational companies selling GM seeds. This includes ensuring farmers have access to a variety of seeds, including non-GM options.

Monitoring environmental impact: After the introduction, transgenic crops should be continuously monitored to assess their impact on biodiversity and ecosystems. In particular, the potential for gene flow to non-target species should be rigorously evaluated.

International collaboration: India can benefit from international collaboration in this field, learning from the experiences of other countries that have successfully adopted transgenic crops, and working together to address shared challenges.

Sources: Indian Express ([Article 1](#), [Article 2](#) and [Article 3](#)), The Hindu ([Article 1](#), [Article 2](#) and [Article 3](#)), [Counter view](#), [The Print](#), [India Today](#), [Weather](#), [DTE](#) and [The Hindu Businessline](#)

Syllabus: GS 3: Science and Technology: Awareness in the field of biotechnology.

India – China border dispute: Three years after Galwan clash– Explained, pointwise**Introduction**

Three years after the infamous Galwan clash, the India-China border dispute still remains a significant geopolitical issue. The deadly encounter in the Galwan Valley marked a turning point in Sino-Indian relations, leading to heightened tensions and military buildup along the Line of Actual Control (LAC). While some progress has been made through rounds of diplomatic and military talks, many friction points persist. This ongoing dispute continues to strain the bilateral ties, making its resolution critical for regional peace and stability.

About the Galwan Clash

The Galwan Valley clash, occurring on the night of June 14-15, 2020, marked a pivotal moment in India-China relations. For the first time in 45 years, soldiers from the Indian Army and China's People's Liberation Army engaged in a fatal altercation at the Line of Actual Control (LAC), resulting in significant casualties on both sides. The conflict, sparked by China's attempts to alter the LAC status quo, ignited deep tensions and mutual distrust.

Three years later, despite diplomatic, political, and military discussions, these issues remain unresolved. Both nations continue to enhance their military presence and infrastructure along the LAC, amidst fluctuating perspectives on the situation's gravity. The disengagement in key areas remains incomplete, and India insists on returning to the April 2020 status quo. This complex dispute requires continual vigilance, ideally leading to a peaceful, mutually beneficial resolution.

Read more: [Playing Chinese Checker: PLA's big aim at LAC is to get India to accept China's hegemony. We must see this & prepare](#)

What is the status of the present conflict between India and China?

Ongoing standoff and military preparedness: The conflict between India and China following the Galwan Valley clash in 2020 remains unresolved, with both sides maintaining a significant military presence along the disputed Line of Actual Control (LAC). India has significantly enhanced its military infrastructure, surveillance capabilities, and combat readiness, closing the "infrastructure differential" with China.

Diplomatic and military talks: 18 rounds of high-level military talks have been conducted so far, focusing on disengagement and restoring peace along the LAC in eastern Ladakh. Some success has been achieved, with disengagement in several areas following extensive diplomatic and military discussions.

Media row: The ongoing dispute between India and China concerning journalists, tensions have escalated as China has reportedly ordered the last Indian journalist remaining in the country to leave. The representative from the Press Trust of India (PTI) has been instructed to leave China, effectively erasing any Indian media presence from the country.

Difference of opinion in LAC: There is a significant difference in how the two sides perceive and project the situation at the LAC. While China portrays the situation as gradually shifting to a normalized management phase, India views the border situation as "very fragile" and "quite dangerous." Furthermore, India demands the restoration of the status quo of April 2020 at Ladakh, which China has consistently refused.

Future relations: India maintains that the normalization of bilateral ties with China is contingent upon peace in the border areas. China, on the other hand, seeks to put the border issue aside to focus on building a broader relationship. This fundamental disagreement continues to hamper the resolution of the conflict.

Must read: [Disengagement agreement at Pangong Tso Lake – Explained](#)

What is the status of boundary talks between India and China?

What happened at Galwan Valley?

Last year, Eastern Ladakh witnessed the fiercest Sino-Indian border clash since the 1962 war, leading to death of 20 Indian Army soldiers and a sizeable number (reports say 45) of Chinese troops. The clash happened after weeks of face-off between troops at several parts of Eastern Ladakh.

What led to Indian Army-PLA face-off in the first place?

- India's decision to strengthen border infrastructure was not welcomed
- The DSDBO road including a bridge over Shyok river were major irritants
- Chinese objected to India building 4-5 small footbridges for the troops to cross the river near PP14.
- Skirmishes on the northern banks of Pangong Tso preceding the clash.
- India's decision to withdraw the statehood for Jammu and Kashmir



Indian and Chinese troops and tanks disengaging from the banks of Pangong Tso in Eastern Ladakh.

PHOTO: NORTHERN COMMAND, INDIAN ARMY

Why Galwan Valley is important?

Galwan Valley is strategically located between Ladakh in the west and Aksai Chin in the east. At its western end are the Shyok river and the Darbuk-Shyok-Daulet Beg Oldie (DSDBO) road. Its eastern mouth lies not far from China's vital Xinjiang-Tibet road or G219 highway.

Where does the Line of Actual Control lie?

The LAC lies east of the confluence of the Galwan and Shyok rivers in the valley, up to which both India and China have been patrolling in recent years. After the June 15 clash, China has claimed that the entire valley lies on its side of the LAC.



Territorial claims and LAC claims

- They are not the same.
- The distinction between territorial claims and LAC claims is sometimes blurred.
- The LAC refers to territory under the effective control of each side, not to their entire territorial claim.
- For instance, India's territorial claims extend 38,000 sq km on the other side of the LAC across all of Aksai Chin, but the LAC India observes runs through the valley.

The Concerns

- By staking a claim to the entire Galwan Valley and up to the confluence of the rivers, China is, in India's view, unilaterally altering the LAC.
- This goes against the 1993 Border Peace and Tranquility Agreement under which India and China agreed to strictly respect and observe the LAC between the two sides.

Undemarcated borders

- The alignment of the LAC has never been agreed upon.
- The current understanding of the LAC reflects the territories that are, at present, under the control of each side, pending a resolution of the boundary dispute.
- For the most part, in the western sector, the LAC broadly corresponds with the border as China sees it.
- However, India and China do not agree on the alignment of the LAC everywhere.

The length of the Line of Actual Control

- From Ladakh to Arunachal Pradesh, the LAC has a length of 3,488 km
- 1,597 km in the western sector
- 545 km in the middle sector
- 1,346 km in the eastern sector.
- The length of the LAC in Ladakh is 826 km

Source: Deccan Herald

High-level military talks: These talks aim to encourage disengagement in the friction points and to restore peace along the LAC. Though some progress has been made through these discussions, a mutually acceptable solution to all the remaining points of contention is yet to be agreed upon.

Achievements of the talks: As a result of the ongoing diplomatic, political, and military conversations, troops have successfully disengaged from multiple areas including Galwan Valley, the north and south banks of [Pangong Tso](#), and the Gogra Post-Hot Springs area. This indicates that despite the friction, both sides are willing to engage in dialogue to resolve conflicts.

Key issues remain unresolved: China has been resistant to discussing the strategic Depsang Plains and Demchok areas, stating that these are "legacy issues" that predate the April 2020 clashes and hence do not come under the purview of the current talks. This resistance has created a deadlock in the negotiations, further complicating the already strained relationship between the two nations.

Diverging perspectives and expectations: There is a clear divergence in how both countries view the progress and the outcome of these talks. China seeks to normalize the situation, urging India to separate the border issue from the broader bilateral relationship. India, on the other hand, insists that peace and tranquillity in the border regions are a prerequisite for any normalization of bilateral relations. This fundamental difference in perspective continues to pose challenges to the success of the talks.

Read more: [India China rebooting ties Post – Doklam](#)

What are the challenges in resolving the India – China border dispute?



Source: Tribune

Historical Disagreements and ‘Legacy Issues’: The India-China border dispute has a long and complex history that dates back to the 1962 border war. The presence of ‘legacy issues’, such as the disputes over Depsang Plains and Demchok, which China refuses to discuss under current talks, adds an additional layer of complexity.

Unilateral actions: China’s attempts to unilaterally alter the status quo along the LAC, including military incursions into Indian territory, have significantly escalated tensions and complicated resolution efforts.

Strategic concerns and nationalistic sentiments: The strategic importance of the disputed territory, coupled with nationalistic sentiments on both sides, makes it more difficult for either government to compromise or concede territory.

Military build-up and infrastructure development: Both sides have been strengthening their military presence and infrastructure along the LAC, signalling preparedness for potential conflict and reducing the space for a peaceful resolution.

Lack of trust and mutual suspicion: The deadly clashes of 2020 have deeply impacted the level of trust between the two nations, leading to heightened suspicion and uncertainty. This lack of trust creates a volatile environment that is not conducive to long-term conflict resolution.

Imbalance in buffer zones: The establishment of buffer zones during the disengagement process has resulted in India losing more territory than China. This imbalance creates further tension and makes conflict resolution more difficult.

Media and diplomatic relations: Relations outside the border conflict, like the tit-for-tat war over journalists, further strain the relationship between the two nations, making it harder to find common ground and cooperate in resolving the border dispute.

Read more: [Lessons and Challenges for India after a Year of Galwan Clash](#)

What should be done?

Continued dialogue and negotiations: Both nations must continue high-level talks, keeping dialogue channels open to facilitate negotiation and mutual understanding. Military, political, and diplomatic conversations should be maintained to reduce tension along the LAC.

Establish trust: Building trust is crucial in resolving any conflict. To this end, both countries should actively avoid actions that could exacerbate the situation, such as unilateral attempts to alter the status quo, and work towards fostering an environment of mutual respect and understanding.

Resolve legacy issues: The legacy issues, including unresolved border claims, should be addressed in the negotiations, without discarding them as matters predating the current conflict. This would ensure a comprehensive solution to the border dispute.

Balanced disengagement: Future disengagements should aim for a balance, ensuring neither side disproportionately loses territory in the creation of buffer zones. This will help to maintain the equilibrium and contribute to a long-term peaceful resolution.

Improvement of broader relations: While addressing the border dispute is essential, it would be beneficial to also focus on improving the broader bilateral relations. For instance, both countries could work towards resolving issues such as the ongoing media dispute.

Third-party mediation: If bilateral talks do not result in a breakthrough, considering a neutral third-party mediator could be an option. However, both countries must agree to this, and it should not be perceived as an infringement on their sovereignty.

Sources: Indian Express ([Article 1](#) and [Article 2](#)), [Swarajyamag](#), [Financial Express](#), Economic Times ([Article 1](#), [Article 2](#) and [Article 3](#)), [Tribune](#), [Live Mint](#), [WION](#) and [The Diplomat](#)

Syllabus: GS 2: International Relations: India and its neighbourhood- relations.

[Kurukshetra June 2023 Summary] Water conservation through community planning – Explained, pointwise

Introduction

Water conservation is a critical global concern, emphasized by the United Nations' Sustainable Development Goal 6 (SDG 6), which promotes clean water and sanitation for all. An integral part of this goal involves managing water resources sustainably and ensuring that every drop is used efficiently.

In a populous country like India, where the pressure on water resources is immense, the need for conservation is even more urgent. In this context, community planning plays a vital role. By involving local communities in water conservation efforts, the use and management of water can be optimized to meet local needs and circumstances, while also fostering a sense of responsibility for this crucial resource.

Read more: [Equitable Water Resources Management – Explained, pointwise](#)

What are the needs for water conservation in India?

Growing population and limited resources: India houses 18% of the world's population with only 2.4% of the world's land. This increasing population and limited resources necessitate effective water conservation.

Increased freshwater demand: Due to industrialization, urbanization, and population growth, the demand for freshwater has escalated. The country needs to conserve water to meet this rising demand.

Rapid depletion of groundwater levels: Groundwater fulfils about 80% of rural and 50% of urban India's water needs. Farmers extensively extract groundwater for irrigation, resulting in declining groundwater levels. Thus, judicious extraction and water conservation are required to balance the situation.

Reliance on rain-fed irrigation: India receives about 1,200 mm of rainfall each year, yet only 6% is effectively captured and stored. This heavy reliance on rain-fed irrigation results in water stress during dry periods and emphasizes the need for effective water conservation and storage techniques.

Mitigating effects of climate change: Erratic rainfall patterns, droughts, or drought-like conditions due to climate change increases the need for effective water management and conservation.

Sustainable agricultural practices: Around 84% of total incremental irrigation comes from groundwater. To ensure the sustainability of agricultural practices, it is crucial to conserve water resources.

Enhanced community involvement: Water conservation initiatives would be more successful if the community is involved in various stages of implementation. Community-based management of water resources is therefore essential.

Must read: [Groundwater Use and Governance in India – Explained, pointwise](#)

How can India use community participation to address the rapid depletion of groundwater?

Enhancing awareness and education: Through community awareness programs, local residents can learn about the importance of groundwater, the dangers of over-extraction, and ways to conserve it. Education can empower communities to take proactive steps towards conservation.

Promoting community-led initiatives: Communities can be encouraged to take the lead in local water conservation initiatives, such as rainwater harvesting, maintaining local water bodies, and employing sustainable irrigation practices. These initiatives can significantly reduce the over-reliance on groundwater.

Establishing water user associations: Communities can form Water User Associations to manage local water resources. These associations can develop local rules for water usage, conduct regular checks on water levels, and ensure the equitable distribution of water.

Empowering local self-governance: The Panchayati Raj Institutions (PRIs) can play a pivotal role in planning, implementing, and monitoring water conservation measures at the local level. They can take up the responsibility of identifying water conservation projects and strategizing the extraction of water for identified purposes.

Involving women in water management: Women, often the primary users of water in households, can play a crucial role in water conservation. Encouraging women's participation in decision-making about water management can lead to more sustainable use of groundwater.

Building capacity for sustainable water use: Communities can be trained in sustainable water use, the maintenance of water infrastructure, and the monitoring of local water resources. This capacity building can ensure long-term, sustainable management of groundwater.

Promoting collaboration and convergence: Communities should be encouraged to collaborate with district or block-level authorities for the planning, execution, and monitoring of water conservation projects. This ensures the convergence of efforts and resources for maximum impact.

Read more: [\[Kurukshetra April 2023 Summary\] Groundwater Water Management through Panchayats – Explained, pointwise](#)

What initiatives have the several Union and state governments taken for water conservation?

A few PMKSY activities needing Consistent Community Participation

SN	PMKSY Components	Programme Activity
3	Per drop more crop	Programme management, preparation of State/District Irrigation Plan, approval of annual action plan, Monitoring, etc.; Promote efficient water conveyance and precision water application devices like drips, sprinklers, pivots, rain-guns in the farm; Construct micro irrigation structures; Secondary storage structures at tail end of canal system to store water when available in abundance (rainy season) or from perennial sources like streams for use during dry periods through effective on-farm water management.
4	MGNREGA	Create water harvesting structures on individual lands of vulnerable sections, creation of new irrigation sources, upgradation/desilting of traditional water bodies, water conservation works, etc.; De-siltation of canal & distribution system, deepening and desiltation of existing water bodies, strengthening of bunds/embankments, etc.
5	National Aquifer Mapping and Management (NAQUIM) Programme	This initiative under the Ministry of Jal Shakti has taken various steps for water conservation involving local communities, NGOs, and other stakeholders.
6	Rained Area Development Programme (RADP)	The RADP emphasizes sustainable and integrated farming systems and includes measures for soil and water conservation.
7	National Perspective Plan	This is a long-term plan for water conservation that includes both surface and groundwater management.

Source: Kurukshetra

Water conservation programmes implemented by selected states

SN	State	Name of initiative	Programme Activity
1	Andhra Pradesh	Neeru – Chettu	Rejuvenating and revitalising natural resources. De-silting of tanks and feeder channels, etc., are taken up, additional water storage is created. Aimed at collective participation and spread of awareness to make the State 'drought proof' through better Water Conservation.
2	Bihar	Kal Jeevan Hariyali	Identification, restoration, and renovation of all public water storage structures - ponds / canal / pines, etc. Construction of check dams and other water harvesting structures in small rivers / drains and water storage areas of hilly areas. The objective is to encourage farmers to participate in water conservation initiatives of the government and to get sensitised on the use of alternative crops, drip irrigation, organic farming, and other new technologies with less dependence on irrigation.
3	Gujarat	Sujalam Sufalam Jal Sanchay abhiyan	Deepening water bodies in the state before monsoon arrives to increase storage of rainwater to be used during times of scarcity. It is a Public Private Partnership programme and government contribution is 60 per cent of the work expenditure.
4	Haryana	Jal he Jeevan Hai	Encouraging farmers to adopt crop diversification and sow crops which require less water like Maize, Arhar, etc., instead of water guzzling crops such as paddy so as to conserve water.
5	Odisha	Pani Panchayat	Ensuring voluntary activity of group of farmers engaged in the collective management (harvesting and distribution) of surface water and groundwater (wells and percolation tanks). Objective is to ensure optimum utilisation of water as well as improving agricultural production.
6	Maharashtra	Jalyukt Shivar Abhiyaan	Deepening and widening of water streams, construction of cement and earthen stop dams, works on nullahs and digging of farm ponds. Objective is to make Maharashtra drought-free by making 5,000 villages free of water scarcity each year.
7	Rajasthan	Mukhtar Mantri Jal Swawalamban Abhiyaan	Extending conservation efforts to manage rainfall, runoff, groundwater & in-situ soil moisture. Through convergence of schemes of various departments, works are executed through people's participation by motivating villagers & beneficiaries.
8	Telangana	Mission Kakatiya	Reclamation of water tanks by restoring minor irrigation sources. Aims at spreading minor irrigation in the state with community participation for sustainable water security.

Source: Kurukshetra

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What role do community planning and participation play in water conservation?**Table 3: Community Engagement in MGNREGA Watershed Development Works**

Type of Watershed Development Works	Engagement of the Community
<ul style="list-style-type: none"> ☛ Contour trenching for water conservation in plantations and grassland development. ☛ Loose boulder bunding by erecting dry stone walls across the hill slopes at pre-determined spacing for developing land for cultivation. ☛ Spring-shed development in north eastern States to revive springs and protect these against drying up during dry season. ☛ Village ponds excavation and renovation of existing ponds to increase water storage space. ☛ Bench terracing to use the hill slopes for crop production on sustainable basis. ☛ Gabion structures of stone and wire dams across drainage lines to address soil erosion issues. 	<ul style="list-style-type: none"> ☛ Intensive participatory planning exercise is adopted to prepare watershed development plans with active involvement of villagers. ☛ Identification of workable watershed boundaries [with around 500-1000 hectares of area] by referring to watershed atlas available with the States concerned. ☛ Carrying out Baseline/benchmark Surveys viz. climate, soil types, fertility, rainfall pattern, runoff volume, land-use pattern, vegetation to make the plan outcome-oriented. ☛ Active participation of community makes the programme community-driven and community managed/owned. ☛ Adoption of Participatory Rural Appraisal which combines various tools like social mapping, resource mapping, seasonal mapping, transect walk, focus group discussions enables community to express and analyse their own situation, clearly delineating location-specific water needs and priorities.

Source: Compiled by the author from Samarthyaa: Technical Training Manual (MGNREGA), Ministry of Rural Development [www.nrega.nic.in]

Source: Kurukshetra

Ensuring sustainable water management: Community involvement in planning and implementing water conservation initiatives ensures sustainable water management. For instance, community-driven rainwater harvesting projects can contribute to groundwater recharge and reduce dependency on borewells.

Promoting ownership and responsibility: When communities participate in planning, they take ownership of the conservation projects, leading to better upkeep and longevity of these initiatives. For example, local management of ponds and lakes in villages often leads to better maintenance and use of these water bodies.

Enabling customised solutions: Community planning allows for solutions that are tailored to local conditions and needs. For instance, the selection of appropriate irrigation techniques can be decided based on local climate and crop patterns.

Facilitating resource mobilisation: Community participation can facilitate the mobilisation of local resources, both human and material, for water conservation. In the Indian state of Rajasthan, for example, traditional water conservation practices were revitalised by communities, leading to improved water availability.

Increasing effectiveness of public policy: Community participation can make public policies more effective by integrating local knowledge and practices. A good example of this is the Atal Bhujal Yojana, which aims to manage groundwater with active participation from communities in water-stressed areas.

Strengthening social cohesion: Community participation in water conservation can also strengthen social ties and foster a sense of shared responsibility. This was evident in the village of Hiware Bazar in Maharashtra, where community-led watershed development projects transformed it into a 'water surplus' village.

Improving monitoring and accountability: When communities are involved in the execution and monitoring of water conservation projects, it leads to greater transparency and

accountability. For instance, social audits of water schemes can ensure that projects are executed as planned and funds are utilised appropriately.

Read more: [\[Kurukshehra June 2023 Summary\] Fostering Water Management for Food Security – Explained, pointwise](#)

What should be done?

Initiating social mobilization: Communities should begin by analyzing their specific water needs and preparing a Water Security Plan, Irrigation Plan, and Village Action Plan.

Discussing sustainability: Community meetings should deliberate on the sustainability of water schemes for both drinking and irrigation purposes. New revenue sources, such as user fees or maintenance fees, should be explored to ensure the smooth operation and conservation of water systems.

Preparing a water reserve audit and safety plan: These plans will ensure the recharge, storage, and availability of water, as well as address issues related to water quality.

Ensuring convergence with line departments: Communities should work closely with district authorities to plan and execute water conservation projects under various government schemes, ensuring increased water availability in rural areas.

Promoting timely execution and fund utilisation: Coordination with District or Block level authorities is essential for promoting the timely execution of water projects and proper utilization of funds.

Adopting technologies for monitoring: Communities should embrace digital mediums and technologies for the monitoring of water schemes.

Arranging social audits: Regular social audits of water schemes should be arranged in consultation with district line department officials.

Arranging training and capacity building programmes: Programmes should be arranged for grassroots workers on rainfall data capture, water collection, storage, and usage. Monitoring water availability, sources, and quality: Communities should be vigilant about their local water resources and organize awareness camps when necessary.

Read more: [Water Crisis in India – Explained, pointwise](#)

Source: Kurukshehra

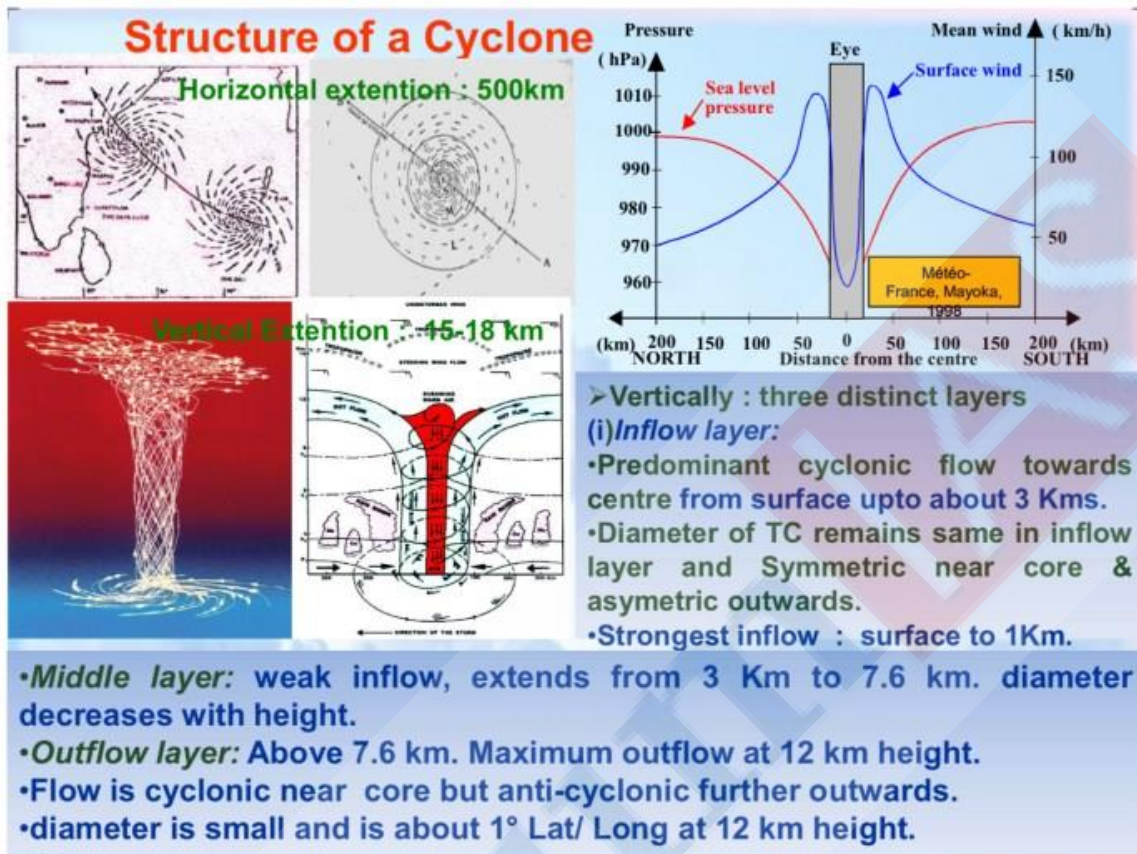
Syllabus: GS 1: Human and Economic Geography: Distribution of key natural resources across the world (including South Asia and the Indian sub-continent).

Cyclone disaster management in India: progress and challenges – Explained, pointwise

Introduction

Cyclone disaster management in India has seen significant progress in recent years, marked by improved early warning systems, enhanced preparedness measures, and strengthened response capabilities. However, challenges persist as the country continues to face the onslaught of cyclones, as exemplified by Cyclone Biparjoy. While India has made commendable strides in mitigating the impact of cyclones, there is a need to address issues such as infrastructure retrofitting, technology integration, community engagement, and coordination to further strengthen cyclone disaster management and build a more resilient nation.

About the cyclones in India



Source: IMD

India's North Indian Ocean (NIO) region, which encompasses the Bay of Bengal and the Arabian Sea. This region includes the Indian peninsular mainland's 7,500 km coastline, along with Lakshadweep and the Andaman and Nicobar Islands. Both the Arabian Sea and the Bay of Bengal are prominent cyclone forming regions that pose significant threats to the Indian subcontinent.

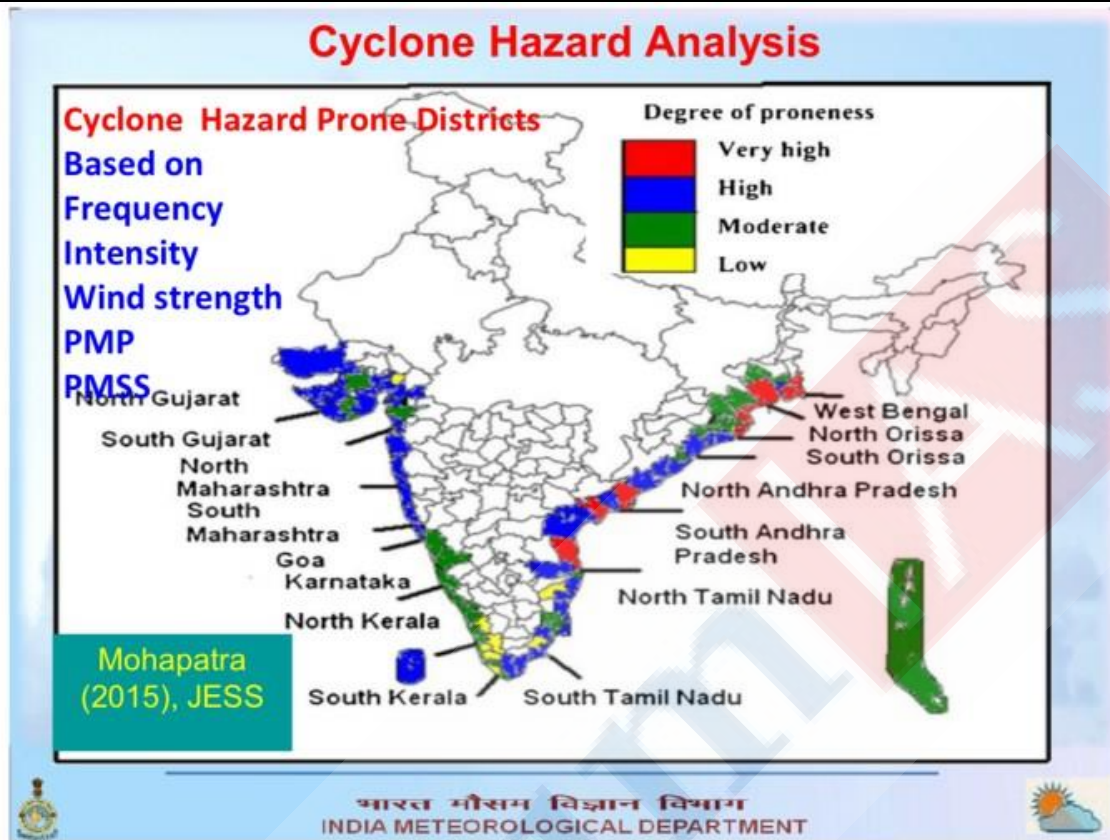
Cyclones from the Bay of Bengal: The Bay of Bengal has experienced an 8% decrease in cyclonic storms in the recent period (2001-2019), compared to the previous period (1982-2000). However, it still dominates in terms of cyclone frequency and intensity compared to the Arabian Sea. These cyclones often originate on the eastern side of the North Indian Ocean (NIO) Basin and initially move in a west-northwesterly direction.

Cyclones from the Arabian Sea: Cyclones in the Arabian Sea are less frequent but no less dangerous. However, there has been a 52% increase in the number of cyclonic storms over the Arabian Sea (2001-2019), compared to the previous period (1982-2000).

Cyclogenesis: It is the development and strengthening of cyclonic circulation in the atmosphere in the tropics.

Read more: [How Tropical cyclones are formed?](#)

What are the cyclone-prone regions in India?



Source: IMD

What are the socio-economic impacts of cyclones in India?

Cyclones in India wreak significant havoc, leading to catastrophic socio-economic impacts. These impacts are not only direct, such as property damage and loss of life, but also indirect, affecting long-term economic development and societal well-being.

Loss of life and displacement: Historically, cyclones in India have resulted in substantial loss of life. For example, the 1999 Odisha cyclone claimed over 10,000 lives. Cyclones also often lead to mass displacement, as people are forced to evacuate their homes due to the imminent danger, which leads to substantial social disruption.

Damage to infrastructure: Cyclones cause significant infrastructure damage, impacting transportation, communication, electricity, and water supply. For instance, Cyclone Tauktae in 2021 caused widespread damage to roads, bridges, and buildings in Gujarat and Maharashtra.

Impact on the economy: The economic cost of cyclones is staggering. Cyclone Fani, which hit Odisha in 2019, resulted in losses estimated at \$1.81 billion. The economic impact extends to sectors like agriculture, fisheries, and tourism, affecting the country's GDP.

Impacts on livelihoods: Cyclones also negatively impact livelihoods, particularly for fishermen and farmers. Fishing vessels can be destroyed or lost at sea, and crops can be severely damaged, leading to loss of income and food insecurity. For example, Cyclone Amphan (2020) in West Bengal disrupted the livelihoods of millions, causing an estimated \$13 billion in damage.

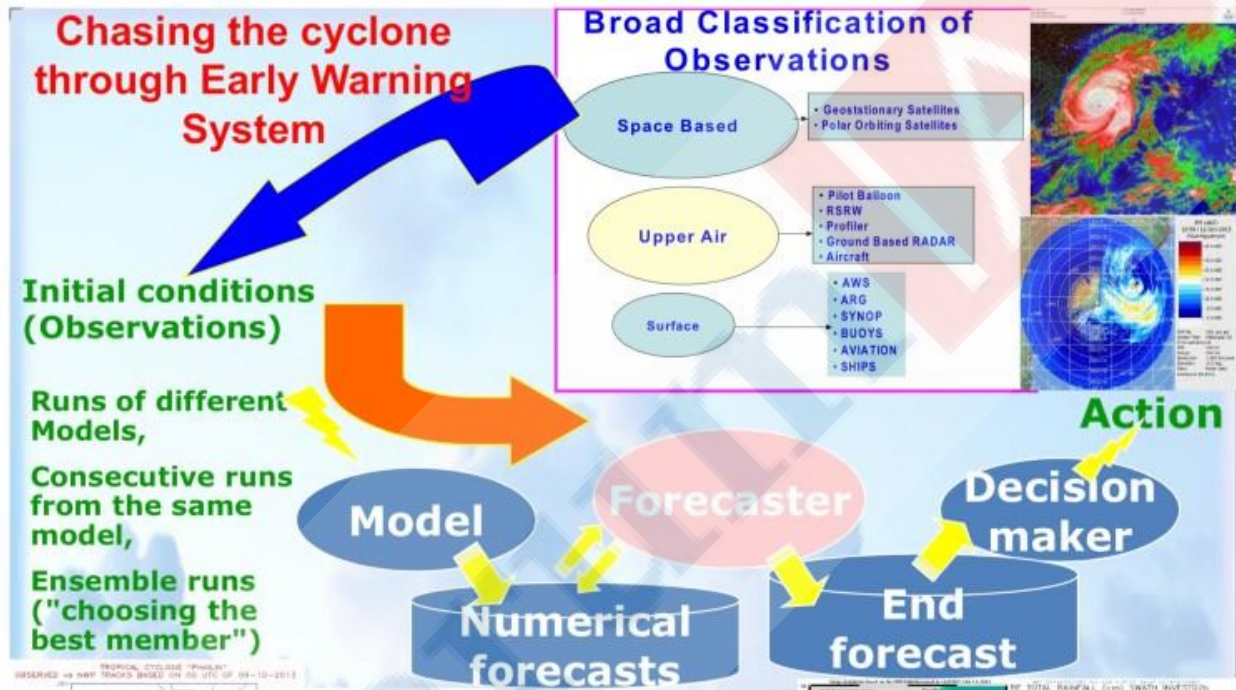
Effects on public health: Post-cyclone conditions can lead to the spread of waterborne diseases, creating a public health crisis. Limited access to clean water and sanitation facilities, coupled with the displacement of communities, can exacerbate health issues.

Impact on education: Cyclones often result in the closure of schools, impacting children's education. In many cases, schools are converted into temporary shelters for displaced families, further prolonging educational disruption.

Long-term economic development: The high cost of post-disaster recovery diverts resources from other areas of economic development. Recovering from cyclones often means that less money is available for infrastructure improvements, healthcare, and education, slowing overall economic progress.

Read more: [All about tropical cyclones](#)

What are the Cyclone disaster management mitigation and preparedness measures in India?



Source: IMD

Early warning systems: India Meteorological Department (IMD) is a critical player in the early detection of cyclones, issuing timely warnings that help evacuate people and limit damage.

National Cyclone Risk Mitigation Project (NCRMP): Supported by the World Bank, the NCRMP aims to enhance the preparedness and resilience of coastal communities. This is achieved through the construction of cyclone shelters, infrastructure development, and improved access routes for effective evacuation.

Coastal Protection Initiatives: A key mitigation measure is the strengthening of coastal regions, which includes the creation of natural barriers like mangrove plantations and artificial barriers like sea walls and embankments to reduce the impact of cyclones.

Infrastructure Retrofitting: Existing infrastructure, particularly in vulnerable coastal regions, is often retrofitted to withstand cyclonic conditions. This might include reinforcing structures or adopting cyclone-resistant construction techniques for new builds. After every cyclone Indian government initiated a retrofitting program to strengthen cyclone shelters in vulnerable areas.

Integrated Coastal Zone Management (ICZM) Project: This initiative is designed to enhance the resilience of coastal areas through sustainable environmental practices. The project includes mapping vulnerable zones, promoting conservation, and implementing sustainable livelihood strategies for local communities.

Colour-coding of cyclones By IMD: The well-known colour-coding of natural disasters seeks to alert people to the risks' potential severity in advance. Green, yellow, orange, and red are the colours that IMD uses.

Community-based disaster management: Programs are implemented to raise awareness and train communities for cyclone preparedness. In Odisha, for example, locals have been trained to effectively respond during cyclones.

Use of technology: The use of technology, such as Geographic Information System (GIS) mapping, helps identify vulnerable zones and plan evacuation routes. This technology was notably used during Cyclone Fani in 2019.

Coordinated efforts: Effective disaster management requires coordinated efforts among various agencies, such as the National Disaster Management Authority (NDMA), State Disaster Management Authorities (SDMAs), IMD, and local administrations. Due to this, India has been able to minimise the loss of life during the cyclone.

Evacuation planning: Comprehensive evacuation plans are developed for vulnerable regions. During Cyclone Amphan in 2020, these plans facilitated the evacuation of over two million people in West Bengal and Bangladesh.

Must read: [El Nino: Concept and impacts – Explained, pointwise](#)

What are the issues with Cyclone disaster management In India?

India has made considerable progress in managing cyclone disasters, especially in terms of evacuation and early warning systems. However, several challenges persist that need to be addressed for a more effective cyclone disaster management system.

Focus on management: Disaster management in India is more focused on management than prevention.

Socio-economic conditions of with coastal population: One-third of the population of India which lives in the coastal area is poor and marginalized rendering it ill-prepared and unable to cope with a disaster. On a few occasions, the warnings were not taken seriously by the local communities thereby making it more disastrous. For instance, during Ockhi cyclone disaster warnings were ignored by local bodies.

Issues with State disaster management forces: Not all the State disaster response forces are better prepared like Odisha. As they are ill-prepared to respond the onus of response always falls on the NDRF rendering golden hour response unavailable.

Overemphasis on evacuation: While evacuation is a critical aspect of disaster management, it should not overshadow other significant factors. For instance, the strategy during Cyclones Phailin and Fani mostly revolved around evacuation, with more than a million people moved from vulnerable districts. This approach largely overlooked the potential destruction caused by storm surges, which can be catastrophic depending on the cyclone's intensity, high tides, and topography.

Insufficient post-disaster response: There is a noticeable lack of attention given to post-disaster response in India. During Cyclone Jawad, many farmers resorted to distress selling and premature harvesting due to the approaching cyclone. More proactive measures, such as providing mechanised harvesting procedures during emergencies, can significantly reduce the economic impact on farming communities.

Inadequate infrastructure: Even with timely evacuation, the lack of sturdy and cyclone-resistant infrastructure can lead to significant property damage. Many buildings, including cyclone shelters, may not withstand the impact of a severe cyclone with high storm surges.

Communication barriers: Efficient communication is crucial during a disaster. However, language barriers, illiteracy, and the lack of access to communication tools in rural and

marginalized communities can hinder the effective dissemination of early warnings and instructions.

What should be done to ensure proper cyclone disaster management in India?

To ensure effective cyclone disaster management in India, several measures and actions can be taken. Here are some key steps that can be implemented:

Strengthen early warning systems: Enhance the capabilities of meteorological agencies, such as the India Meteorological Department (IMD), to provide accurate and timely cyclone forecasts and warnings. Invest in advanced technologies, such as weather radar systems and satellite imagery, to improve cyclone tracking and prediction.

Improve communication and dissemination: Establish robust communication channels to disseminate early warnings and relevant information to the public, especially vulnerable communities in cyclone-prone areas. Utilize multiple mediums, including mobile networks, radio, television, and social media, to ensure widespread dissemination.

Enhance preparedness and response planning: Develop comprehensive cyclone preparedness and response plans at national, state, and local levels. Conduct regular drills and exercises to test the effectiveness of response mechanisms and ensure coordination among various stakeholders, including government agencies, civil society organizations, and the public.

Strengthen infrastructure and resilience: Invest in the construction and retrofitting of cyclone-resistant infrastructure, including cyclone shelters, coastal embankments, and resilient housing. Implement coastal protection initiatives, such as mangrove restoration and beach nourishment, to mitigate the impact of storm surges and erosion.

Community engagement and capacity building: Promote community participation and awareness in cyclone preparedness and response. Conduct training programs and workshops to build the capacity of communities, local leaders, and volunteers in disaster management techniques, evacuation procedures, and first aid.

Integration of technology: Leverage technological advancements, such as remote sensing, geospatial mapping, and early warning systems, to enhance cyclone monitoring, forecasting, and response. Ensure access to reliable and up-to-date information for decision-making.

Strengthen coordination and collaboration: Foster collaboration among different stakeholders, including government agencies, nongovernmental organizations, academia, and the private sector, to ensure a coordinated approach to cyclone disaster management. Facilitate information sharing, resource mobilization, and joint planning.

Post-disaster recovery and rehabilitation: Develop comprehensive strategies for post-cyclone recovery and rehabilitation, including provision of immediate relief assistance, infrastructure reconstruction, livelihood restoration, and psychosocial support for affected communities.

Sources: The Hindu ([Article 1](#) and [Article 2](#)), [Down To Earth](#), [NIDM](#), [UN Habitat](#), [India Today](#) and [The Times of India](#)

Syllabus: GS 3: Disaster Management: Disaster and disaster management.

[Yojana June 2023 Summary] Direct Benefit Transfer (DBT) in India: A global role model – Explained, pointwise

Introduction

Direct Benefit Transfer (DBT) in India has emerged as a pioneering model in ensuring the efficient and effective transfer of government welfare benefits. By leveraging technology and India's unique identity infrastructure, DBT directly channels funds to beneficiaries' accounts, minimizing leakages and corruption. It represents a successful amalgamation of public policy and technology, prompting global recognition. As India shares this innovative approach at

international forums like G20, DBT's potential as a global role model for welfare distribution becomes increasingly evident.

What is DBT?

my GOV
मेरी सरकार

AADHAAR

New Paradigms in Financial Inclusion for New India
Jan Dhan se Direct Benefit Transfer

Direct Benefit Transfer (DBT) - Bringing transparency through Aadhaar

Aadhaar to identify and remove fake and duplicate beneficiaries

82.9% DBT beneficiaries seeded with Aadhaar

34.53 crore beneficiaries seeded with Aadhaar

₹68,815 crore of funds transferred using Aadhaar Bridge Payment

f MyGovIndia

www.transformingindia.mygov.in

Source: MeitY

The DBT was envisioned as a system where welfare benefits provided by the government are directly credited to the identified beneficiary's bank or postal account. Over time, the initiative has expanded, growing both in its scope and coverage.

The scope of DBT has widened: From merely providing cash support to including in-kind transfers. Today, it covers more than 300 Central schemes and over 2000 State schemes. The benefits provided range from cash assistance to in-kind goods and services.

Cash support schemes: such as the [Pradhan Mantri Kisan Samman Nidhi \(PM KISAN\)](#), which supports farmers, and the National Social Assistance Programme (NSAP), providing pensions for

the elderly, Divyangjan, and widows. There are also scholarships for deprived sections needing support.

In-kind support schemes: Include the fertilizer subsidy, the Public Distribution System for food grains support, and the Pradhan Mantri Poshan Shakti Nirman (PM POSHAN) which provides mid-day meals for school children.

Use of Aadhaar: DBT schemes employ the use of the electronic ID Aadhaar for identifying and authenticating the intended beneficiaries. During the enrollment of beneficiaries, their Aadhaar details are captured and subsequently authenticated against details stored in the Unique Identification Authority of India (UIDAI)'s Central Identities Data Repository (CIDR).

The frequency of this authentication process depends on the particular scheme. For instance, in the case of PM KISAN, Aadhaar authentication occurs only at enrollment, while for the Public Distribution System, beneficiaries must authenticate their Aadhaar each time they access their quota of grains.

What is India Stack and how DBT in India is integrated with it?

India Stack is a unified platform comprising open APIs and digital public utilities, with the objective to harness the key elements of identity, data, and payments at a large scale. It is essential to understand that Direct Benefit Transfer (DBT) is not a social assistance program in and of itself, but rather a mechanism to consolidate and control data on direct benefit transfers from various sources.

For cash schemes, DBT relies on bank account numbers or Aadhaar-linked accounts to directly transfer social benefits to beneficiaries. In this process, Aadhaar plays a dual role. Not only does it serve as a unique identifier, but also as a financial address. This takes place under the Aadhaar Payments Bridge (APB) system where an individual's Aadhaar number is mapped against a unique savings bank account, enabling transfers to such accounts using the Aadhaar number as the address.

Furthermore, under the Aadhaar-enabled Payment System (AePS), an individual can use their biometric credentials to carry out banking transactions in Aadhaar-linked bank accounts.

Read more: [DBT Scheme has been beneficial for India in meeting the diverse needs of its population](#)

What are the benefits of implementing DBT in India?

Direct Benefit Transfer (DBT)

*Ensuring Transparency,
Removing Leakages*



Accurate targeting of beneficiaries by **eliminating duplication & fraud**

Covers **300+** schemes across **52** ministries

₹22.77 lakh crore+ transferred directly into beneficiaries' bank accounts

8 Years
Seva, Sushasan,
Garib Kalyan



More than
₹2.22 lakh crore
estimated gains

Source: MeitY

Efficiency: DBT eliminates intermediaries, ensuring that funds directly reach the intended beneficiaries, making the process faster and more efficient.

Transparency: Since the transfer of benefits is done electronically, it reduces the chances of funds being misused, creating a transparent system of fund allocation.

Reduction in corruption: DBT helps curb corruption by cutting out intermediaries and reducing opportunities for funds to be siphoned off.

Reduced leakages: The program minimizes the leakage of funds that typically occurs in traditional welfare schemes where resources are diverted away from the intended beneficiaries.

Identity verification: Using Aadhaar for beneficiary identification aids in ensuring that the benefits reach the correct individuals.

Reduced expenditure for government: By eliminating wastage, DBT helps the government save significant resources that can then be deployed for other welfare schemes.

Financial inclusion: DBT encourages people, especially from rural and underprivileged backgrounds, to open bank accounts, thus promoting financial inclusion.

Real-time tracking: DBT allows for real-time tracking of fund disbursement, helping identify bottlenecks and areas of improvement.

Empowerment: Direct cash transfers enable beneficiaries to have greater control over their funds, enhancing their decision-making power and overall empowerment.

Must read: [How Direct Benefit Transfer scheme has transformed social welfare in India](#)

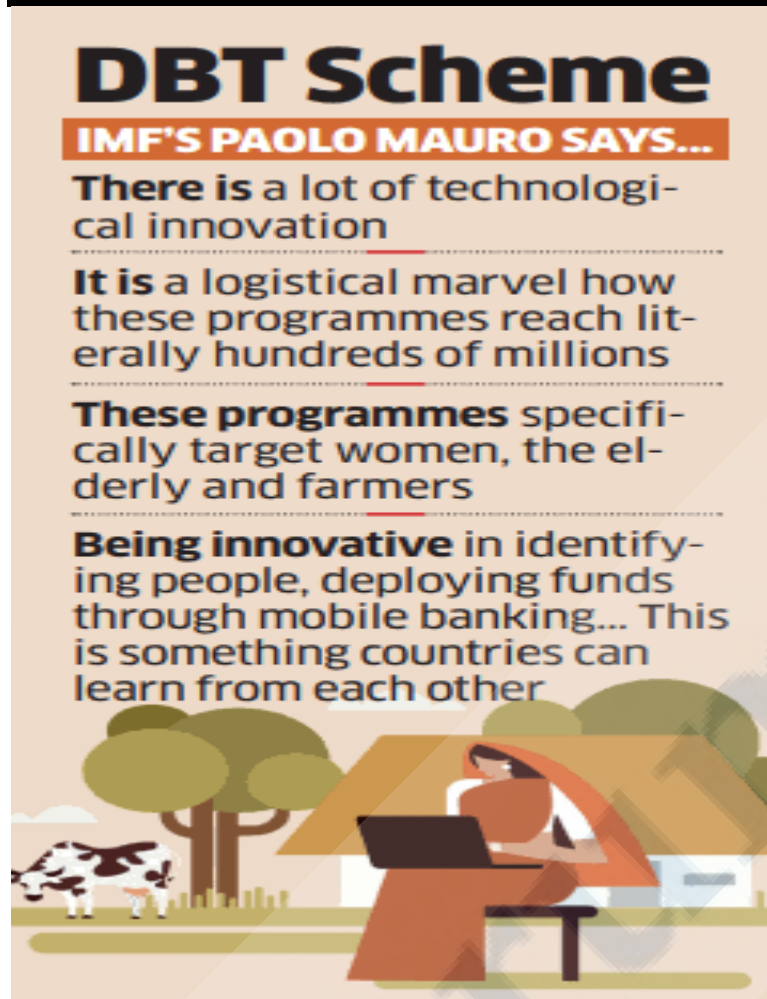
About DBT in India's role in the G20 agenda

India's ongoing Presidency of the G20 is committed to being inclusive, ambitious, action-oriented, and decisive. India's vision is that its initiatives for 'leveraging technology for citizen welfare' can lead to a fundamental mindset shift and benefit humanity as a whole. In line with this vision, DBT serves as an exemplary example of Indian innovation. India is seeking to introduce its home-grown DBT paradigm, which is based on [Digital Public Infrastructure \(DPI\)](#), to the world through the G20 platform. The initiative is particularly targeted towards the Global South.

DBT in India is not just a national initiative; it also aligns with India's broader goals within its co-chairship of the Global Partnership for Financial Inclusion. For its impact on promoting transparency, DBT was also showcased in the G20 Anti-Corruption Working Group Meeting.

Must read: [Direct Benefit Transfer \(DBT\): Advantages and Way Forward – Explained, pointwise](#)

How has the World reacted to DBT in India?



Source: TOI

DBT in India has garnered international recognition for its significant impact on social welfare and governance reforms.

The International Monetary Fund (IMF) applauds DBT: IMF praised DBT for its scale and logistical prowess in reaching hundreds of millions of low-income individuals. The institution called DBT a 'logistical marvel' for the impressive reach of its programmes.

World Bank lauds DBT's reach and impact: The World Bank also commended the scale at which DBT impacts lives. Owing to DBT's digital cash transfers, India succeeded in providing food or cash support to an astounding 85% of rural households and 69% of urban households. This achievement is a testament to the efficacy of DBT in reaching large populations with crucial support.

DBT's contribution to government savings: Beyond its impact on individual lives, DBT and its accompanying governance reforms have significantly contributed to government savings. By March 2021, these reforms had saved the Government of India a cumulative sum of Rs 2.23 lakh crore, which is approximately 1.1% of the nation's GDP. By March 2022, these savings had increased to Rs 2.73 lakh crore, further emphasizing the economic impact of DBT.

What does the future hold for DBT in India?**The future of DBT lies in two proposed initiatives: DBT 2.0 and DBT 3.0.**

DBT 2.0: It aims to streamline the process of verifying eligibility for various schemes. Currently, applicants must submit various eligibility documents or certificates issued by different government departments, which then must be verified by the scheme's implementing agency. This process can be time-consuming and costly. The new initiative will digitise and link these documents to Aadhaar, ensuring efficient, real-time verification. Platforms such as DigiLocker and API Setu will facilitate access to these certificates in electronic and machine-readable formats. Many states and central government departments have already adopted this system, and efforts are underway to onboard the remaining ones.

DBT 3.0: It envisions a transformative change in the way benefits are delivered to citizens. Currently, citizens must discover eligible government schemes and apply for them to receive benefits. Under DBT 3.0, the government will proactively reach out to eligible citizens based on data from various government databases. The delivery of benefits will commence upon receiving the beneficiaries' consent.

Several states have implemented 'Social Registries', which are databases of beneficiary information, such as Kutumba in Karnataka, Parivaar Pehchaan Patra in Haryana, Samagra in Madhya Pradesh, Jan Aadhaar in Rajasthan, and Social Protection Delivery Platform (SPP) in Odisha. The next step is to establish a national-level social registry that incorporates best practices from state-level initiatives, further revolutionising governance in India.

Must read: [Universal Basic Income: Benefits and Challenges – Explained, pointwise](#)

India's Direct Benefit Transfer scheme has revolutionized the delivery of social welfare benefits, ensuring efficient and direct access for beneficiaries while reducing corruption and wastage. Its success has received international recognition, further cementing India's position as a leader in leveraging technology for social welfare. The future plans for DBT in India promise to build upon its successes, further streamlining the process of benefit delivery and enhancing its impact. Indeed, the DBT paradigm is one of India's most significant contributions to the global welfare discourse.

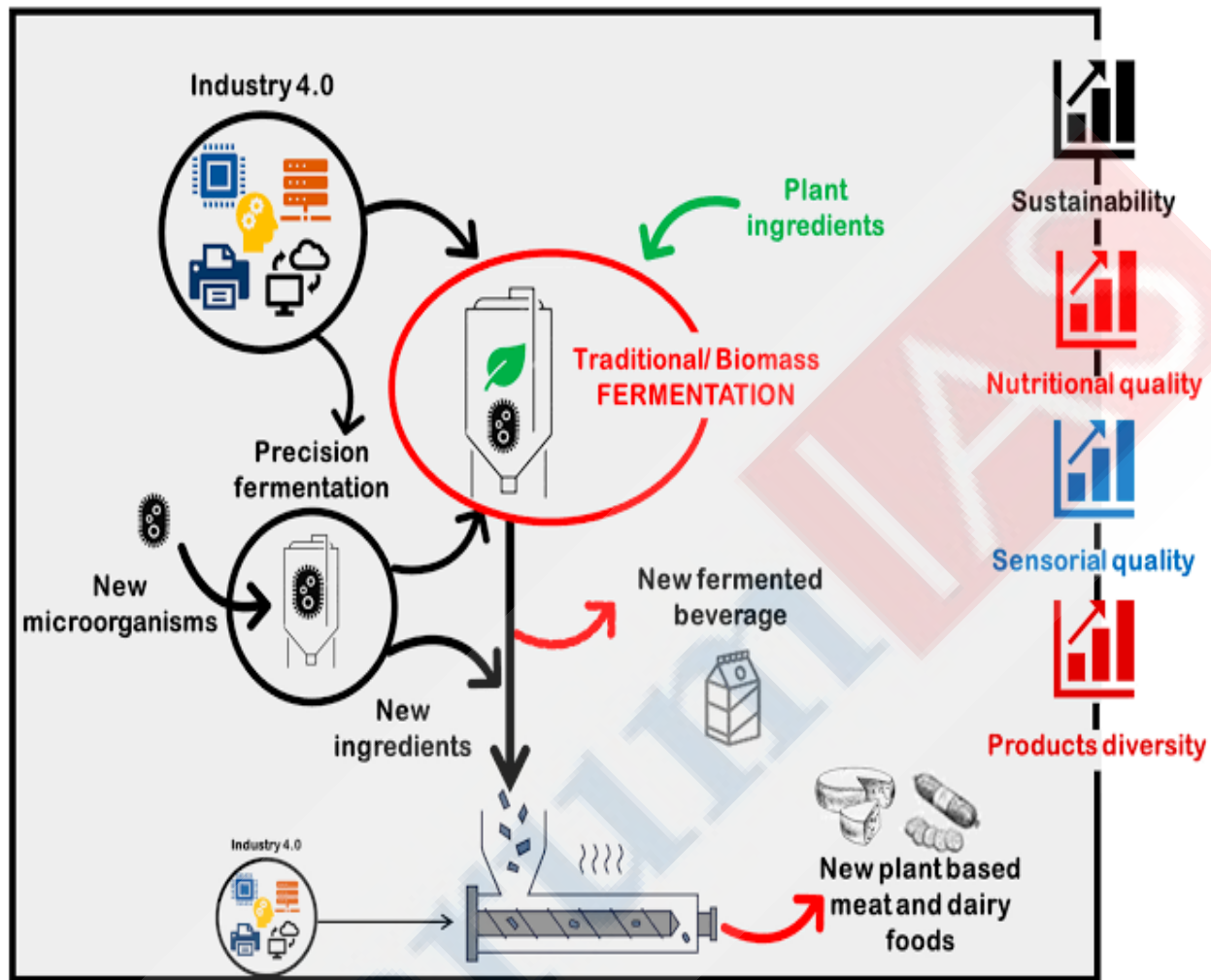
Source: Yojana

Syllabus: GS 2: Social Justice: mechanisms, laws, institutions and Bodies constituted for the protection and betterment of vulnerable sections.

Precision fermentation: advantages and challenges – Explained, pointwise**Introduction**

Precision fermentation is an innovative technology that holds great promise for the food industry. By programming microorganisms to produce specific proteins and ingredients, it offers numerous advantages such as sustainable foods and pharmaceutical products, reduced environmental footprint, and potential solutions to food crises. However, precision fermentation also faces challenges related to regulation, safety, public perception, and its impact on traditional agriculture. Balancing these advantages and challenges is crucial for its successful implementation.

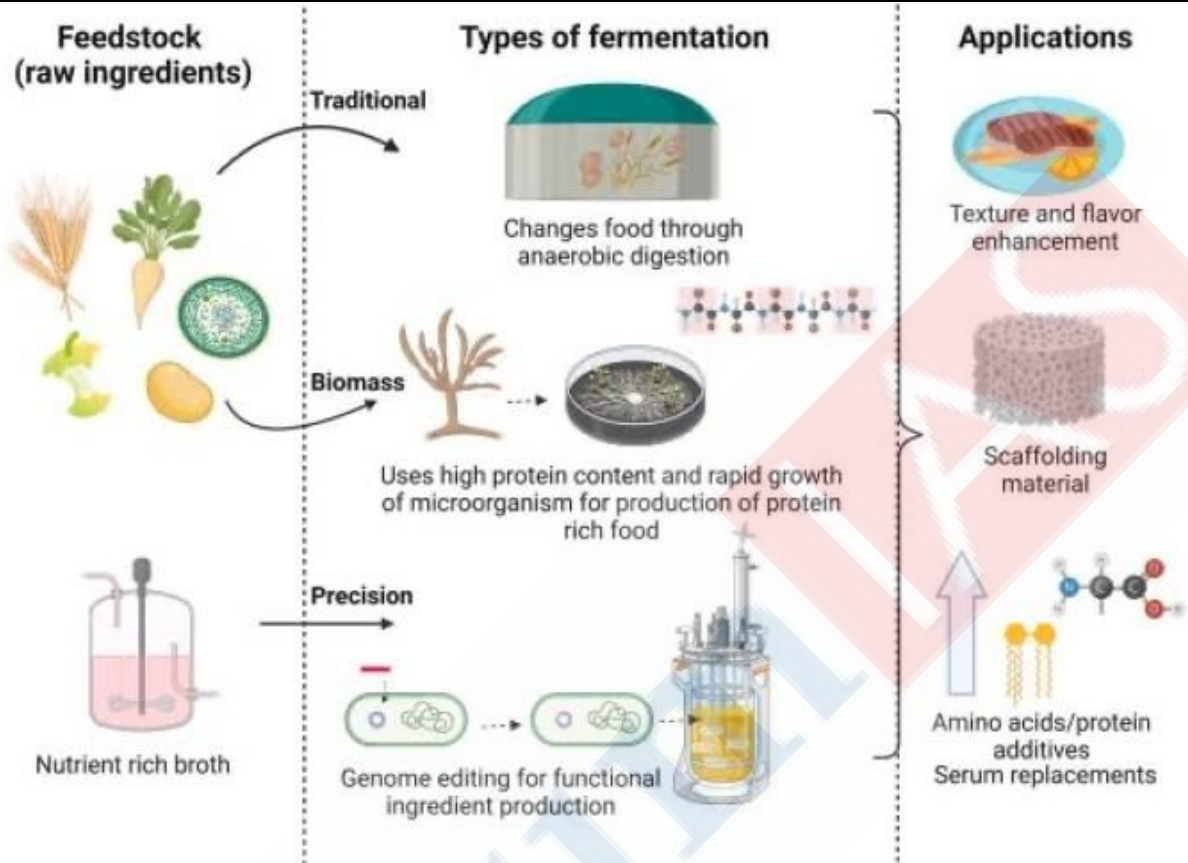
What is precision fermentation?



Source: MDPI

Precision fermentation is a cutting-edge technology that combines traditional fermentation methods with precision biology techniques. It involves programming microorganisms, such as yeast, to produce specific proteins by inserting genetic instructions or DNA sequences into their cells. These engineered microorganisms then act as factories, producing desired proteins without the need for traditional agricultural methods or animal sources. Precision fermentation offers the potential for sustainable and scalable production of animal-free proteins with identical taste, texture, and functionality to conventional counterparts.

What are the potential applications of precision fermentation?



Source: Science Direct

Pharmaceutical applications: Precision fermentation has been successfully used in the production of pharmaceutical products, such as insulin and other life-saving drugs. By using microbial fermentation to produce these drugs, it eliminates the need for animal-based sources and ensures a more consistent and reliable supply.

Alternative proteins: Precision fermentation has enabled the production of alternative proteins that can mimic the taste, texture, and nutritional profile of animal-based proteins. Companies have developed animal-free milk and egg proteins through precision fermentation, providing sustainable and ethical alternatives to traditional animal agriculture.

Novel food ingredients: Advanced fermentation technologies have been utilized to create novel food ingredients that offer unique properties and benefits. For example, companies have produced plant-based heme protein (leghemoglobin) through precision fermentation, which provides the distinctive flavour and color of meat. This has paved the way for the development of plant-based meat alternatives with enhanced sensory characteristics.

Industry growth and investments: The precision fermentation industry has witnessed substantial growth and investment in recent years. Numerous startups and companies are dedicated to advancing precision fermentation technologies, and investments in the sector have been increasing. This growth indicates the growing recognition of precision fermentation as a viable solution for addressing food system challenges.

Read more: [THE FORMULA FOR PLANT-BASED 'MEATS'](#)

What are the needs for precision fermentation?

Food crisis and insecurity: Traditional farming won't be able to provide all of the world's food needs because there isn't enough land available and the population is expanding daily.

Environmental degradation: Conventional agriculture practices contribute to deforestation, soil erosion, and the depletion of natural resources. Precision fermentation can help reduce the environmental impact by minimizing land use, water consumption, and the need for chemical inputs, thus mitigating environmental degradation.

Water crisis: Agriculture is a major consumer of freshwater resources. Precision fermentation requires less water compared to traditional farming methods, making it a potential solution to mitigate water scarcity and reduce the strain on water supplies.

Climate change issue: Greenhouse gas emissions associated with livestock farming and conventional crop cultivation are responsible for climate change.

Animal cruelty: Animal agriculture often raises concerns about the ethical treatment of animals. Precision fermentation is devoid of such concerns.

Read more: [What is 'meat' from plants, and is 'just like' meat vegetarian?](#)

What are the advantages of precision fermentation?

Sustainable food production: Advanced fermentation technologies offers a more sustainable alternative to conventional agricultural methods, reducing land use, water consumption, and greenhouse gas emissions. It provides a way to address the environmental impact of traditional farming practices.

Animal welfare and ethics: Precision fermentation allows for the production of animal-free proteins, eliminating the need for raising and slaughtering animals. It aligns with the ethical concerns and increasing demand for cruelty-free food options.

Innovation and economic opportunities: Precision fermentation represents a technological innovation that opens new avenues for economic growth and job creation. It fosters the development of a bio-based economy, with opportunities in research and development, manufacturing, and commercialization of precision fermentation-based products.

Food security and global nutrition: Precision fermentation can contribute to food security by providing a scalable and efficient method of protein production. It offers the potential to meet the nutritional needs of a growing population, especially in regions where access to traditional protein sources is limited.

Climate change mitigation: Precision fermentation reduces the environmental impact of food production by minimizing deforestation, soil degradation, and methane emissions from livestock. It helps in mitigating climate change by promoting more sustainable practices.

Read more: [Technological advancement often has a sting in its tail](#)

What are the concerns surrounding precision fermentation?

High production costs: Currently, precision fermentation technologies can be costly, making the products derived from them more expensive compared to conventional alternatives. This pricing disparity poses a challenge to widespread adoption and market accessibility, particularly in terms of affordability for consumers.

Regulatory and safety considerations: As Advanced fermentation technologies involves genetic engineering and the use of genetically modified organisms (GMOs), there are regulatory and safety considerations. Ensuring the safety of novel proteins and ingredients produced through precision fermentation is crucial, and comprehensive testing and evaluation processes are necessary to address any potential risks to human health and the environment.

Ethical and societal implications: Advanced fermentation technologies raise ethical questions related to the use of genetically modified organisms, particularly in food production. Some

individuals may have ethical objections to consuming foods derived from GMOs, highlighting the need for transparency and clear communication about the technology and its applications.

The concentration of power: There is a concern that precision fermentation, like other innovative food technologies, could lead to the concentration of power in the hands of a few large corporations. This concentration could potentially limit market competition and hinder small-scale producers or new entrants in the industry, impacting diversity and innovation.

Impact on traditional agriculture: The widespread adoption of precision fermentation and alternative protein sources could potentially disrupt traditional agricultural sectors, including livestock farming and crop production. This may have socioeconomic implications for farmers and communities dependent on these industries, requiring transition strategies and support.

What should be done?

Robust regulatory framework: Establishing a comprehensive regulatory framework specific to precision fermentation is essential. This includes rigorous safety assessments, labelling requirements, and guidelines for the approval and commercialization of products derived from this process.

Scientific advancements: Ongoing research and development are needed to enhance the efficiency, scalability, and cost-effectiveness of precision fermentation processes. Advancements in precision biology, genetic engineering, and fermentation techniques can optimize the production of animal-free proteins.

Collaboration and diversity: Encouraging collaboration among stakeholders, including precision fermentation companies, traditional farmers, policymakers, researchers, and consumer groups. This can facilitate a balanced and diverse food system. Supporting small-scale producers, startups, and innovators in entering the precision fermentation sector can foster competition, innovation, and prevent the concentration of power.

Consumer acceptance and education: Building consumer awareness and understanding of precision fermentation is essential for the wider acceptance of animal-free proteins. Educating the public about the benefits, safety, and sustainability aspects of fermentation can contribute to its adoption.

Ethical considerations: This includes addressing concerns about the use of genetically modified organisms and ensuring responsible practices throughout the production and supply chain. Promoting ethical guidelines and practices, such as sustainable sourcing of ingredients and fair trade principles, can contribute to the ethical implementation of precision fermentation.

Sources: [Livemint](#), [AFN](#), [Innovation Origins](#), [PETA](#), [The Guardian](#), [Business Wire](#), [Food Navigator](#) and [Food Institute](#).

Syllabus: GS 3: Science and Technology: Awareness in the field of biotechnology.


[Yojana June 2023 Summary] Yoga for Global well-being – Explained, pointwise

Introduction


Yoga, a centuries-old practice, offers more than just physical exercise. It embodies a holistic approach to well-being, encompassing physical, mental, and spiritual health. This ancient practice provides tools to manage stress, enhance focus, and improve physical health. Its principles foster compassion and environmental sustainability, promoting overall global well-being. With a growing body of research endorsing yoga's health benefits, it continues to gain recognition as a valuable tool for promoting health and well-being worldwide.

What is yoga?

Eight Limbs of Yoga



THE ART OF LIVING



1 yamas
5 social ethics

- ahimsa - kindness
- satya - truthfulness
- asteya - nonstealing
- brahmacharya - moderation
- aparigraha - generosity

2 niyamas
5 personal practices

- saucha - purity
- santoshya - contentment
- tapas - austerity
- swadyaya - self-study
- iswara-pranidhana - surrender

3 asana
postures

Easy comfortable positions of the body, connecting the mind and spirit to experience stillness and infinity

4 pranayama
mindful breathing

Honoring the breath to uncover the light within

5 prathyahara
turning inward

Providing alternate 'inner point of attraction' (like breath, chakra) to the senses to go inward

6 dharana
concentration

Focus and attention

7 dhyana
de-concentration

Dropping all the efforts and letting go

8 samadhi
pure bliss

Constant complete harmony of the Self with universe

artofliving.org

Source: Artofliving

Yoga is an ancient practice that goes beyond simple exercise. It's a lifestyle that boosts your physical, mental, and spiritual health. It's used worldwide as a key tool for overall well-being.

Concept and Principles of Yoga:

Yoga promotes inner peace and happiness. It includes teachings called Yama and Niyama that guide us to live better. Ahimsa, which means non-violence, teaches us to avoid hurting others. Santosha, or contentment, helps us find happiness within ourselves.

Yoga also encourages us to live in harmony with nature, leading to more sustainable lifestyles. One of its key principles, Aparigraha, tells us to only use what we need and leave the rest for others. It also teaches us to be kind and respectful to all beings, helping us build a fairer world. So, practising yoga isn't just about personal health. It's about making a positive difference in our society and planet.

What are the key Yogic practices for health and well-being?

There are a variety of yogic practices that are essential for promoting physical, mental, and spiritual well-being. Here are some of the primary practices:

Shatkarmas: Shatkarmas, or purification practices, are foundational in Hatha Yoga. This help cleanses the body and prepares it for more advanced practices. Examples include Kunjal or Varisar Dhauti, which improve digestion, and Jal Neti and Sutra Neti, which aid in the cleansing of the nasal sinus and improvement of eyesight.

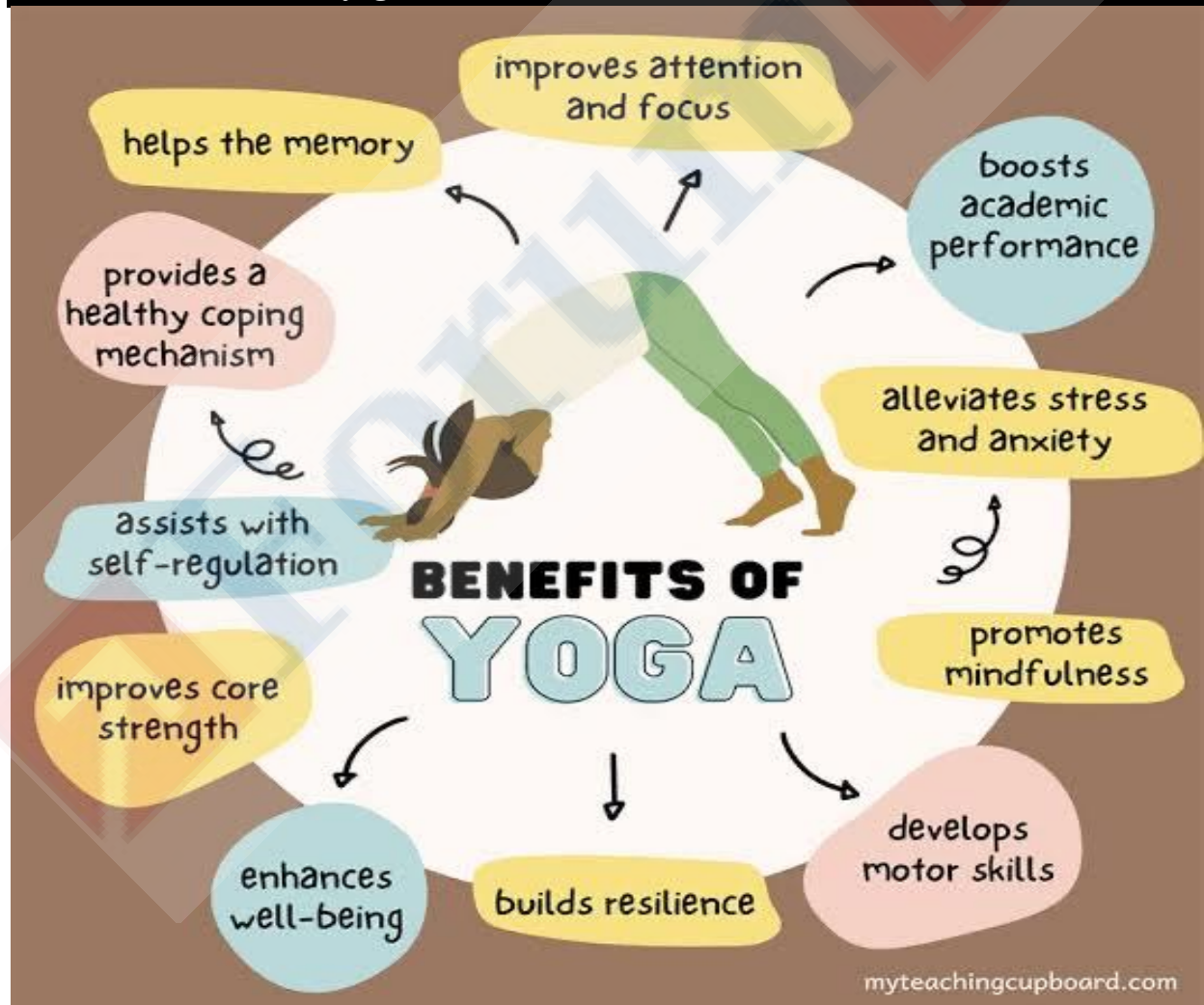
Yogasana: Yogasanas, or yoga postures, are performed after the body has been detoxified. This enhances the body's strength, flexibility, and overall fitness. There are many different yoga asanas, each offering specific benefits.

Pranayama: Pranayama, or breath regulation, is an essential part of yoga. Once the body is detoxified and stabilized through Shatkarmas and Yogasana, pranayama helps in opening the subtle channels carrying vital energy throughout the body. Examples include Nadi-Shodhana Pranayama, Shitali Pranayama, and Bhramari Pranayama.

Mudra & Bandha: Mudras, or body gestures, and Bandhas, or psychic locks, are used to control and channelize prana (life energy) in the body. This lead to various health benefits and is crucial for maintaining proper energy flow.

Dhyana: Dhyana, or meditation, is the most critical practice of yoga. It helps in developing the mind's inherent capabilities and leads to benefits such as reduced stress, improved memory, and enhanced concentration.

What are the benefits of yoga?



Source: Myteachingcupboard

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Reduces stress and anxiety: Yoga helps to manage stress and anxiety. Regular practice reduces the level of stress hormones in your body, leading to improved mental health. This can prevent health issues like high blood pressure, depression, and heart disease.

Improves concentration and focus: Yoga has the power to enhance focus and clarity of thought. Amid the bustle of everyday life, it helps calm your mind, reducing distractions and promoting productivity and creativity.

Promotes physical Health: Yoga is also a fantastic way to improve physical health. Regular practice improves flexibility, strength, balance, and endurance. It can help manage chronic pain, improve respiratory functions, and even boost your immune system.

Promotes compassion and respect: On a broader scale, practicing yoga helps promote a more equitable world. It teaches respect and kindness towards all beings, fostering a culture of empathy and compassion.

Encourages environmental sustainability: By teaching us to live in harmony with the environment, yoga inspires us to adopt more sustainable lifestyles. It helps us realize our connection to the natural world, promoting behaviors that protect and preserve our planet.

What does the research say about Yoga and Well-being?

The growing interest in Yoga: Research interest in yoga, particularly in its impact on physical and mental health, has increased significantly since the beginning of the 21st century. PubMed, for instance, shows an exponential increase in publications on yoga since the early 2000s.

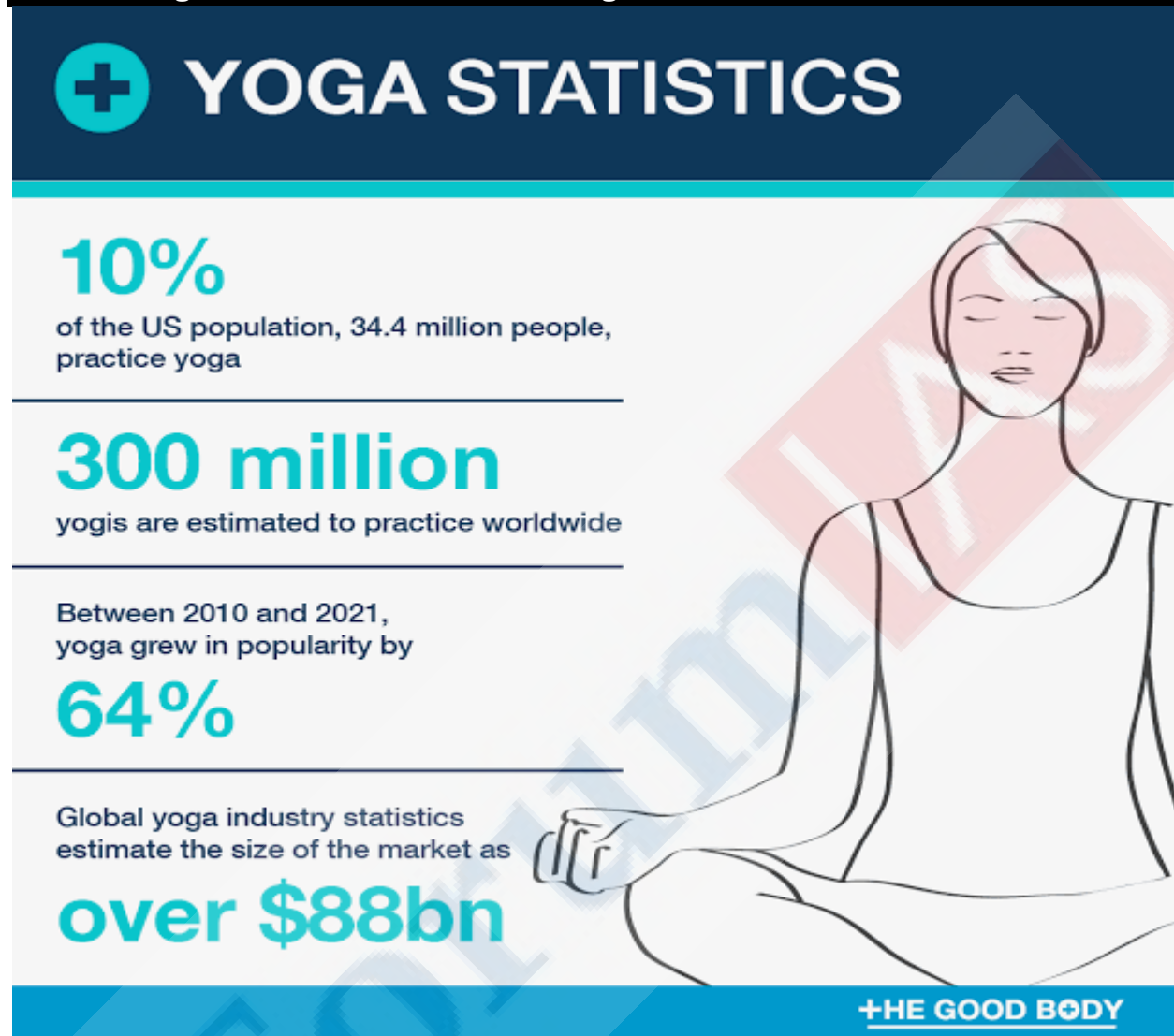
Yoga as complementary therapy: Studies have evaluated yoga's efficacy on various non-communicable diseases such as stroke, cancer, hypertension, and diabetes. Many researchers have found yoga to be an effective complementary therapy to conventional treatments for these conditions.

Yoga and ageing: Yoga's potential as a therapy to combat age-related neurodegenerative diseases has gained considerable attention. It is viewed as an alternative mode of physical activity that may help older adults achieve recommended levels of physical activity.

Perception of Yoga: A US survey revealed that yoga is perceived in several ways, including as an exercise activity, a spiritual activity, or a means to treat health conditions. Research reviews also found that yoga practices could be as effective as or superior to exercise in improving several health conditions.

Yoga's unique contributions: Yoga promotes positive health, helping us to tide over health challenges that occur during our lifetime. This concept of positive health is one of yoga's unique contributions to modern healthcare. Yoga plays both a health promotion and preventive role in healthcare among the masses.

How does Yoga contribute to Global Well-being?



Source: The goodbody

Tool for harmonious relationships: Yoga's principles, like Ahimsa (non-violence) and Santosha (contentment), encourage peaceful relationships with others. For instance, Ahimsa teaches us to avoid harm to all living beings, while Santosha promotes inner happiness over external validation. By integrating these values, societies can foster empathy and mutual respect, thereby improving global well-being.

Environment sustainability: Yoga practitioners are encouraged to connect with nature and respect the environment, fostering sustainable lifestyles. The principle of Aparigraha (non-possessiveness) instructs us to only use what we need, promoting environmentally conscious choices. This principle fosters respect for all beings and our planet, thereby contributing to global sustainability.

Yoga- a path towards equality: Yoga teaches respect and kindness to all, promoting a more equitable world. By treating all beings with dignity, yoga cultivates a culture of justice and equality, thus contributing to global well-being.

Promoting cultural awareness: Yoga, a practice that originated in India, is now a global phenomenon. It fosters cultural awareness and diversity, bridging gaps between cultures and

promoting global unity. This helps tackle global challenges like climate change, poverty, and inequality and contributes to the overall well-being of humanity.

The art and science of yoga offer a pathway to connect individual consciousness with universal consciousness, aiding in the attainment of a disease-free body and a calm, peaceful mind. Yoga encourages individuals to be aware, accept, and effectively manage emotions like stress, anxiety, and aggression – common symptoms of modern lifestyles. Thus, yoga proves to be an invaluable tool for global well-being, offering multiple benefits like stress reduction, improved mental clarity and focus, physical health, mindfulness, and spirituality

Carbon Border Adjustment Mechanism (CBAM) and its implications for India – Explained, pointwise

Introduction

The Carbon Border Adjustment Mechanism (CBAM), recently implemented by the European Union (EU), has significant implications for countries like India. CBAM imposes a carbon cost on high-emission imports, potentially affecting India's export competitiveness. This new regulation, aimed at preventing carbon leakage, raises concerns about compatibility with existing trade norms and commitments under the Paris Agreement. Understanding the potential impact of CBAM on India and how the country responds is crucial in the broader context of global climate policy and trade.

What is the CBAM?

CARBON BORDER ADJUSTMENT MECHANISM

A CBAM **adds a tariff** to imports equal to the carbon price domestic manufacturers face. An **export rebate** allows domestic manufacturers to be competitive in international markets.

Imported product carbon price + Tariff =

Exported product carbon price - Rebate =

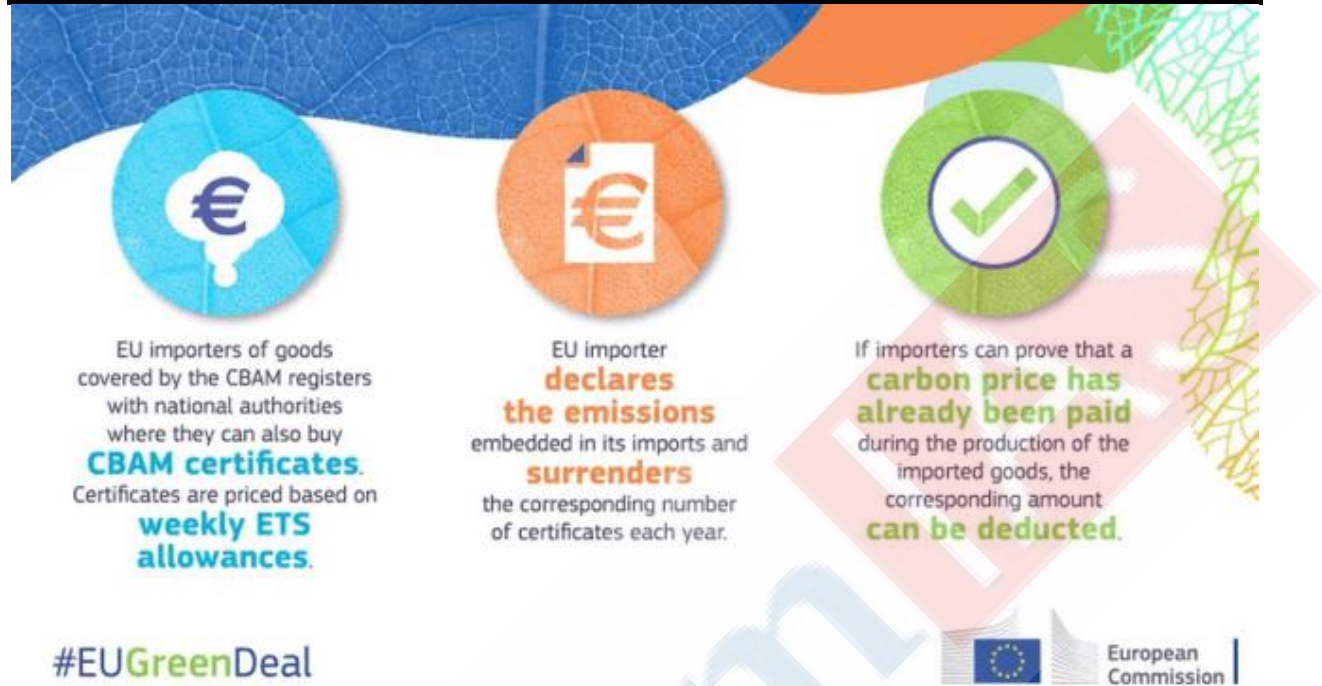
DOMESTIC MARKET
carbon price
\$

Source: ITIF

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Read here: [Common Border Adjustment Mechanism](#)

What are the arguments in supporting the implementation of CBAM?



Source: European Commission

Promotes decarbonisation globally: The CBAM provides an incentive for countries to reduce their carbon emissions. For example, if a country wants to export steel to the EU, the policy imposes an extra cost if the steel is produced using carbon-intensive processes. This encourages manufacturers to adopt cleaner, less carbon-intensive methods of production.

Prevents carbon leakage: CBAM prevents “carbon leakage”, the phenomenon where companies transfer their operations to countries with less stringent emissions regulations. For example, if a cement manufacturer moves from the EU to a country with fewer regulations, it might increase emissions. The CBAM discourages this by imposing a border tax on carbon-intensive imported goods.

Level playing field for businesses: The CBAM helps create a level playing field between domestic businesses in the EU and foreign companies. For instance, a European aluminium producer that follows strict emission rules would be at a disadvantage if competitors from other countries with less stringent rules could sell their products in the EU without any penalties. CBAM ensures foreign producers are also subject to a carbon cost, ensuring fairness.

Revenue generation for climate initiatives: CBAM will generate revenue through border taxes on carbon-intensive goods. This can be used to fund climate initiatives or capacity-building measures in developing countries or Least Developed Countries (LDCs) if the EU decides to allocate it in this manner.

Stimulates innovation in clean technologies: CBAM can stimulate innovation in clean technologies. Faced with a potential CBAM charge, industries may be motivated to invest in new technologies to reduce their carbon emissions. For instance, the fertiliser industry might accelerate research into low-carbon or carbon-free production processes to lower their CBAM costs.

Encourages other countries to adopt carbon pricing: CBAM may encourage other countries to implement their own carbon pricing mechanisms. The aim is to avoid CBAM charges, as goods

from countries with equivalent carbon pricing mechanisms are exempt. This could potentially lead to the broad adoption of carbon pricing, further facilitating global decarbonisation.

Must read: [EU's carbon border tax – Explained, pointwise](#)

What are the arguments against the implementation of CBAM?

Discrimination against developing countries: One key concern about the CBAM is that it could unfairly disadvantage developing countries and least developed countries (LDCs), which might lack the capacity to meet its requirements. For example, a steel producer in a developing country might not have the resources to reduce its carbon emissions to EU standards, which could put it at a disadvantage in the international market.

Contradiction with multilateral agreements: CBAM may contradict existing multilateral climate and trade agreements, including the Paris Agreement and World Trade Organization (WTO) principles. For instance, the Paris Agreement calls for 'Common but Differentiated Responsibilities', allowing countries at different stages of development to set their own emissions targets. CBAM doesn't offer such differentiation, possibly violating this principle.

Potential for trade disputes: CBAM could spark trade disputes, as it appears to contravene the WTO's non-discrimination principles. Countries could challenge the CBAM at the WTO, arguing it discriminates against 'like' goods based on their carbon content.

Complicated implementation: The implementation of CBAM could be complex and challenging, particularly for countries with less administrative and institutional capability. For example, the need to establish rules of origin to account for carbon content for every part and component at the point of origin would be a formidable task for countries involved in complex global value chains.

Possibility of retaliatory measures: There's a risk that countries affected by the CBAM might respond with retaliatory measures, such as their own carbon border taxes. This could escalate into a trade war, complicating international trade and potentially harming global economic growth.

Questionable justification: Some critics question the basic premise of the CBAM, arguing there's insufficient evidence of significant carbon leakage to justify it. Critics contend that other factors, such as labor costs, regulatory transparency, and stability, often carry more weight in companies' location decisions than environmental regulations.

Read more: [A multi-pronged counter is warranted to tackle the EU's carbon tax plans](#)

How does CBAM affect other countries' carbon pricing mechanisms?

Undermining other carbon pricing mechanisms: The CBAM can undermine other countries' carbon pricing mechanisms by setting a global price standard. As the CBAM only recognizes the EU Emission Trading System and equivalent mechanisms, countries using different forms of climate regulation may find their efforts devalued.

Imposing additional burden on developing countries: Many developing countries lack the institutional capacity to set up a comprehensive accounting and reporting system for carbon emissions, a requirement under the CBAM. This imposes an additional burden on these nations and could potentially hamper their own climate action initiatives.

Questioning "Equivalence": The concept of "equivalence" becomes tricky with the introduction of CBAM. Countries that have opted for different forms of climate regulation under their Nationally Determined Contributions (NDCs) may struggle to ensure "equivalence" in terms of carbon pricing, potentially leading to an uneven playing field. This will in turn create trade inequities.

The challenge of "Extraterritorial Effects": The CBAM raises critical questions regarding extraterritorial effects, given that it implicitly assumes or enforces compliance with EU norms on

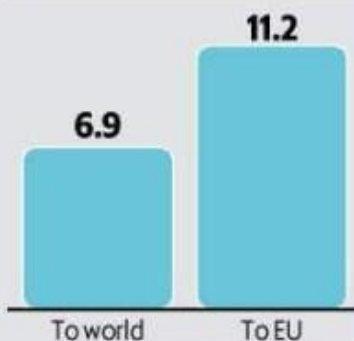
countries outside its jurisdiction. This could lead to tensions in international climate agreements and trade relations.

Why is India worried about the CBAM?

RISING TENSION

The proposed tax has raised concerns among Indian metal producers, who fear it will create a new trade barrier for exports to Europe.

Share (%) of CBAM products in India's exports



India's total exports of CBAM products to EU:

\$8.22 bn

Impact on sectors covered under CBAM

mint

↑ HIGH

	Number of tariff lines affected	EU's share (%) in India's exports of CBAM products
Iron ore, concentrates	16	19.9
Steel products	163	20
Iron and steel	473	31.4
Aluminium and products	85	27.7
↓ LOW		
Cement	14	6.1
Fertilizer	24	0.7
Hydrogen	1	0
Electrical energy	1	0

CBAM: Carbon Border Adjustment Mechanism

Source: Global Trade Research Initiative (GTRI)

SARVESH KUMAR SHARMA/MINT

Source: Live Mint

Potential impact on key industries: India, being a major global producer of steel and aluminium, is concerned about the impact of CBAM on these industries. The CBAM might put Indian producers at a disadvantage as they may find it more challenging to meet the EU's carbon standards.

A barrier to free trade: India is currently in the process of negotiating a Free Trade Agreement (FTA) with the EU. There's a worry that while tariffs are being eliminated under the FTA, the CBAM could act as a non-tariff barrier, impacting the expected benefits of the agreement.

Transparency concerns: India also raises concerns over the transparency of the carbon tax calculation under CBAM. The EU's one-size-fits-all approach may not take into account factors like per capita pollution, forest cover, and sustainable living, which are relevant in the Indian context.

Risk of retaliation and trade disputes: Lastly, India, like many other countries, might consider retaliatory measures against the EU's CBAM. This could lead to trade disputes and potentially harm relations between India and the EU.

Read more: [Why EU's carbon levy helps rich countries get richer](#)

How is India planning to tackle CBAM?

Conducting sectoral analysis: The Indian government plans to undertake a sector-by-sector analysis to assess the impact of the CBAM on its industries. This detailed examination will aid in determining targeted action plans for each potentially affected sector.

Engaging relevant departments: India is roping in multiple departments, such as the Climate Change Finance Unit of the Department of Economic Affairs and the Steel Ministry, to collaboratively analyze the potential issues and formulate suitable solutions.

Incorporating CBAM into FTA Negotiations: India is considering including CBAM discussions in the ongoing negotiations for a Free Trade Agreement with the EU. This approach aims to ensure that while tariffs are being eliminated under the FTA, the CBAM doesn't pose additional barriers to trade.

Demanding transparency: India is keen to ensure that the EU provides transparency in how the carbon tax under the CBAM is calculated for different sectors. It insists that factors like per capita pollution, forest cover, and sustainable living practices should also be considered in the assessment.

Building alliances with developing nations: In its strategy to tackle the CBAM, India is also planning to join forces with other developing nations, such as South Africa. This collective approach will help present a united front in discussions and negotiations with the EU, strengthening their stance and addressing common concerns effectively.

Read more: [Exporting into a world with carbon tax](#)

What should be done?

Adopting uniform carbon pricing: To avoid the complexities related to the CBAM, countries should work towards a global agreement on uniform carbon pricing. This will not only create a level playing field but also avoid potential disputes.

Capacity building in developing countries: Given the difficulties in accounting and reporting the carbon emissions of production processes, efforts should be made at a global level to build the institutional capabilities of developing nations and least-developed countries.

Balancing trade and climate action: There is a need for better coordination and balance between trade policies and climate action commitments. Policies need to be designed such that they do not contradict but complement each other.

Revisiting multilateral agreements: Existing multilateral agreements on trade and climate change may need to be revisited and potentially revised to align them with new climate realities and mechanisms like the CBAM.

Establishing clear rules of origin: If carbon border adjustments become widespread, there will be a need for clear, transparent, and fair rules of origin to account for the carbon content of goods, especially in complex global value chains.

Sources: Live Mint ([Article 1](#) and [Article 2](#)), The Hindu ([Article 1](#), [Article 2](#) and [Article 3](#)), The Hindu Businessline ([Article 1](#) and [Article 2](#)), [Business Standard](#), [New Climate](#), [North Africa Post](#) and [WEF](#)

Syllabus: GS 3: Environment and Bio-diversity – Environmental pollution and degradation.

World's largest grain storage plan: benefits and challenges – Explained, pointwise

Introduction

India has embarked on an ambitious journey to establish the world's largest grain storage plan, aiming to transform the nation's agricultural economy. While the initiative presents numerous benefits, such as reducing post-harvest losses, enhancing farmers' income, and strengthening food security, it is not devoid of challenges. Issues like ensuring the functionality of Primary Agricultural Credit Societies and managing the enormity of the project are substantial hurdles to overcome. This exploration will delve into the merits and potential obstacles of this significant plan.

About the world's largest grain storage plan

Read here: [Cabinet approves Constitution and Empowerment of an Inter Ministerial Committee \(IMC\) for Facilitation of "World's Largest Grain Storage Plan in Cooperative Sector"](#)

What is the rationale/need for the world's largest grain storage plan?

Read here: [What is the massive grain storage plan the govt has unveiled, how it'll help farmers](#)

What are the salient features of the grain storage plan when compares to other nations' plans?

Scale of the project: The "World's Largest Grain Storage Plan in the Cooperative Sector" is a massive undertaking in comparison to similar projects in other nations, aiming to augment India's grain storage capacity from 145 million tonnes to 215 million tonnes.

Note: USA, Brazil, Russia, Argentina, Ukraine, France, and Canada which have more capacity to store food grains than they produce. Against the total foodgrain production of 615 MMT, China has a storage capacity of 660 MMT.

Decentralization: Unlike many other nations' centralized storage systems, India's plan promotes decentralization, aiming to construct storage facilities in every block with capacities between 500-2000 tonnes.

Climate consciousness: With the growing concern over climate change, this plan also seeks to create climate-resilient storage facilities, which is not a primary focus in many other countries' grain storage plans.

Inter-ministerial coordination: An inter-ministerial team will oversee the plan, ensuring seamless coordination among various government bodies.

Significant financial commitment: A budget allocation of INR 1 lakh crore shows a commitment not seen in many similar initiatives globally.

What are the benefits associated with the world's largest grain storage plan?

Prevention of food wastage: By increasing storage capacity, India aims to prevent food grains from being exposed to pest attacks and inclement weather, thereby reducing losses. For instance, the government has cited post-harvest losses in the range of 4-6% for cereals and 5-8% for pulses.

Enhanced food security: The plan would strengthen food security in a country where millions still suffer from hunger, by ensuring a larger portion of the grain production is safely stored and distributed.

Support to farmers: Farmers will benefit from better prices for their produce as the storage facilities will reduce the need for distress sales, allowing farmers to store their grains and sell when prices are favorable.

Cost savings: The local storage facilities will help reduce transportation costs associated with moving food grains to procurement centres and then back from warehouses to fair-price shops.

Employment generation: The construction and operation of these storage facilities could generate local employment, thereby boosting rural economies.

Strengthening PACS: By allowing PACS to diversify their activities, the plan not only bolsters these societies but also increases the incomes of their farmer members. For example, PACS can function as procurement centers, fair price shops, or set up custom hiring centres.

Better management of climate change effects: In view of the anticipated challenges to food production due to climate change, having robust and widespread storage facilities will help the country manage fluctuations in crop yields better.

What are the challenges in establishing the world's largest grain storage plan?

Revival of non-functional PACS: A large number of Primary Agricultural Credit Societies (PACS) in India is currently dysfunctional. For example, only about 63,000 out of 1 lakh PACS are currently operational in India. These societies need to be revived and made operational to maximize the potential of the plan.

Ensuring fair implementation: The plan requires careful implementation across diverse regions with different requirements. For instance, the pilot project in a district with ample resources might suggest a higher storage capacity, but replicating the same model in a resource-scarce region could lead to underutilization or waste of resources.

Financing and convergence of schemes: The plan involves the convergence of several schemes from different ministries. For example, the Agriculture Infrastructure Fund (AIF) from the Ministry of Agriculture might prioritize different objectives than the Pradhan Mantri Kisan Sampada Yojana (PMKSY) from the Ministry of Food Processing Industries. Coordinating these schemes to work towards a common goal of enhancing grain storage might present intricate bureaucratic challenges.

Infrastructure and technology: Setting up modern storage facilities and implementing digital solutions for management might pose a challenge given the rural setting and the potential lack of technological infrastructure in these areas. For instance, a state-of-the-art godown requiring a continuous power supply might face operational issues in an area with frequent power cuts.

Employment and skill development: The plan could generate local employment opportunities, but it may also require training people to operate and manage these advanced storage facilities, posing a challenge in terms of skill development.

What should be done?

Revive and strengthen PACS: Many Primary Agricultural Credit Societies (PACS) are currently dysfunctional. For the plan to be successful, these societies need to be revived and operational.

Develop efficient guidelines: An effective implementation methodology needs to be developed. This should involve robust guidelines that cater to the unique requirements of different regions in the country.

Ensure timely implementation: To reap the benefits of this plan, timely implementation is crucial. This will require a concerted effort from all stakeholders, including the various ministries involved and PACS.

Efficient utilization of funds: Given the vast sum allocated for this plan, efficient utilization of funds is necessary. Mismanagement or misallocation of resources could severely hamper the plan's execution.

Technology integration: Digital tools and technologies should be employed to make these storage facilities more efficient and to streamline the process of monitoring and management.

Address climate change impact: Efforts need to be made to anticipate and mitigate the potential impact of climate change on food grain storage. This could involve incorporating storage technologies that are resistant to extreme weather conditions.

Capacity building: There should be adequate training for the personnel involved in managing these storage facilities, to ensure smooth operation and maintenance.

Sources: The Hindu Businessline ([Article 1](#) and [Article 2](#)), Deccan Herald ([Article 1](#) and [Article 2](#)), Live Mint ([Article 1](#) and [Article 2](#)), [Indian Express](#), [PIB](#) and [Tribune](#)

Syllabus: GS 3: Economic development – Public Distribution System- objectives, functioning, limitations, revamping; issues of buffer stocks and food security;

Recent Development in India-US Relations – Implications and Significance – Explained, pointwise

Introduction

The recent visit of the Indian Prime Minister to the United States marked an important milestone in the strengthening of India-US relations. This occasion, marked by meaningful dialogues and strategic agreements, has profound implications for both nations. The meetings aimed at bolstering economic, strategic, and technological ties, addressing global challenges together, and cementing the partnership in the face of shifting global dynamics.

Highlights of the recent Indian Prime Minister visit to the United States	
Sector	Highlights
Space Technology Partnership for the Future	<ol style="list-style-type: none"> 1. Development of a strategic framework for human spaceflight cooperation by NASA and ISRO by the end of 2023. 2. Delivery of the NASA-ISRO Synthetic Aperture Radar (NISAR) satellite and anticipated launch in 2024. 3. Enhanced commercial collaboration in the space economy due to India's Space Policy – 2023. 4. Signing of the Artemis Accords by India.
Semiconductor and Telecommunications Partnership	<ol style="list-style-type: none"> 1. Signing of an MoU on Semiconductor Supply Chain and Innovation Partnership. 2. Announcement by Micron Technology, Inc., to invest up to \$825 million in a new semiconductor assembly and test facility in India. 3. Proposal by Lam Research to train 60,000 Indian engineers in semiconductor education. 4. Launch of Joint Task Forces on advanced telecommunications, focusing on Open RAN and research and development in 5G/6G technologies.
Quantum Coordination and Advanced AI Research	<ol style="list-style-type: none"> 1. Establishment of an Indo-U.S. Quantum Coordination Mechanism to facilitate collaboration among industry, academia, and government. 2. Launch of a \$2million grant program under the India-U.S Science and Technology Endowment fund for AI and quantum technologies. 3. 35 innovative joint research collaborations in emerging technologies funded by the U.S. National Science Foundation (NSF) and the Indian Department of Science and Technology (DST).
Next Generation Defense Partnership	<ol style="list-style-type: none"> 1. Adoption of a Defense Industrial Cooperation Roadmap to enable co-production of advanced defense systems. 2. Signing of an MoU between General Electric and Hindustan Aeronautics Limited for the manufacture of GE F-414 jet engines in India. 3. Setting up of the India-U.S Defense Acceleration Ecosystem (INDUS-X). 4. India's plans to procure General Atomics MQ-9B HALE UAVs and the establishment of a Comprehensive Global MRO facility in India by General Atomics.
Clean Energy Transition	<ol style="list-style-type: none"> 1. India-U.S. Climate and Clean Energy Agenda 2030 Partnership and Strategic Clean Energy Partnership (SCEP) to deploy clean energy at scale. 2. Creation of the India-U.S New and Emerging Renewable Energy Technologies Action Platform. 3. Collaboration to reduce the cost of green/clean hydrogen under India's National Green Hydrogen Mission and the U.S. Hydrogen Energy Earthshot. 4. Development of joint efforts in carbon capture, utilization, and storage. 5. Large investments in solar panel manufacturing and steel production in the U.S. by Indian companies. 6. Acceleration of the deployment of zero emissions vehicles, electric transportation, and the development of biofuels. 7. Creation of the Global Biofuels Alliance. 8. Innovative investment platforms to lower the cost of capital for greenfield renewable energy and battery storage projects. 9. Enhancement of the bilateral collaboration to secure resilient critical minerals supply chains.
Propelling Global Growth	<ol style="list-style-type: none"> 1. The two nations recognize the potential of Digital Public Infrastructure (DPI) for enabling open and inclusive digital economies and will explore the development of an India-U.S Global Digital Development Partnership. 2. Strengthening of Multilateral Development Banks (MDBs) was discussed, emphasizing their evolution and their financial capacity enhancement to address global challenges. 3. The Indo-Pacific Economic Framework (IPEF) is highlighted as an important pillar for resilience, clean energy transformations, and economic progress.
Deepening Strategic Convergence	<ol style="list-style-type: none"> 1. Mutual support for the reform and strengthening of the UN and India's permanent membership on a reformed UN Security Council. 2. Shared concern over the conflict in Ukraine and commitment to render humanitarian assistance. 3. Recommitment to empowering the Quad for global good and peace in the Indo-Pacific. 4. Resolve to counter global terrorism and condemn violent extremism in all its forms. 5. Commitment to a peaceful, secure, and stable Afghanistan. 6. Long-term strategic partnership between India, Israel, United Arab Emirates, and the United States (I2U2). 7. Shared commitment to an open, secure, and reliable Internet and cooperation on cybersecurity. 8. Mutual affirmation of shared democratic values and a commitment to inclusive development.

What is the Significance of these developments for India and the US?

Strategic Balancing in a Multipolar World Amid Changing Global Dynamics: The recent geopolitical developments like rise of China, decline in multilateral institutions, Russia-Ukraine war and growing influence of emerging economies highlight a constantly evolving world order. The US needs India to counterbalance China in the Indo-Pacific region. Post Galwan clash, India also needs to develop a stronger relationship with the US.

Diversification of partnership: The expansion of partnership across sectors like technology, space, health, digital infrastructure, and energy allows both nations to diversify their collaboration beyond traditional domains. For India, this can mean an infusion of capital, technical know-how, and access to advanced technology. For the US, it means access to India's large market, robust human resources, and a rapidly growing technology sector.

Defense and security cooperation: The defense technology transfer signifies the US's recognition of India as a trusted ally. This will bolster India's self-reliance in defense and enhance its military capabilities. For the US, it strengthens a key partnership in a geopolitically sensitive region.

Strengthening of economic relations: The resolution of trade disputes signifies a move towards more robust and fair economic relations. It allows both countries to protect their economic interests and ensure healthier trade ties, benefiting businesses and consumers in both nations.

Collaboration for global challenges: Increased collaboration in the health sector, especially in the wake of the COVID-19 pandemic, showcases the shared commitment of both countries to address global health challenges. Similarly, cooperation in clean energy reflects their responsibility towards global climate issues.

Enhancement of People-to-People Ties and Role of the Indian Diaspora: Deepening people-to-people ties not only fosters mutual understanding and goodwill, but also strengthens the durability of bilateral relations. The role played by the Indian diaspora in the economic and political life in the US is highlighted by the appointment of more than 130 Indian-Americans to key positions in Biden administration. The community makes up around one percent of the American population.

What are the Implications of these developments for India?

Broadened technological collaboration: The commitment to greater technology sharing in fields like artificial intelligence, quantum computing, and telecommunications has the potential to propel India's tech sector forward. Access to advanced technology and research opportunities can significantly boost India's innovation ecosystem.

Defense and security: The strategic technology transfer in fighter jet engines can enhance India's defense capabilities. This aligns with India's goal to become more self-reliant in defense production and could act as a deterrent against regional threats.

Space exploration: Collaboration in space exploration and technology could give a substantial push to India's space ambitions, helping the country further its scientific research, satellite capabilities, and potentially manned missions.

Energy sector boost: The focus on clean energy collaboration can provide technological and financial support for India's transition to renewable sources. This is crucial for India's energy security and its commitments towards climate change mitigation.

Economic opportunities: The resolution of previous trade disputes with the US means increased access to one of the world's largest markets. This could result in higher exports, increased foreign investments, and overall economic growth for India.

Health sector advancement: The collaboration in the health sector, especially regarding COVID-19 response and the distribution of vaccines, will help improve India's health

infrastructure. This is likely to contribute to better health outcomes for the Indian population in the long run.

Strengthening of international stature: The recent developments signal recognition of India as a significant global player by the US. This can enhance India's diplomatic influence and bargaining power on the international stage.

What are the challenges in India-US relationship?

Read here: [Recalibrating the India-US relationship](#)

Defense dependence on Russia: India's historical and ongoing dependence on Russian military supplies, such as the S-400 missile system, conflicts with US sanctions on Russia. This issue complicates India-US relations and could hinder deeper strategic collaboration.

Varied stance on global conflicts: India and the US have different perspectives on global conflicts. For instance, India's abstention from condemning Russia over the Ukraine crisis and its balanced approach towards the Israel-Palestine conflict contrasts with the US's positions.

Human Rights and Democratic Values: There are elements in the US who keep on raising the issues of freedom of expression, freedom of press, protection of ethnic minorities, democracy, etc. in India. During the recent official visit of the Indian Prime Minister, more than 70 American lawmakers wrote to U.S. President Joe Biden asking him to raise concerns about democratic norms and human rights in India.

Trade and economic issues: Despite growing trade, issues persist, such as Indian protectionism and restrictions on market access for certain US goods. Further, the contentious subject of H1B visas, crucial for Indian professionals, remains unresolved.

Uncertainty about US policy: Indian policymakers express concern about policy shifts in the US due to domestic political changes. Such uncertainty, especially in areas like immigration and foreign policy, can make long-term planning difficult for India.

Handling China: While both countries have concerns about China's rise, they differ in their approach. India maintains a nuanced stance towards China due to its geographical proximity and complex historical relations. This can sometimes lead to divergences with the US approach.

Climate change policy: While both nations are working towards sustainable development and climate change mitigation, the pace and extent of their commitments differ. India, a developing country, emphasizes the principle of 'common but differentiated responsibilities' and seeks more support from developed countries like the US.

What should be the course of action for India?

Strategic Diplomacy and Stance on Global Issues: Amid the complexities of a multipolar world, India should uphold its principles of strategic autonomy. This means nurturing its burgeoning relationship with the US, while also maintaining balanced relations with other global powers such as Russia and China. Concurrently, India must articulate its stance on global conflicts such as the Russia-Ukraine issue, ensuring respect for international norms without compromising its national interests. In doing so, India affirms its position as a responsible global player capable of contributing to peaceful conflict resolution.

Trade disputes resolution: India must continue working on resolving trade disputes with the U.S., ensuring the negotiation of fair and balanced trade agreements. Enhancing market access, addressing intellectual property rights issues, and balancing trade deficits should be priorities.

Defense sector: India should carry forward its cooperation with the U.S. in the defense sector, focusing on technology transfer and joint production. This will help enhance India's defense capabilities, contributing to national security.

Managing regional politics: India needs to carefully manage its regional politics, especially with respect to the Afghanistan situation. It should actively engage with the US and other stakeholders to ensure that its interests in the region are protected.

Role in the Quad: India should utilize the Quad platform for promoting peace and stability in the Indo-Pacific region, countering China's aggressive behavior, and addressing shared global challenges such as climate change and the COVID-19 pandemic.

Stance on global issues: India should carefully articulate its stance on global issues such as the Russia-Ukraine conflict, respecting international laws and norms while ensuring its national interests are not compromised. As a responsible global player, India should also actively contribute to finding peaceful solutions to these conflicts.

India-Egypt Relations – Recent Developments -Explained, pointwise

Introduction

India-Egypt relations have taken significant strides recently, especially following Indian Prime Minister visit to Egypt in June 2023. These engagements underline India's focus on deepening ties with this key Middle Eastern nation. Egypt's geopolitical significance and India's rising global stature provide a backdrop for this growing partnership. From enhanced defence collaboration to trade agreements, these strategic dialogues are setting a positive direction for the future of India-Egypt relations.

Recent Developments and their importance

Strategic Partnership Agreement: Both nations elevated their bilateral relationship to a strategic partnership, with an agreement signed to formalize this status. This strategic partnership focuses on four main areas: politics, defence and security; economic engagement; academic and scientific exchanges; and cultural and people-to-people contacts.

The "India Unit" in the Egyptian government: Egypt constituted an "India unit" within his government. This unit consists of seven cabinet ministers who will work alongside Prime Minister Mostafa Madbouly to strengthen the India-Egypt relationship.

Defence trade and cooperation: India has shown interest in expanding its defense trade with Egypt, with a focus on promoting its domestic defense production. Egypt has expressed interest in the Tejas Light Combat Aircraft, an Indian-made fighter jet.

Economic engagement and trade opportunities: India and Egypt are exploring opportunities in the Suez Canal Economic Zone (SCZONE), which offers easy access to markets in Europe, Africa, and the Gulf. This holds potential for the 'Made by India for the World' export-oriented program. Several Indian companies already use Egypt as a manufacturing base.

G20 invitation: India has invited Egypt as a guest country for the G20, recognizing Egypt's significant influence in the Arab world and its strategic location. Egypt's participation in the G20 is seen as beneficial due to its representation of developing countries' aspirations.

Award recognition for PM Modi: PM Narendra Modi was conferred with the Order of the Nile, Egypt's highest award, signifying the importance of India-Egypt ties and acknowledging India's stature as a rising global power.

Historical connections: Indian PM visited the Heliopolis War Memorial, which commemorates the 3,799 Indian soldiers who sacrificed their lives in various battles in Egypt during the First World War. He had also visited the 11th-century Al-Hakim Mosque, restored with the help of the Dawoodi Bohra community in India

A Brief Overview of India-Egypt Relations

Ancient connections: Both have a long history of contact dating back to the time of Ashoka. Fine Indian muslin, a type of cotton fabric was also used for wrapping mummies.

Mahatma Gandhi and Egypt: Mahatma Gandhi, philosophy of nonviolence and civil disobedience inspired several Egyptian nationalists in their own fight for independence. There was a mutual admiration between Gandhi and Egypt's nationalist leader Saad Zaghloul, and this connection had a profound impact on the bilateral ties of the two nations.

Post-Independence relations: After gaining independence, diplomatic relations were established in 1947, and a friendship treaty was signed in 1955. India also condemned the attack on Egypt during the 1956 Suez Crisis and tried to mediate. Both adopted a non-aligned foreign policy, and they co-founded the Non-Alignment Movement (1961) during the Cold War era. Their shared commitment to anti-colonialism and anti-imperialism brought them closer. This led to strong diplomatic relations, with the likes of Jawaharlal Nehru and Gamal Abdel Nasser fostering these ties.

Modern-Day relations: In the contemporary era, India and Egypt have nurtured their strategic partnership, symbolized by high-level diplomatic visits, such as the Indian Prime Minister's tour to Egypt in June 2023. However, despite these promising diplomatic endeavours, their economic ties have not yet reached their full potential, with a decline in trade by 17% amounting to \$6,061 million in 2022-23. This points towards the need for diversifying the economic relationship beyond oil and petroleum.

Read more: [India-Egypt Relationship – Explained, pointwise](#)

What is the significance of India Egypt Relations?

Strategic importance: Egypt's geopolitical position, straddling Asia and Africa, and its control of the Suez Canal, a key global commercial artery, gives it significant strategic value. This makes Egypt an important partner for India in the region.

Counter-Terrorism cooperation: There is strong convergence between India and Egypt in the fight against religious extremism and terrorism. Given the global challenge posed by these issues, cooperation in this area is significant for both nations.

Economic potential: Trade relations between India and Egypt are expanding, with India now among Egypt's top ten trading partners. Further, the potential for India to expand its presence in the Suez Canal Economic Zone (SCZONE) offers exciting opportunities for growing economic relations. Egypt holds huge potential for the domestic industry in various sectors like agri products, steel items and light vehicles.

Cultural and historical Ties: India and Egypt share deep cultural and historical ties that date back to ancient times. These ties play a significant role in fostering mutual understanding and people-to-people connections, enhancing the overall relationship.

Regional influence: Egypt, as the largest country in the Arab world and home to the Arab League's headquarters, exerts considerable influence in the Middle East and North Africa. An enhanced relationship with Egypt can aid India's engagement with the broader region.

Defence cooperation: The bilateral defence cooperation has seen a fair bit of activity with joint exercises and high-level visits. As India shifts its focus towards defence exports, Egypt could be a potentially significant market.

Education and knowledge sharing: The presence of an Indian Centre for Excellence in IT at Cairo's prestigious Al Azhar University is indicative of the potential for further educational collaboration and knowledge sharing between the two nations.

What are the challenges of India Egypt Relations?

Read here: [India and Egypt relationship](#)

Domestic economic instability. Egypt Government is battling high inflation of 21%, which has resulted in historically high prices of commodities and daily-use items. Its foreign debt is over **\$163 billion (43% of the GDP)** and its net foreign assets are **minus \$24 billion**. Prolonged economic instability may lead to mass discontent and movement similar to the 2011 revolution.

Political differences: There have been differences on key international issues. For instance, Egypt has not always shared India's position on the United Nations Security Council (UNSC) reforms.

Regional instability: Egypt's geographical location in North Africa places it in proximity to several unstable regions and conflict zones, including Libya and Sudan. This instability can indirectly impact India-Egypt relations by creating uncertainties in areas of mutual interest such as regional security and economic investment.

Navigating regional politics: Both India and Egypt have complex regional relationships to navigate. Balancing these relationships, particularly as they pertain to issues such as Kashmir for India or the Israeli-Palestinian conflict for Egypt, could pose challenges.

China's growing influence: China's growing economic presence in Africa, including Egypt, is another significant challenge. China's Belt and Road Initiative has been making significant inroads in Africa and this has increased China's influence in the region. Balancing relations with China while trying to increase India's economic engagement in Egypt and the broader African region could be a tricky diplomatic challenge for India.

Competition with other powers: Apart from China, there are other global and regional powers also engaging actively with Egypt, including the United States, European Union countries, Russia, and Gulf states. Managing the relationship with Egypt in the face of competition from these powers can pose diplomatic challenges for India.

What should be the future path?

Enhanced bilateral trade and investment: Both nations should aim to increase trade volumes and investment flows. India should consider negotiating a free trade agreement (FTA) with Egypt. India's expertise in areas such as IT, healthcare, and pharmaceuticals could be leveraged in Egypt. At the same time, opportunities should be explored for Indian investments in Egypt.

Strengthening defence cooperation: As the partnership has shown growth in defence and security sectors, it would be beneficial to keep this momentum going. Joint military exercises, information sharing, and collaboration on counter-terrorism efforts can be prioritized.

Cultural and educational exchanges: Increased cultural exchanges can foster greater understanding between the two peoples, particularly among the youth. India could offer more scholarships for Egyptian students, while Egypt could facilitate deeper understanding of the Arab world for Indian students and scholars.

Cooperation on regional and global issues: As significant players in their respective regions and at the global stage, India and Egypt can seek to align their stances on key issues more closely, whether it be climate change, UN reforms, or regional stability.

Managing third-party relations: Given the interest of other powers like China, the US, and Russia in Egypt, India should strive for a balanced approach that respects Egypt's relationships with these countries, while clearly articulating its own strategic interests.

Sources: –

Sources: [The Hindu \(Article 1 and Article 2\)](#), [The Indian Express \(Article 1 and Article 2\)](#), [Livemint](#), [Daily Pioneer](#), [Economic Times](#) and [Hindustan Times](#)

Financing the Green transition: initiative and challenges – Explained, pointwise**Introduction**

“Financing the Green Transition” is the cornerstone of the global shift towards sustainability. At the Paris Finance Summit, world leaders addressed the financial disparities impeding this transition, particularly for developing nations. Key initiatives included unlocking additional lending capacity and introducing taxes for polluters. Nonetheless, numerous challenges remain – mobilizing sufficient funds, aligning policies, and enhancing public awareness. Especially, in developing countries like India, issues like insufficient financing, lack of technology, and regulatory bottlenecks further complicate the journey.

What is green transition?

The green transition denotes a shift towards economically sustainable growth and an economy that is not based on fossil fuels or excessive natural resource consumption. Low-carbon solutions that encourage the circular economy and biodiversity are essential for a sustainable economy.

The green transition might involve investments in clean energy production, circular economy solutions, hydrogen technology, and the introduction of various new services and operating models for businesses, the industrial industry, and municipalities. This bundle includes low-carbon roadmaps and sustainability initiatives developed by several sectors.

The key elements of the green transition include – shift to renewable energy, energy efficiency, sustainable transportation, sustainable agriculture and forestry, circular economy, and green infrastructure.

What is the need for green transition?

Escalating impacts of climate change: The escalating impacts of climate change, as seen in the increasing number and severity of heatwaves, storms, floods, and wildfires worldwide, necessitate a green transition. These changes, highlighted in the Intergovernmental Panel on Climate Change (IPCC) reports, pose serious threats to human lives, livelihoods, and infrastructures.

Fossil fuel depletion: The finite nature of fossil fuels and their impending depletion necessitate the shift towards renewable energy sources. Our current dependence on these fuels is unsustainable, and a transition to renewables is essential to secure our energy future.

Economic vulnerability: The “New Climate Economy Report” from the Global Commission on the Economy and Climate highlights the economies vulnerable to volatile fossil fuel prices and the environmental costs of pollution.

Public health crisis: Air pollution, primarily caused by burning fossil fuels, is causing a public health crisis, with millions of premature deaths each year. The World Health Organization reports underline the urgent need for cleaner, greener energy to improve air quality and protect public health.

Loss of biodiversity: The alarming rate of biodiversity loss, as highlighted in the “Global Assessment Report on Biodiversity and Ecosystem Services”, demands an immediate shift towards more sustainable practices. Green transition is needed to halt habitat destruction and protect the myriad species that support ecosystem health and human survival.

What are the various initiatives taken to finance the green transition?**Initiative taken at international level**

The recent Paris Finance Summit focused on global strategies for financing the green transition. Here are some of the key initiatives

Multilateral development banks (MDBs): MDBs are expected to play a significant role in addressing financial systems reform, addressing transboundary challenges, and increasing their resource allocation for developing countries. An additional lending capacity of \$200 billion was

announced for emerging economies at the summit. Apart from this, the World Bank announced disaster clauses for debt deals, that would suspend debt payment in the case of extreme weather events.

Special Drawing Rights (SDRs): The International Monetary Fund (IMF) announced that the goal of 100 billion SDRs for vulnerable countries had been met. ‘Recycling’ SDRs from rich countries whose central banks do not need the cushioning, to poor countries who need them or MDBs who can channel them, has been proposed.

Just energy transition partnerships (JETPs): A new 2.5 billion Euro JETP deal was announced for Senegal, with a consortium of countries comprising of Germany, France, Canada, the European Union, the United Kingdom, with the goal of increasing the share of renewable energy in installed capacity to 40 per cent of Senegal’s electricity mix by 2030.

Debt restructuring and relief: Calls were made for a significant reduction in debt levels in developing countries, particularly debt cancellations for least developed countries. For instance, Zambia reached a \$6.3 billion debt restructuring deal in debt owed to other governments including China.

Polluter taxes: There was significant support for the imposition of taxes on polluting industries such as shipping. A financial transactions tax was also supported by several attendees.

Carbon markets: The European Union unveiled a call to action on ‘Paris Aligned Carbon Markets’ with a goal of covering at least 60% of global emissions with carbon pricing mechanisms and allocating a proportion of revenues to climate finance.

Climate finance goal: It was suggested that the long overdue \$100 billion climate finance goal would be achieved this year.

Initiative taken by India

National Bank for Financing Infrastructure and Development (NaBFID): It is instrumental in addressing India’s infrastructure needs, notably through the National Monetisation Pipeline (NMP) and the National Infrastructure Pipeline (NIP). Emphasizing sustainable and climate-resilient development, NaBFID concentrates on projects that foster inclusive growth and sustainability.

Net-zero targets: India, as a developing nation with growing energy demands, has set a goal of achieving net-zero emissions by 2070. This ambitious target involves balancing the amount of greenhouse gases produced with the amount removed from the atmosphere, promoting sustainability and climate resilience.

Green growth as a budget priority: In a recent budget, the government identified “Green Growth” as one of its seven key priorities, emphasizing its commitment to promoting sustainable development and allocating resources accordingly.

FDI in renewable energy: To meet the INR 1.5-2 trillion annual investment requirement in renewable energy, the Indian government has authorized 100% annual Foreign Direct Investment (FDI) for renewable power generation and distribution projects.

Introduction of “Green Deposits”: The Reserve Bank of India has introduced guidelines for banks and Non-Bank Financial Companies (NBFCs) to accept “green deposits”. These funds are allocated towards environmentally sustainable projects, such as energy efficiency, clean transportation, climate change adaptation, and sustainable water and waste management.

Business Responsibility and Sustainability Reporting (BRSR): SEBI has mandated the top 1000 listed companies in India to adhere to the BRSR framework, promoting transparency and accountability in their sustainable business practices. This framework helps in incentivizing green financing and allowing banks to estimate their climate-related exposure.

ESG category of mutual funds: SEBI has introduced an Environment, Social, and Governance (ESG) category of mutual funds. The regulation allows asset management companies to launch more than one ESG fund, promoting environmentally conscious investing.

Growth of Green, Social, Sustainability, and Sustainability-linked (GSSS) bonds: There has been a gradual expansion in the GSSS bonds market. Fitch ratings reports that GSSS-linked debt bonds accounted for US\$ 20 billion in the Indian debt market as of January 2023, reflecting increasing private sector investment in green projects.

Read here: [Energy Transition: Challenges and Solutions – Explained, pointwise](#)

What are the challenges to financing green transitions?

Lack of robust green finance regulation: Without clear regulations in place, stakeholders, who rely heavily on conventional financial practices, may be hesitant to invest in green finance.

Inconsistent policy and regulatory environment: The absence of coordinated state and central government programmes can discourage investors.

Financial health of distribution companies and utilities: Many of these companies are unable to make timely payments to renewable energy developers, which hampers the growth of the sector.

Mismatch between investment timelines: Long-term green investments do not align with the short-term horizons of investors.

Disproportionate investment in sectors and technologies: Certain sectors, such as wind energy, attract less international finance than others, like solar photovoltaics.

Lack of consistent data and reporting systems: This makes it difficult to track finance flows, although the emergence of new databases may enable more efficient reporting and tracking.

Read more: [Clean Energy Transition of States and their challenges – Explained, pointwise](#)

What can be done?

Encouraging private investment: Regulations should be friendly towards private investors and businesses who are willing to invest in renewable energy projects. Reducing bureaucratic hurdles and ensuring a stable regulatory environment will also encourage more private investment.

Leveraging international funds and partnerships: India could access international climate finance options such as the Green Climate Fund (GCF) and the Global Environment Facility (GEF). Bilateral and multilateral partnerships with developed countries can also provide financial and technical assistance.

Improving financial mechanisms: Existing financial mechanisms need to be improved to increase funding for green initiatives. This could include green bonds, carbon pricing, and other innovative financing mechanisms. The central and state governments, along with financial institutions, can also provide low-interest loans and grants for green projects.

Enhancing technological capabilities: Upgrading India's technological capabilities is key to making the green transition cost-effective. This would involve investing in research and development (R&D), technology transfer, and capacity building. Collaborating with international partners can help access cutting-edge technologies.

Fostering policy consistency: Policy inconsistency can deter investors and slow down progress. Therefore, there should be consistency and predictability in India's energy and climate policies.

Promoting public awareness and engagement: Raising public awareness about the importance of green transition and creating a societal demand for sustainable products can help incentivize businesses to invest in green technologies and practices.

Sources:

Sources: Down to Earth ([Article 1](#) and [Article 2](#)), [The Hindu Businessline](#), [Politico](#) and [Business Insider](#)

Volatility in Tomato, Onion and Potato (TOP) prices and its implications for India – Explained, pointwise

Introduction

Addressing price volatility in the Tomato, Onion, and Potato (TOP) commodities has become a pressing issue in India. These essential food items experience significant price fluctuations throughout the year due to factors like climate change, monsoons, pest attacks, and supply-demand dynamics. This instability not only has a substantial impact on the country's Consumer Price Index, contributing to inflation, but also affects the livelihoods of farmers and affordability for consumers. Coupled with the imminent threat of El Nino and inadequate cold storage infrastructure, the challenge compounds further. As these fluctuations ripple through India's economy and society, managing TOP price volatility has become a crucial task for policymakers.

What are the reasons for volatility in Tomato, Onion, and Potato (TOP) prices?

Seasonality: TOP crops have distinct harvest seasons, which can create price fluctuations based on the availability of the crops. For example, potato crops witness an increase in price volatility between November to January as prices go up in October-November and then decline in December-January as new crops arrive at the market. Similarly, onions prices being lower during April-May and higher during September-November.

Regional concentration of production: Most of the TOP production is concentrated in a few states. Onion, for instance, is mainly sourced from Maharashtra, Madhya Pradesh, and Karnataka. Any changes in production, market dynamics, or weather events in these regions can drastically affect prices across the country.

Production cycle uncertainty: Negative uncertainty regarding crop yield or damage due to weather events, pests, or diseases can result in significant price volatility. For instance, any damage to the Kharif onion crop due to an uncertain monsoon increases the burden of supply on the stored Rabi crop, causing price spikes.

Perishability and storage constraints: The perishable nature of these vegetables, particularly tomatoes, contributes to their price volatility. Limited storage capacities and inadequate infrastructure also exacerbate price fluctuations.

Demand inelasticity: Demand for onions, for example, is price inelastic, meaning that even a minor shortfall in production can lead to significant price increases.

What are the effects of volatility in Tomato, Onion, and Potato (TOP) prices on farmers and consumers?

Impacts on farmers:

Uncertain income: High volatility in prices leads to uncertainty in income for farmers. If prices fall drastically after harvest, they may incur losses despite a good yield. This can discourage farmers from planting these crops in the subsequent season, causing supply shortages and even higher price volatility. For example, the rate of table potatoes has crashed between 60 to 76 per cent this year. Against the wholesale price of Rs 10 per kg last year, farmers in Punjab were struggling to get even Rs 4 per kg this year.

Cyclical phenomenon: The price-production cobweb phenomenon exemplified by tomatoes highlights the challenges farmers face. For instance, low price realization in 2021 led farmers to plant less area under tomatoes and shift towards other crops like soy, cotton, and corn. This

resulted in supply shortages and higher prices in the following months, showing the cyclical impact of price volatility on farmers' decisions and their income.

Increased vulnerability: Farmers are left vulnerable to the whims of the market and weather conditions. This uncertainty can lead to distress, especially among small and marginal farmers who have limited capacity to absorb financial shocks. Like, due to abundant production, onion prices crashed and farmers in Maharashtra have either been compelled to sell the onions at Rs 1 per kg or throw them on roads.

Impacts on consumers:

Budgeting difficulties: Price volatility of TOP commodities makes budgeting difficult for consumers, especially those in lower-income brackets. Sudden price hikes can put significant strain on household budgets.

Inflation: Despite their relatively low weightage in the overall index, the substantial contribution of TOP to overall CPI in certain months can negatively affect the financial stability of farmers. For example, the weightage of vegetables in the overall index is only 6.04 with the weightage of TOP being 2.20. Even with such a low weightage, the contribution of TOP to the overall CPI has been higher in many months and in negative territory in some months. The share of TOP in CPI was 29% in the month of January 2020 and -18% in the month of September 2021”

Access and affordability: During periods of high prices, access to these staple food items can become a problem for the poorer sections of society. Even with temporary price relief measures, some consumers may find it hard to afford these essential commodities.

Impact on other commodity prices: High inflation in TOP prices can impact other commodity prices. For example, high potato prices might impact the prices of snacks or processed foods that use potatoes as a primary ingredient. This can lead to a broader inflationary trend, affecting the prices of multiple goods in the consumer basket beyond just the TOP commodities.

Global implications: Fluctuations in the prices of TOP can have an impact on global markets as well. India is one of the largest producers and consumers of these commodities. So, when prices rise domestically, it can create supply gaps internationally. For example, during periods of high onion prices in India, countries that rely on Indian exports like Bangladesh, UAE, Nepal, Netherlands, UK could experience price hikes and supply shortages.

Read more: [Extension of Operation Greens from TOP to Total](#)

What are the initiatives taken by the government to address volatility in Tomato, Onion, and Potato (TOP) prices?

Operation Greens (OG): The Ministry of Food Processing Industries provides a transportation and storage subsidy of 50% for notified fruits and vegetables (including TOP crops) during periods of excess supply in the harvest season. This scheme helps reduce waste, manage supply, and stabilize prices.

Market Intelligence and Early Warning System (MIEWS): Through the MIEWS portal, the government tracks and monitors the price movements of TOP commodities. This information enables the government to take quick actions in response to potential market disruptions.

National Agriculture Cooperative Marketing Federation of India (NAFED): NAFED assists in controlling price volatility by gathering, analyzing, and circulating information about the supply, demand, and pricing of agricultural produce.

Export Bans: When the domestic prices of TOP commodities rise significantly due to shortages, the government often puts a temporary ban on their exports. This is done to prevent a domestic supply crunch and to curb further price increases. This move ensures that domestic consumers have access to these commodities at affordable prices.

Read more: [Market Intelligence and Early Warning System\(MIEWS\) Portal](#)

What should be done to address volatility in Tomato, Onion, and Potato (TOP) prices?

Buffer stocking and cold storage facilities: There needs to be more investment in storage facilities to maintain a buffer stock of TOP, particularly potatoes and onions, which can be stored effectively. However, this approach might be less effective for tomatoes due to their shorter shelf life.

Frequent government imposition of stocking limits on traders under the Essential Commodities Act may discourage private investment in cold storages. Therefore, this Act should be reconsidered, or at least applied more judiciously, to ensure that traders can maintain buffer stocks without fear of sudden regulatory shifts.

Increase processing capacities: With storage posing a challenge for certain vegetables like tomatoes, it's important to increase processing capacities. This means transforming raw products into more easily storable forms like purees, powders, or dehydrated pieces. The government should consider reducing the GST for these processed products to encourage their use and make them more affordable.

To promote the use of these processed goods, the government should partner with industry organizations to conduct awareness campaigns, like those done for other processed foods.

Encourage direct buying and contract farming: The government can promote direct buying by organized retailers from farmer producer organizations (FPOs) through contract farming, bypassing the traditional mandi system. This can help increase the share of the consumer's rupee going to the farmers, much like in the case of the dairy industry.

Reform Agricultural Produce Market Committee (APMC) mandis: There is a need for significant reform in the APMC mandis. They suffer from infrastructure deficiencies and need an overhaul. The government can undertake these reforms in a public-private partnership model, reducing commissions, encouraging contract farming, and setting up private mandis for better efficiency.

Sources: The Times of India ([Article 1](#), [Article 2](#)), Indian Express ([Article1](#), [Article2](#)), [India Today](#), [The Economic Times](#), [Financial Express](#), [The Hindu](#), [NABARD](#), [APEDA](#)

Syllabus: GS 3: Economic development – marketing of agricultural produce and issues and related constraints.

Uniform Civil Code: Arguments for and against – Explained, pointwise**Introduction**

The Uniform Civil Code (UCC), envisioned **by Article 44 of the Indian Constitution**, proposes a common legal framework for personal laws for all Indian citizens, irrespective of religion. The goal is to achieve national integration, ensure gender equality, and uphold constitutional values. The **22nd Law Commission of India** is currently reassessing this subject, inviting public and institutional opinions. However, realizing the goal of UCC faces numerous challenges, as it involves striking a balance between the protection of religious rights, cultural diversity, and political sensitivities with the objective of legal uniformity. This makes the UCC a significant topic of national discussion.

What is the UCC?

The UCC is a proposition to replace the personal laws, which are based on the scriptures and customs of different religious communities in India, with a common set of laws governing every citizen. These laws pertain to **personal matters like marriage, divorce, inheritance, adoption, and maintenance**.

The concept of UCC is enshrined in **Article 44** of the Indian Constitution, which **falls under the Directive Principles of State Policy**. It states, “The State shall endeavor to secure for the citizens a uniform civil code throughout the territory of India.”

As of the present day (June 2023), the UCC has not been implemented in India, except in the state of Goa where a common family law, known as the **Goa Civil Code or Goa Family Law**, applies to all its citizens irrespective of religion.

What is the Judicial view on UCC?

Read here: [The Debate on Uniform Civil Code – Explained, pointwise](#)

What arguments do proponents give in support of implementing UCC?

Constitutional mandate: Article 44 of the Constitution of India, which falls under the Directive Principles of State Policy, clearly states that “**The State shall endeavor to secure for the citizens a Uniform Civil Code throughout the territory of India.**” Proponents argue that it is a constitutional mandate to work towards a UCC, thereby ensuring equality before the law.

Promotion of gender justice and equality: Many supporters of the UCC point to discriminatory practices in various religious personal laws, especially those related to marriage, divorce, and inheritance. They argue that a UCC can help eradicate such disparities. For example, **the Hindu Succession Act, 1956 was amended in 2005 to give daughters equal inheritance rights with sons**, but many argue that similar reforms have not been adopted universally across all personal laws.

Strengthening of national integration: Proponents of the UCC contend that it would foster a sense of unity and promote national integration by eliminating the legal pluralism currently seen in personal laws. They argue that the UCC will affirm the notion of “**one nation, one law,**” thereby reinforcing the idea of a unified Indian identity amidst its diverse population.

Evolution of progressive jurisprudence: Supporters often cite the historic **Shah Bano case of 1985** to argue for a UCC. In this case, the Supreme Court of India ruled in favor of Shah Bano, a divorced Muslim woman, granting her right to maintenance from her ex-husband under **Section 125 of the Indian Penal Code, a secular law**. However, the verdict was highly controversial and led to the enactment of the **Muslim Women (Protection of Rights on Divorce) Act, 1986** which diluted the judgement. This case is often used to highlight the need for a UCC to ensure justice and equality for women across religions.

Precedent of Goa’s Civil Code: Proponents of the UCC often cite the example of Goa, which has been following **the Portuguese Civil Code 1867, which is also called Uniform Civil Code**. It is the set of civil laws that governs all Goans, irrespective of religion. This is often put forth as a successful example of the implementation of a form of UCC.

What are the critics’ arguments against the uniform civil code?

Violation of religious freedom: Critics argue that the UCC may infringe upon the freedom to practice the religion of one’s choice, which allows religious communities to follow their own personal laws. For example, **Article 25** of the Indian constitution gives every religious group the right to manage its own affairs, and **Article 29** allows them to conserve their distinct culture.

Threat to cultural diversity: Another argument against the UCC is the threat it could pose to India’s rich cultural diversity. Critics argue that individual personal laws reflect the distinct customs and traditions of different religious communities, and a uniform code could undermine this diversity. They contend that the UCC could lead to **a homogenization of laws**, which would not be in keeping with India’s multicultural ethos.

Existing secular laws: Critics also question the need for a UCC, pointing out that there are already secular laws applicable to all citizens, irrespective of religion, in many matters, such as **Section 125 of the Criminal Procedure Code, which provides for maintenance, and laws relating to domestic violence**.

Imposition of 'Hinduised' Code: Some critics suggest that the UCC might impose a 'Hinduised' code on all communities. For example, a UCC could include provisions for family disputes on property inheritance, which may be in line with Hindu customs and will legally force other communities to follow the same.

Diversity in personal laws: The opposition argues that even codified civil laws and criminal laws like the **Code of Criminal Procedure (CrPC) and the Indian Penal Code (IPC)** don't follow 'one nation, one law'. For example, **the law of anticipatory bail differs from one state to another.**

Personal laws placed in concurrent list: Some constitutional law experts argue that perhaps the framers did not intend total uniformity, which is why personal laws were placed in **Entry 5 of the Concurrent List**, with the power to legislate being given to the Parliament as well as the State Assemblies.

Read more: [Code red: The push for a uniform civil code should not become a divisive tool](#)

What should be done?

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

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

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

Sources: [Business standard](#), Indian express ([Article 1](#), [Article 2](#)), [The Economic Times](#)