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## MESSAGE FROM DR. KHAN ....

**Dear Students,**

In my interactions with students, I often encounter individuals who express extreme exhaustion and doubt due to their perceived lack of success in their endeavours. They question their abilities and contemplate giving up, believing they may not be cut out for their chosen path. **However, I firmly believe that the difference between achieving success and falling short lies in one's willingness to persist.** As the famous author **J.K. Rowling** once said, "It is impossible to live without failing at something unless you live so cautiously that you might as well not have lived at all."

**As the late American author and motivational speaker, Zig Ziglar, famously said, "Success is not a destination, it's a journey." The grit! It only takes one more attempt, a few additional marks, or a slight adjustment to turn things around.** Trust in the path you have chosen, stay focused, and maintain belief in your abilities. Even if initial attempts yield unfavorable results, remember that remarkable success can emerge in subsequent endeavors.

Even if initial attempts yield unfavorable results, remember that remarkable success can emerge in subsequent endeavors. Numerous students have astonished both themselves and those around them with their remarkable performances in later attempts. For instance, **Michael Jordan** was cut from his high school basketball team but went on to become one of the greatest athletes of all time. **His journey exemplifies that early setbacks do not define ultimate success.**

When faced with setbacks, it is common to question your abilities and the efficacy of your approach. However, staying steadfast and maintaining trust in yourself and your methodology is essential. Recognize that success can be achieved even if it eludes you initially. As **Albert Schweitzer** aptly stated, **"Success is not the key to happiness. Happiness is the key to success. If you love what you are doing, you will be successful."** Achievement is doing a thing that you have always hated to do.

Consider the possibility that your journey is a test of your determination and commitment. Someone or something may be examining your resolve and dedication to invest the best years of your life into your chosen goal.

Believe in yourself and your abilities; it is extremely vital when you are in search of a better version of yourself. **Refuse to succumb to self-doubt. Instead, embrace the belief that success is within reach.** There is nothing more insulting than underestimating your own potential. As **Helen Keller** once said, **"Optimism is the faith that leads to achievement; nothing can be done without hope."**

Maintain unwavering faith in yourself and your journey. Understand that success may not come immediately, but with persistence and self-belief, you are capable of attaining your desired outcome. **If you give up everything for one thing, the one thing will never disappoint you.**

**Assess your approach and methodology critically.** If necessary, seek guidance to identify areas for improvement and address any shortcomings. This proactive approach will bring you closer to success.

In your pursuit of success, it is crucial to nurture unwavering belief in yourself and your abilities. Remember that one additional attempt or a minor adjustment can be the difference between falling short or achieving your goals. Trust the path you have chosen, remain focused, and banish doubts that may cloud your determination.

Through persistence, self-reflection, and addressing any shortcomings, you will inch closer to success. **Trust in your abilities, trust in your methodology, and most importantly, trust in yourself.** Burn your towel before you throw your hat in the ring. As **Babe Ruth** said, **"It's hard to beat a person who never gives up."**

**My best wishes are always with you.  
Stay Blessed!**

---

**GS CONNECT**

It gives us immense pleasure to present an innovative approach to mastering current affairs. Current is a passing wind and diverse issues happen at the same time. It is to an extent chaotic. Newspapers, magazines, and various other sources report the chaos per se. With our experience of current affairs, we have tried to give "the current" a medium to travel. It is the syllabus of the UPSC with its components that are the medium through which the "Current is Passed" to the readers. **Ever since the new syllabus of the UPSC came into existence, the current has been gaining significance both at prelims as well as mains examination.** This book is meant to cover current affairs and related questions arising from those events. We have not only covered the current events for their factual contents but also presented them in such a way that any question asked from that topic gets covered. Moreover, topics are also **"peppered"** with the relevant facts/key concepts that are related to the theme.

It is a collection covering myriad sources yet in a manageable size. To use this book, we recommend you to, master the components of the General Studies (GS) syllabus as broken into rows and columns (**provided on the subsequent page**). Each cell comprising the portion of GS becomes the connection for the current and every news subsequently covered guides the reader to the address of the syllabus. It is logical to expect that the same issue may be connected to more than one topic of the syllabus. Further, the news also has some additional vistas opened for the readers by adding a box with the title **"PEPPER IT WITH"** where we expect the students to build further around the theme. We are also trying to reach the remotest part of the country with our spirit and zeal of **"Mains Answer Writing"**, which has been admired by students, CSE rank holders, and other scholars. Continuing in line with the effort, we have started **programs like KTP Mains Test Series, Destinaire, Navigator, NEEV, AWSDP plus, KOL, DL& MP, Advance Foundation Course, Weekend Courses as well as Optional Courses (PSIR, Sociology, History, and Geography).**

Additionally, this month, we are introducing a new section called **"SNAPSHOTS,"** offering themes **inspired by** four monthly magazines to provide comprehensive coverage of various topics. We are also providing a **complimentary full-length test** with 100 objective questions. **Scan the QR code** to revise the previous month's current affairs and test yourself.

When it comes to evaluation, we are all together at a different level. We are also reaching every nook and corner with this expertise for the aspirants of CSE. Now you can write a Mains Answer and get it evaluated by our Expert Team and can get Feedback. Drop a mail at **evaluation@ksgindia.com** to register yourself in our race to perfection. Don't wait, it's your golden chance to crack this exam and fulfill your passionate dream.

**Team KSG**

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1	Indian Culture-Art Forms, Literature and Architecture from ancient to modern times.	Indian constitution- Amendments, acts and bills.	Various measures to boost Indian economy- planning, policies, management	Ethical issues related to family society, education, Corruption etc.	
2	Indian History significant events, personalities, issues and the Freedom Struggle.	Legislative, executive and judicial processes.	Government budgeting and issues related to budget.	Ethics in public and private administration	
3	Post independence issues, National boundary and disputes.	Constitutional, non-constitutional, judicial, quasi-judicial, administrative and other types of bodies.	Agriculture, animal husbandry and transport	Issues	
4	Indian society features, issues, globalization and diversity	Federal structure and local bodies. Their powers and functions.	Food security- measures to boost food security and food processing. Issues related to land- land reforms	Related laws and rules	
5	Women - issues and developments	Government policies and various governance issues like transparency, accountability and – governance	Industries and infrastructure- their growth and investment model	Governance/e- Governance	
6	Urbanization – problems and remedies	Committees and schemes.	Space and technology, IT space, robotics and computer	Ethics in international issues	
7	Distribution of industries and resources – India and world	Non-government issues, self-help groups and role of civil society	Disease, biotechnology and human welfare	Personalities and their teachings	
8	Geophysical phenomena such as earthquakes, Tsunami, Volcanic activity, cyclone etc	Vulnerable sections of our society and social sector issues like Poverty, Hunger, Education, and their initiatives.	Innovations, intellectual property, Awards, POI and other important aspects of S&T	Other important topics	
9		International Relation- India and other countries, various Indian and international agreements, effects of other countries on India and international institutions.	Environment; government initiatives, various judgment, pollution, degradation and conservation efforts		
10			Disaster & Disaster Management		
11			Challenges to internal security, Various Security forces and agencies and their mandate. Cybersecurity; money laundering and its prevention.		

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## Contents

<b>POLITY .....</b>	<b>5</b>
One Nation One Election Bill: Proposals and Key Takeaways....	5
No-detention policy scrapped .....	6
One Candidate, Multiple Constituencies (OCCM).....	7
The Constitution on Minority Rights .....	8
The Hindu Succession Act.....	10
POSH Act Apply to Political Parties.....	11
Supreme Court Expands NIA's Powers .....	13
<b>SOCIAL ISSUES .....</b>	<b>14</b>
Water and Food Contamination in Bihar: A Public Health Crisis .....	14
The Digital Frontier of Inequality .....	15
The Challenge of Universal Health Coverage (UHC).....	16
Legal Perspectives of 'Cruelty' in Marriage.....	18
Millions of diabetes, heart disease cases globally linked to sugary drinks.....	19
<b>ECONOMY .....</b>	<b>20</b>
Rising Delinquencies in India's Microfinance Sector: A 2023 Overview .....	20
'Intelligent machines' for Highways construction.....	21
Indian rupee falling .....	22
Economic Losses from Natural Catastrophes in India: A 2023 Report .....	23
Targeted Interventions in Labour-Intensive Sectors.....	24
Bitcoin Strategic Reserve .....	25
<b>AGRICULTURE .....</b>	<b>26</b>
The Rise of Gender-Inclusive Agritech.....	26
House Panel Advocates for Legalised MSP .....	28
<b>INTERNATIONAL RELATIONS.....</b>	<b>28</b>
China Approves World's Largest, \$137-Billion Dam on the Brahmaputra Close to the Indian Border.....	28
Return of Panama Canal .....	30
Trump wants to buy Greenland .....	32
<b>ENVIRONMENT.....</b>	<b>33</b>
18th State of Forest Report (ISFR-2023) .....	33
Climate change and biodiversity loss are connected: Key takeaways from NEXUS report.....	34
Uttarakhand's Ticking Time Bomb.....	35
Nimesulide ban yet another step toward saving vultures, but the battle is far from over.....	36
Landmark Youth Climate Ruling.....	37
<b>SCIENCE &amp; TECHNOLOGY .....</b>	<b>38</b>
ISRO launches SpaDeX mission .....	38
What is Disease X and Why the World Should Prepare for It .....	39
Foetal brain mapping project.....	40

Dark Comets.....	41
<b>INTERNAL SECURITY .....</b>	<b>42</b>
Law against 'urban Naxalism' .....	42
Recent Attack in Bastar.....	43
<b>GEOGRAPHY .....</b>	<b>45</b>
'Santa Ana' winds and climate change.....	45
The Polar Vortex in Winter Storm.....	46
<b>DISASTER MANAGEMENT .....</b>	<b>47</b>
Soapstone Mining and Land Subsidence Uttarakhand.....	47
California Wildfire.....	48
<b>PRE-SHOTS.....</b>	<b>51</b>
<b>POLITY .....</b>	<b>51</b>
Right to Property a Constitutional Right .....	51
Legally enforceable right to secure educational.....	51
The Concept of a State Funeral .....	52
Supreme Court Explains the Henderson Doctrine.....	52
<b>ECONOMY .....</b>	<b>53</b>
India's first Organic Fisheries Cluster .....	53
Drone-based system to monitor illegal fishing .....	54
Key Highlights of the ASUSE 2023-24 Results .....	54
The GATT-ification of the World Trade Organization.....	55
RBI Forms Committee for Ethical Enablement of AI in Financial Sector .....	55
<b>SOCIAL ISSUES.....</b>	<b>56</b>
Idiopathic Pulmonary Fibrosis (IPF).....	56
India in World Malaria Report 2024.....	56
Revival of 1978 'Anti-Conversion' Law .....	57
CHARAK Initiative.....	58
<b>AGRICULTURE.....</b>	<b>59</b>
10,000 MPACS Inaugurated .....	59
Implementation of the Land Acquisition Act.....	59
Barley for Punjab's Farmers.....	60
<b>INTERNATIONAL RELATIONS.....</b>	<b>61</b>
India, Iran, and Armenia Hold 2nd Trilateral Consultations ...	61
The Order of Mubarak Al-Kabeer .....	62
Chennai-Vladivostok Sea Route (aka Eastern Maritime Corridor - EMC) .....	62
"Toughest" Strategy Against the US.....	63
Trinidad and Tobago has declared an emergency.....	63
Russian gas exports to Europe halted.....	64
Indonesia Becomes Full Member of BRICS.....	65
Counterattacks in Russia's Kursk Region.....	66
Russia Declares Emergency in Crimea.....	66
US imposes sanctions on entities in Iran, Russia.....	67
<b>ENVIRONMENT.....</b>	<b>68</b>
Green Energy Open Access Rules 2022.....	68

Transformation of Himalayan Tree Lines .....	68	Tibet Earthquake and Himalayan Seismic Activity.....	83
From Waste to Energy to Pollution.....	69	Water 'eruption' in Jaisalmer desert.....	84
Global Freshwater Fauna at Risk: Western Ghats as a Critical Hotspot.....	70	<b>DISASTER MANAGEMENT .....</b>	<b>85</b>
India's Fourth Biennial Update Report: A Commitment to Climate Action .....	71	Law to prevent borewell deaths .....	85
One Plate, One Bag' campaign launched for plastic-free Maha Kumbh.....	72	<b>ART &amp; CULTURE .....</b>	<b>86</b>
First-ever satellite tagging of a Ganges dolphin.....	72	Restoration of Jahaz Haveli .....	86
Arctic tundra is emitting more carbon.....	73	Katra Ropeway to Vaishno Devi .....	87
<b>SCIENCE &amp; TECHNOLOGY .....</b>	<b>74</b>	Promoting winter Char Dham Yatra .....	88
Jetson Orin Nano Super .....	74	Landmarks of Manmohan Singh's Journey.....	89
ISRO & ESA agree to mission implementation.....	75	Preserving Heritage: The Art of Silver Nagra Craftsmanship..	90
India's first crewed deep-sea mission .....	75	World Braille Day .....	91
Firefly Sparkle discovered.....	76	<b>GOVERNMENT SCHEMES.....</b>	<b>92</b>
'Kisan Kavach' to Shield Farmers from Pesticide Sprays.....	77	'BHARATPOL' Portal launched.....	92
Norovirus cases rising .....	77	'Jalvahak' Initiative for Inland Waterways in India.....	93
Blue Origin's New Glenn rocket.....	78	Credit Guarantee Scheme for e-NWR Based Pledge Financing (CGS-NPF).....	94
India Achieves Titanium Milestone.....	79	New courses on 'Viksit Bharat' .....	95
India on Alert for HMPV Amid Outbreak.....	79	Grameen Bharat Mahotsav 2025.....	96
Rabbit fever .....	80	<b>PHILOSOPHY OF THE MONTH .....</b>	<b>97</b>
Isro grows crops in space .....	80	Stepping Out of the Comfort Zone: A Philosophical Perspective on Building Viksit Bharat by 2047.....	97
New Memories Do Not Overwrite Old Ones.....	81	<b>ESSAY.....</b>	<b>98</b>
Proteus ONE Proton Therapy System .....	82	<b>CONTEMPORARY ETHICS CASE STUDY .....</b>	<b>98</b>
<b>INTERNAL SECURITY .....</b>	<b>82</b>	<b>SPECIES IN NEWS .....</b>	<b>99</b>
Pegasus Spyware Case.....	82	<b>PLACES IN NEWS - INDIA .....</b>	<b>104</b>
<b>GEOGRAPHY.....</b>	<b>83</b>	<b>PLACES IN NEWS - WORLD .....</b>	<b>106</b>

## POLITY

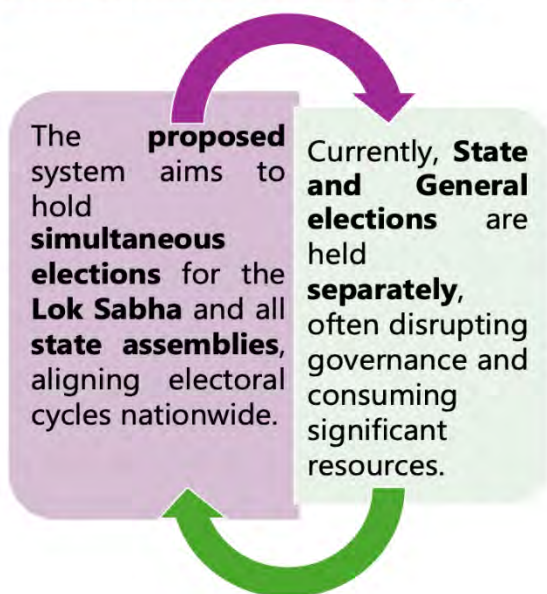
### One Nation One Election Bill: Proposals and Key Takeaways

#### News Excerpt

Recently, two Bills introduced in the Lok Sabha—the **Constitution (129th Amendment) Bill, 2024**, and the **Union Territories Laws (Amendment) Bill, 2024**—laid the groundwork for simultaneous elections.

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GS	I	II	III	IV	GS	I	II	III	IV		
1					7						
2					8						
3					9						
4					10						
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#### About One Nation, One Election Bill



#### Proposed Amendments in the Constitution (129th Amendment) Bill

- **New Article 82A:** Facilitates the transition to simultaneous elections for Lok Sabha and state Assemblies.
  - **Article 82A(1):** Enables the President to notify the start date for simultaneous elections after the first sitting of a new Lok Sabha.
  - **Article 82A(2):** Synchronizes the terms of state Assemblies with the Lok Sabha, potentially curtailing some Assemblies' five-year terms.
  - **Article 82A(3):** Mandates the **Election Commission of India (ECI)** to conduct simultaneous elections.
  - **Article 82A(5):** Allows the ECI to recommend exceptions for specific Assembly elections if simultaneous polls are not feasible.
  - **Article 82A(6):** Ensures that if an Assembly election is deferred, its term aligns with the next Lok Sabha's full term.
- **Amendment to Article 83 and Article 172:**
  - **Article 83:** If the Lok Sabha dissolves prematurely, the next Lok Sabha will only serve the **remaining term** of the previous one. Bills pending in a dissolved Lok Sabha will lapse, even if the term was shortened by mid-term elections.

- **Article 172:** Provisions similar to Article 83 apply to **state legislatures**, ensuring that mid-term polls result in Assemblies serving only the remaining term of the previous House.
- **Amendment to Article 372:** The bill proposes to include "conduct of simultaneous elections", expanding Parliament's power over state legislature elections.

#### Key Features of the Union Territories Laws (Amendment) Bill, 2024

- **Purpose:** Brings Union Territories, including **Delhi, Jammu and Kashmir**, and others, under the framework of simultaneous elections.
- **Acts to be Amended:**
  - **Government of Union Territories Act, 1963**
  - **Government of the National Capital Territory of Delhi Act, 1991**
  - **Jammu and Kashmir Reorganisation Act, 2019**
- **Implication:** Ensures Union Territories align with the new electoral framework for simultaneous elections.

#### Significance of the Proposals



#### Key Takeaways

- **Scope of Simultaneous Elections:** Initially, the proposal is limited to the **Lok Sabha** and **State Assemblies**, excluding municipal and panchayat elections.
- **Timeline:** Simultaneous polls are unlikely before the **2034 election cycle**, assuming the 18th and 19th Lok Sabhas complete their full five-year terms.
- **Mid-Term Elections:** Provisions address scenarios in which mid-term elections may be required for either the Lok Sabha or state Assemblies.
- **Legislative Challenges:** Under **Article 368**, the Constitutional Amendment Bill requires a special majority in both Houses of Parliament, involving two-thirds of members present and voting and approval by at least half of the state legislatures.
- **Sent to a Joint Parliamentary Committee (JPC):** The bills have been sent to the JPC for further scrutiny. The JPC will have **90 days to review** the bills; however, it may **request an extension**. It will analyse the proposal clause by clause and **seek public feedback**.

**PEPPER IT WITH:**

Electoral Reforms, Federalism challenges, voter education.

#### About the Joint Parliamentary Committee (JPC)

- **Composition:** A Joint Parliamentary Committee (JPC) is a committee formed by members from the **Lok Sabha**

and the **Rajya Sabha** for an in-depth review of a subject or a Bill. Members include representatives from both the **ruling party** and the **opposition**.

- The committee usually includes **21 members from the Lok Sabha** and **10 from the Rajya Sabha**. However, the number of members depends on the task and is **decided by Parliament**.
- **Formation Process:** A motion is passed in one House, and the other House agrees to the motion.
- **Nature of Recommendations:** A JPC's recommendations are **advisory** and **not binding** on the government. The government can choose to **accept, modify, or reject** the recommendations.
- The government must submit an **Action Taken Report** to Parliament outlining the steps taken in response to the JPC's recommendations.
- **Dissolution:** It is dissolved once its **task is completed** or its **term expires**.

## No automatic promotions in classes 5 and 8

**THE NEW POLICY**

- 1 Centre abolishes automatic promotion system for students in classes 5 and 8
- 2 Implements competency-based examination system

**WHY THE SHIFT?**

23 of 28 states requested policy change in Aug 2015

Parliament amended RTE Act in March 2019, after which 16 states and 2 UTs abandoned approach

**WHAT NOW**

States given authority to reintroduce examinations

New policy in effect in over 3,000 central government schools, including all Kendriya Vidyalayas, Navodaya Vidyalayas, and Sainik Schools

**ADDITIONAL SUPPORT FOR STUDENTS**

- Students who fail will receive re-examination opportunity within two months
- School heads must maintain records of struggling students
- Class teachers required to guide both students and parents
- Mandatory remedial teaching for failing students
- Focus on identifying and addressing learning gaps

"We want access, but also want to improve learning outcome among students under NEP. Through changes in the rules, we will be able to pay attention to those students who are not good at studies."

— SANJAY KUMAR, school education secretary

## No-detention policy scrapped

### News Excerpt

The Centre has scrapped the **no-detention policy** in the schools governed by it, including **Kendriya Vidyalayas** and **Jawahar Navodaya Vidyalayas**, allowing students of Classes 5 and 8 to be held back from the ongoing academic session.

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### What is the No-Detention Policy?

- Introduced under the **Right to Education (RTE) Act, 2009**, the policy mandated that students from **Classes 1 to 8** be promoted automatically, irrespective of their academic performance, to ensure universal access to education.
- While the intention was to reduce dropout rates and stress among students, critics argued it led to a decline in learning outcomes as students lacked motivation to perform academically.

### Why Did Punjab Oppose the No-Detention Policy?

- **Declining Learning Outcomes**
  - By 2014, the **Punjab government** observed a "drastic fall" in the academic performance of students, particularly in **Class 10 board exams**, as many lacked foundational skills.
  - Teachers and schools reported that promoting students without rigorous evaluations undermined their preparedness for higher education.

- **Resolution in Vidhan Sabha**
  - The **Parkash Singh Badal-led government** passed a resolution in the state assembly to reintroduce board exams for **Classes 5 and 8**, emphasizing the importance of periodic assessments.

### Communication with the Centre

- In 2015, Badal wrote to **Prime Minister Narendra Modi**, urging amendments to the RTE Act. He highlighted how the policy hindered "stage-specific learning" and contributed to a decline in the overall quality of education.

### Punjab's Interim Solution: Learning Outcome Evaluation System (LOES)

- **Introduction of LOES (2016)**
  - To comply with the RTE Act while addressing declining academic standards, Punjab introduced **LOES**, an assessment system for Classes 5 and 8.
  - Under LOES, students underwent evaluations conducted by the **State Council of Educational Research and Training (SCERT)**.
  - **No student was detained**, but those who performed poorly were identified for **remedial coaching and additional support**.
- **Objective of LOES**
  - To monitor students' progress and intervene early, ensuring they received the necessary assistance to meet academic standards.
  - This system laid the groundwork for eventual board exams once the legal framework allowed it.

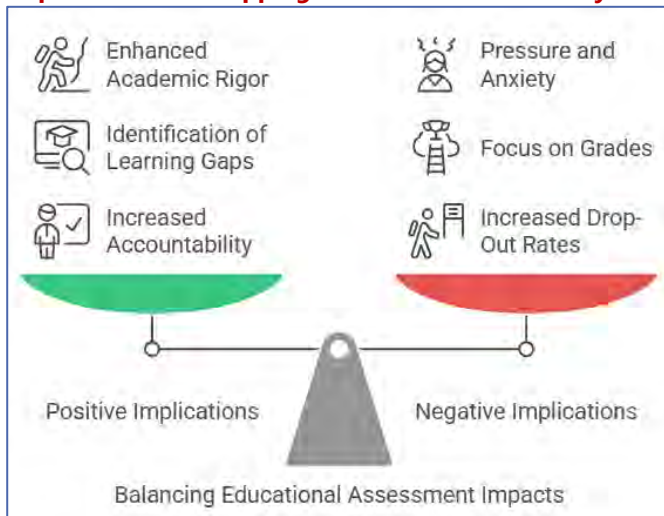
### Reintroduction of Board Exams in Punjab

- **2019 Amendment to the RTE Act**
  - The Centre amended **Section 16** of the RTE Act, empowering states to conduct regular exams for **Classes 5 and 8** and hold back students if they failed both the main exam and a re-exam.



- The amendment also retained the clause that **no child could be expelled** until they completed elementary education.
- **Punjab's Implementation**
  - After the amendment, Punjab reintroduced **board exams** for Classes 5 and 8, conducted by SCERT.
  - Students who failed were given an opportunity to improve through **re-examinations** held within two months of the results.
  - If they failed again, they could be detained, marking the return of accountability in the system.

**Implications of Scrapping the No-Detention Policy**



- **Improved Accountability**
  - Teachers and students are expected to take academics more seriously, knowing that promotion is no longer automatic.
- **Potential Challenges**
  - Critics of detention policies argue they may lead to higher **dropout rates**, especially among marginalized communities.
  - Effective **remedial measures** and **teacher training** are crucial to ensure students receive adequate support to succeed academically.
- **Long-term Educational Impact**
  - By reintroducing evaluations and addressing learning gaps early, states like Punjab aim to improve the overall quality of education and readiness for higher studies.

**Conclusion:**

Punjab's proactive stance against the **no-detention policy** highlights the importance of balancing inclusivity with academic rigor.

The reintroduction of board exams for Classes 5 and 8 marks a significant step in ensuring better learning outcomes, provided the system includes robust support mechanisms for struggling students.

**PEPPER IT WITH:**

Education reform. New education policy, Children welfare.

**One Candidate, Multiple Constituencies (OCMC)**

**News Excerpt**

The issue of **candidates contesting** from multiple constituencies (OCMC) has sparked debates, especially in the context of India's ongoing **electoral reforms**. This has become a common strategy for political parties to **maximise** their chances of winning legislative seats.

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**Constitutional and Legal Provisions**

- The **Constitution of India** provides elections every five years for the Lok Sabha and State Legislative Assemblies.
- While the Constitution establishes the **Election Commission of India (ECI)**, it empowers Parliament to regulate the conduct of elections.
- The **Representation of the People Act 1951** governs the practice of contesting from multiple constituencies.
  - **Pre-1996:** No limit on the number of constituencies a candidate could contest from.
  - **Post-1996:** An amendment limited candidates to contest from **a maximum of two constituencies**.
- Candidates contesting and winning from multiple constituencies **must vacate** all but one seat, as per **Section 70** of the **RP Act, 1951**.
- This necessitates frequent **by-elections**, which add to administrative and financial burdens. For example, **44 by-elections** for State Assemblies were held in November 2024 alone due to legislators' resignations.

**Significance of OCMC**

- **Safety Net for Candidates:** Contesting multiple seats provides a fallback option, especially in **closely contested constituencies**.
- **Political Continuity:** OCMC ensures smooth leadership transitions in leader-centric parties if a leader loses in one constituency. For example, **Mamata Banerjee** lost the Nandigram seat in 2021 but retained power through the Bhabanipur by-election.
- **Message Amplification:** Contesting multiple seats allows leaders to strengthen their party's campaign and enhance their message delivery.

**Impact of OCMC on Democracy**

- **Resource Strain:** Continuous elections and by-elections drain public resources that could be used for development.
- **Political Will:** Addressing OCMC requires a strong commitment from political parties. However, unlike the "One Nation One Election" proposal, OCMC reform has few advocates within the political class.
- **Strengthening Democracy:** Enforcing "**One Candidate, One Constituency**" aligns with the democratic principle of "**One Person, One Vote**" and promotes accountability.

### EYE ON THE PRIZE

KEY CANDIDATES CONTESTING/CONTESTED ON TWO OR MORE SEATS

<p><b>ATAL BIHARI VAJPAYEE</b> 1957: From Mathura, Lucknow, Balrampur 1962: From Balrampur, Lucknow 1991: From Vidisha, Lucknow 1996: From Gandhinagar, Lucknow</p>	<p><b>LK ADVANI</b> 1991: From New Delhi, Gandhinagar</p>	<p><b>LALU PRASAD</b> 2009: From Saran, Patna</p> <p><b>MULAYAM SINGH YADAV</b> 2014: From Azamgarh, Mainpuri</p> <p><b>NARENDRA MODI</b> 2014: Vadodara, Varanasi</p> <p><b>RAHUL GANDHI</b> 2019: Amethi, Wayanad</p> <p><b>NAVEEN PATNAIK</b> 2024: From Hinjli, Kantabanji Assembly seats</p>
<p><b>SONIA GANDHI</b> 1999: From Bellary, Amethi</p>		

### Challenges of OCMC

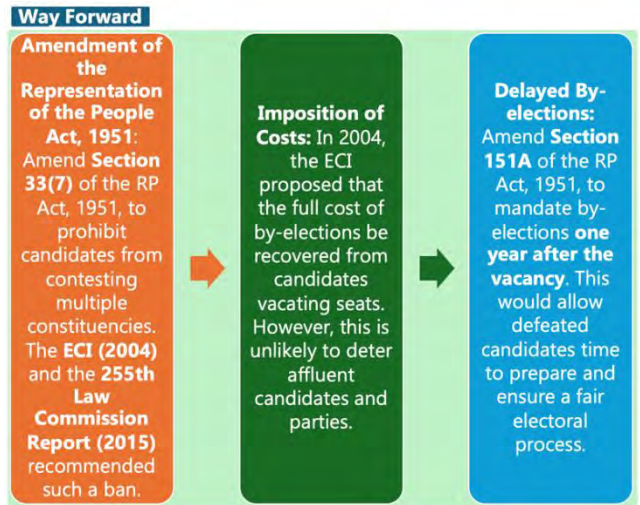
- Financial Costs:** The 2014 Lok Sabha elections cost ₹3,870 crore, rising to an estimated ₹6,931 crore in 2024. Each vacated seat costs an additional ₹12.76 crore for a by-election. Political parties spent an estimated ₹1,35,000 crore in the 2024 general elections, with an average of ₹250 crore per constituency. This is often funded by unaccounted money, undermining financial transparency.
- Non-level Playing Field:** By-elections tend to favour the **ruling party**, which can leverage state resources and influence to gain an advantage. This creates an **uneven electoral field**, disadvantaging the Opposition and weakening democratic competition.
- Double Burden on Opposition:** Defeated candidates and their parties face financial and logistical challenges, having to contest by-elections shortly after the general elections.
- Erosion of Democratic Principles:** Contesting from multiple constituencies prioritises political strategy over public welfare, undermining the principle of **"government of the people, by the people, and for the people."** It also reflects a **hedging mechanism**, allowing leaders to secure their position rather than genuinely representing voters.
- Voter Disillusionment:** Vacating seats often leads to voter confusion, resentment, and apathy, as seen in Wayanad, Kerala, when Rahul Gandhi vacated his seat in 2024. Voter turnout dropped to 64.24% in the bypoll, compared to 72.92% in the general election.
- Constitutional Concerns:** Critics argue that OCMC violates **Article 19(1)(a)** (freedom of speech and expression), as voters elect a candidate with the expectation that they will represent them in office.

**PEPPER IT WITH:**  
Electoral Democracy, Constitutional Reforms, By-elections.

### Global Experiences

- Pakistan:** Allows candidates to contest unlimited constituencies, as seen in the 2018 elections when a former Prime Minister contested five seats.
- Bangladesh:** Permits contesting up to three constituencies.
- United Kingdom:** Phased out OCMC in 1983 to promote clear representation and accountability.

- European Democracies:** Most have prohibited OCMC, aligning with principles of direct representation.



## The Constitution on Minority Rights

### News Excerpt

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The preservation of diversity is the rationale behind minority rights in the Indian Constitution. On Minority Rights Day, it is essential to remember Franklin Roosevelt's words, 'no democracy can long survive which does not accept as fundamental to its very existence the recognition of the rights of minorities'

The discourse on minority rights in India often **polarises** between **communalism** and **secularism**, overlooking their core relevance to democracy and substantive equality. Recognising their importance, the **UN General Assembly** adopted the "Rights of Persons Belonging to National, Ethnic, Religious, and Linguistic Minorities" on **December 18, 1992**, celebrated as **Minority Rights Day**.

### Evolution of Minority Rights

- European Frameworks:**

  - Austria's Constitutional Law (1867):** Affirmed the right of ethnic minorities to preserve their nationality, language, and culture.
  - Hungary's Act XLIV (1868):** Contained similar provisions for minority protection.
  - Swiss Constitution (1874):** Ensured equal rights for the three national languages in civil services, legislation, and courts.
- Post-World War I Era:**

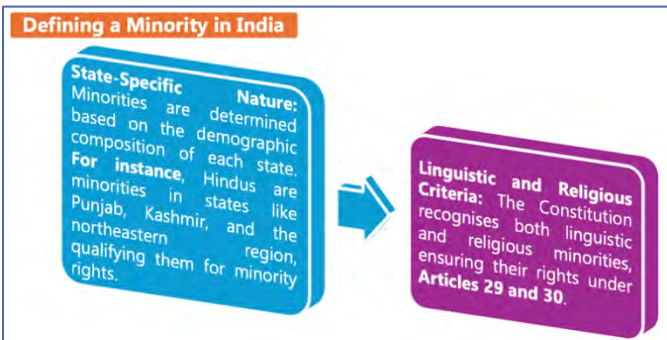
  - Poland, Romania, and Yugoslavia** signed treaties ensuring minority rights.
  - Turkey, Austria, Hungary, and Bulgaria** had provisions for minorities incorporated into their peace treaties.
  - Albania, Finland, and Iraq** voluntarily declared their commitment to protect minorities.

- **Universal Declaration of Human Rights (1948):** Article 27 recognises the individual's right to community participation, cultural preservation, and access to cultural forums and associations.

**Debate in the Constituent Assembly**

- Prominent leaders emphasised that safeguarding minority rights was central to India's unity, progress, and stability.
- **Pandit G.B. Pant** called for a satisfactory resolution of minority questions to ensure peace and stability in a free India.
- **The Advisory Committee on Minority Rights**, led by **Sardar Vallabhbhai Patel**, examined and formulated provisions on minority rights. These deliberations resulted in **Articles 25 to 30**, collectively providing a robust framework for protecting minority rights.

**Constitutional Recognition of Minority Rights**



- **Article 29(1):** Protects the rights of any group to conserve its language, script, and culture. This recognises that cultural diversity strengthens the nation.
- **Article 30:** Provides religious and linguistic minorities the right to establish and manage educational institutions.
  - Judicial interpretations, such as **Kerala Education Bill (1957)** and **Aligarh Muslim University (2024)**, underscore this right as a safeguard against majoritarian dominance.
  - **Article 30(2):** Prohibits the State from discriminating against minority institutions when granting aid.
- **Article 350A and 350B:** Mandate education in the **mother tongue** and appoint **Special Officers** for Linguistic Minorities, ensuring equitable access to resources for minority communities.
- **Personal Laws:** Religious minorities are allowed to follow their personal laws. For instance, the **customary laws of Nagas** and other tribal groups are constitutionally protected.

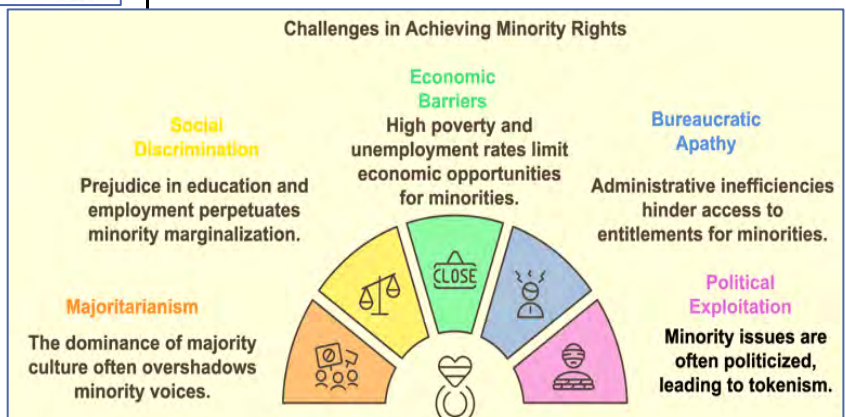
**Judicial Interpretations**

- **Kesavananda Bharati (1973):** Declared minority rights under Article 30 as part of the **basic structure**, making them immune to constitutional amendments.

- **St. Xavier's College Society (1974):** Affirmed that the right to administer institutions is critical for maintaining equality between majority and minority groups.
- **TMA Pai Foundation (2002):** Defined minorities at the **state level**, ensuring region-specific applicability of minority rights.
- **Aligarh Muslim University (2024):** Provided clarity on the indicia of minority institutions, emphasising the intent of founders and minority representation in administration.

**Rationale Behind Minority Rights**

- **Democracy and Inclusion:** Minority rights are critical to upholding **democratic values**, ensuring that no group is marginalised or excluded.
  - As **Franklin Roosevelt** observed, "no democracy can long survive which does not accept as fundamental to its very existence the recognition of the rights of minorities".
- **Beyond Individual Equality:** While Articles 14-18 guarantee equality and non-discrimination, they do not address the challenges minority groups face in preserving their distinct identities.
  - For example, **Article 29** recognises the right of minorities to conserve their culture, script, and language, ensuring that their group identity is protected from ridicule or suppression.



- **Community Dignity:** Individual dignity is intertwined with the dignity of the group to which one belongs. For instance, an individual's right to cultural preservation is meaningless unless the group's cultural identity is respected and safeguarded.
- **Conducive Environment for Growth:** Minority rights aim to create an environment where cultural and linguistic minorities can flourish.
  - For example, **Article 30** empowers minorities to establish and administer educational institutions to foster their identity. This ensures that minority groups retain control over their cultural narratives and development.
- **Recognising Multiculturalism:** India's pluralistic ethos necessitates a framework that respects **cultural diversity**

and **group rights**, moving beyond a simplistic individual rights discourse.

### Government Interventions for Minorities

- **Padho Pardesh:** Offers interest subsidies on educational loans for minority students pursuing studies abroad.
- **Nai Udaan:** Provides financial support to minority students preparing for exams like **UPSC, SSC, and state PSCs**, fostering inclusivity in governance and administration.
- **Seekho aur Kamao (Learn and Earn):** A skill development initiative to provide livelihood opportunities for minority youth.
- **USTTAD (Upgrading Skills and Training in Traditional Arts):** Focuses on upgrading traditional skills, arts, and crafts to improve employability and preserve heritage.
- **Nai Manzil:** Combines formal education with skill training and provides placement assistance for minority youth to enhance their career prospects.
- **Pradhan Mantri Jan Vikas Karyakram (PMJVK):** Aims to improve the socio-economic conditions and infrastructure in areas with a high concentration of minority populations, such as schools, health centres, and skill development hubs.
- **Nai Roshni:** A leadership development program designed to empower minority women through confidence building, decision-making, and community participation training.
- **Hamari Dharohar:** Focuses on preserving and promoting the cultural heritage of minority communities, showcasing their contributions to India's cultural diversity.
- **Jiyo Parsi:** Aims to address the population decline of the Parsi community by providing advocacy, financial aid, and medical assistance for infertility treatments.

#### PEPPER IT WITH:

Secularism, Social Justice, Majoritarianism, Multiculturalism.

#### Way Forward

- **Strengthening Legal and Institutional Frameworks:** Establish a uniform definition of "minority" to eliminate ambiguities and ensure consistent policy application. Fast-track cases related to communal violence and discrimination to ensure timely justice for minorities.
- **Effective Implementation of Policies:** Enhance transparency and accountability in implementing minority-specific schemes like PMJVK, Nai Udaan, and MANF. Promote awareness among minority communities about their rights and available government schemes.
- **Promoting Social Harmony:** Launch nationwide campaigns to combat stereotypes and biases against minority communities.
- **Enhancing Educational Opportunities:** Develop quality educational institutions in minority-concentrated areas. Ensure that school curricula reflect the contributions and histories of minority communities, fostering respect for diversity.
- **Economic Empowerment:** Facilitate easier credit and financial services access through institutions like NMDFC. Support minority entrepreneurs with targeted incentives and incubation programs.
- **Addressing Dual Discrimination:** Provide targeted support to minority women in education, healthcare, and employment. Strengthen programs like Nai Roshni to develop leadership skills among women in minority communities.

## The Hindu Succession Act

### News Excerpt

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The **Supreme Court** referred the **questions over Hindu women's property rights** under **Section 14 of the Hindu Succession Act, 1956**, to a larger bench, underlining the issue as **one of utmost importance**. It is **absolutely necessary** that there must be **clarity and certainty in the position of law** that would **govern proprietary interests of parties** involving interpretation of Section 14, the court said.

### What Section 14 says

- **Section 14 of the Hindu Succession Act 1956** relates to the **absolute property** of a Hindu woman.
- **Any property possessed by a female Hindu**, whether **acquired before or after the commencement of this Act**, shall be **held by her as full owner** thereof and not as a limited owner, the first subsection of the provision states.
- **Absolute property** is that property over which one has complete rights — same as any **other property owner** — including **the right to keep and use such property**, free from restrictions.
- The term "**property**" here includes **both movable and immovable property** acquired by a Hindu woman "**by inheritance or devise, or at a partition, or in lieu of maintenance or arrears of maintenance**, or by a gift from any person, whether a relative or not, before, at or after her marriage, or by her own skill or exertion, or by purchase or by prescription, or in any other manner whatsoever, and also any such property held by her as **stridhana** immediately before the commencement of this Act. Simply put, all of these come under **the absolute property of a Hindu woman**.
- The **second part of the provision — subsection (2) of Section 14** — exempts specific properties from being considered a **woman's absolute property**.
- That includes any property acquired through a gift or will, or any other instrument, decree, or **civil court order**, or under an award "**where the terms of the gift, will or other instrument**" prescribe "**a restricted estate in such property**".
- Essentially, this indicates that property, which is willed, gifted or given through other ways but with specific conditions attached, falls under property that, in its nature, is not absolute.
- In the landmark case of **V. Tulasamma & Ors vs V. Sesa Reddi (1977)**, a three-judge bench of the Supreme Court, while dealing with the interpretation of **Section 14**, said, "This is a classic instance of a **statutory provision** which, by reason of its inapt draftsmanship, has created endless confusion for litigants and proved a paradise for lawyers".

The court also said that there was a need for the government to set up a body that constantly keeps in touch with **the adjudicatory authorities** and the legal profession by expeditiously making amendments if a particular provision is found inadequate, defective, or ill-conceived and, resultantly, counterproductive because of **“inapt language”** or **“unhappy draftsmanship,”** among other things.

### Questions over Section 14

- Since **as far back as 1977**, the top court raised concerns about the **legislative indifference** and interpretative difficulties presented by **sub-sections (1) and (2) of Section 14**, leading to **“judicial divergence”**, which **Justice Bhagwati** described as **“chaotic”** and **“robbing the law of that modicum of certainty which it must always possess”**.
- The inherent contradiction in the provision stemmed from the fact that, on the one hand, Section 14(1) was a progressive law intended to expand **the rights of Hindu women**, and on the other, **Section 14(2)**, in effect, restricted their rights, by delineating exceptions, where property would not be considered **“absolute”**.
- In the **1977 Tulasamma case**, the court pointed out that before the enactment of Section 14, Hindu law **“restricted the nature of the interest of a Hindu female in property acquired by her”** and that there was **“great diversity of doctrine”** on the nature of this restricted interest.
- By enacting **Section 14(1)**, the legislature intended **“to convert the interest which a Hindu female has in property — however, restricted the nature of that interest under the Sastri Hindu law may be — into absolute estate”**.
- In the present case, the court noted that **at least 18 SC judgments** exist, where two-judge or three-judge benches have delivered decisions **“varying and sometimes inconsistent”** with the ruling in Tulasamma’s case.

### Present case & contradictory precedents

- In March 1965, **one Kanwar Bhan willed his property to his wife**, with the condition that after her death, the property would pass down to his heirs.
- In 1981, the wife sold the property after **Kanwar Bhan’s death**, leading to the deceased’s heirs filing a suit **to stake claim to the property and its possession**.
- The question that arose then was whether the wife had **full ownership rights** to the property or the restrictions given in her late husband’s will still held ground.
- Five years later, the trial court and, later, **the High Court ruled in favour of the wife** while holding that the

property amounts to maintenance, relying on the **Tulasamma judgment**.

- On the other hand, the respondents relied on a three-judge bench ruling in **Karmi vs. Amru (1972)** to say that the disposition of property by the wife of the testator (willmaker) falls under **subsection (2) of Section 14**.
- Although the wife, in that case, had the property in her possession, the court held that **the life estate given to her could not become an absolute estate**, given the Act’s provision, indicating that a widow has no pre-existing right in the husband’s self-acquired property.
- In 1991, however, a two-judge SC bench in **Thota Sesharathamma vs. Thota Manikyamma** noted that the Tulasamma ruling did not take notice of the three-judge bench decision in **Karmi vs. Amru**.
- In the present case, the bench also noted that while the decision in Karmi did not consider **the purpose or object of Section 14** and the precedents on the subject, the principle that shaped that decision resonated in many subsequent decisions.
- After analysing the past rulings, the court said it aimed to **“reconcile the judgments and restate the principles with clarity and certainty”**.
- However, owing to the limitation of the bench consisting of only two judges, it said that **“such an exercise will not be fruitful”** as benches of up to three judges have previously dealt with the issue. That line of thinking made the bench refer the case to an **“appropriate larger bench”**.

**Conclusion:** The Supreme Court’s referral of Hindu women’s property rights under Section 14 to a larger bench seeks clarity amid longstanding judicial inconsistencies. This decision addresses the conflicting interpretations of absolute and restricted ownership, aiming to empower women and support equitable property rights while potentially influencing the broader discourse on personal laws and gender equality.

## POSH Act Apply to Political Parties

### News Excerpt

The question of whether the **Sexual Harassment of Women at Workplace (Prevention,**

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**Prohibition, and Redressal) Act, 2013 (POSH Act)**, applies to political parties presents a unique challenge, given the non-traditional nature of party structures and their activities. Here’s an analysis based on current laws, judicial precedents, and regulatory frameworks:

### Applicability of the POSH Act

The POSH Act mandates all workplaces, public or private, to prevent and address sexual harassment. Key provisions include:

- **Workplace Definition:** The Act has an expansive definition, covering places where employees work or visit during employment.
- **Employee Definition:** Includes regular, temporary, contractual, and voluntary workers, broadening its scope.

#### Challenges for Political Parties:

- **Non-Traditional Workplace:** Political parties lack a fixed workplace. Many party workers operate in the field, making it difficult to define a workplace.
- **Employer-Employee Relationship:** Courts have previously ruled (e.g., Kerala High Court, 2022) that party members do not have a formal employer-employee relationship with political parties, making POSH compliance unclear.

The Sexual Harassment of Women at Workplace (Prevention, Prohibition and Redressal) Act, 2013 (commonly referred to as the POSH Act) is aimed at safeguarding women against sexual harassment in the workplace.

Here are the key points of the POSH Act:

To prevent and prohibit sexual harassment of women at the workplace.

To provide a mechanism for redressal of complaints.

**Definition of Sexual Harassment:** Includes physical contact, unwelcome advances, sexually colored remarks, and any other unwelcome behavior of a sexual nature that creates an intimidating, hostile, or humiliating environment.

**Applicability:** Applies to all workplaces, including government, private, non-governmental organizations, and educational institutions.

**Internal Complaints Committee (ICC):** Every organization with 10 or more employees must establish an Internal Complaints Committee (ICC) to handle complaints of sexual harassment.

The ICC must be comprised of a minimum of four members, including a presiding officer (a woman), at least two women members, and one external member from an NGO.

**Complaint Mechanism:** Women can file complaints within three months of the incident. The ICC must complete the inquiry within 90 days of receiving the complaint.

**Confidentiality:** Details of the complaint and the inquiry must be kept confidential to protect the identity of the complainant.

**Penalties:** Employers who fail to comply with the provisions of the Act may face penalties, including monetary fines and potential action against the responsible individuals.

**Right to Transfer:** Victims of sexual harassment have the right to request a transfer to another workplace or change in work responsibilities to ensure their safety and well-being.

**Awareness and Training:** Organizations are required to conduct awareness programs and training sessions on women's rights to prevent sexual harassment.

**Redressal Procedures:** The Act provides various forms of redressal, including mediation, counseling, and disciplinary action depending on the severity of the incident.

#### Judicial and Legislative Context

##### Judicial Stance

- The Kerala High Court in **Centre for Constitutional Rights Research and Advocacy v State of Kerala (2022)** ruled that political parties do not fall under the POSH Act's definition of a workplace.
- The Supreme Court, in December 2024, directed the petitioner to approach the Election Commission of India (ECI) for guidance, indicating that political parties may need a tailored mechanism for handling sexual harassment complaints.

##### POSH Act Provisions and Political Parties

- **Field Workers and Volunteers:** The Act covers individuals working without a principal employer's knowledge. This could extend protections to party workers.
- **Party Constitutions:** Many parties have hierarchical structures. These could help define responsibility for creating Internal Complaints Committees (ICCs).

##### Mechanisms Within Political Parties

Most political parties rely on internal disciplinary committees for managing grievances:

- **Congress Constitution:** Allows higher committees to act on breaches of discipline, but sexual harassment is not explicitly addressed.
- **BJP Constitution:** Establishes disciplinary committees but lacks provisions requiring external members or women, as mandated for ICCs under POSH.

These internal systems are inadequate compared to POSH Act requirements, which include women members and external representatives.

##### Role of the Election Commission of India (ECI)

The ECI oversees political parties under the Representation of the People Act, 1951 (RP Act), but its role in enforcing non-electoral laws is less clear.

##### Precedents:

- **RTI Act, 2005:** Despite the CIC ruling that political parties are public authorities under RTI, parties have resisted compliance.
- **Advisories:** The ECI has issued advisories for compliance with other laws, such as prohibiting child labor in election campaigns.

##### Current Stand on POSH:

The Supreme Court's direction to approach the ECI highlights its potential role in ensuring political parties adopt mechanisms akin to ICCs under the POSH Act.

##### Moving Forward: Potential Approaches

- **Extend POSH Act to Political Parties:**

Amendments to the POSH Act or new guidelines could explicitly include political parties as workplaces. This would require:

- Defining the workplace and employer within the party context.
- Mandating ICCs or equivalent bodies in party constitutions.

• **ECI Oversight:**

The ECI could issue directives requiring political parties to:

- Establish ICCs with women and external members.
- Ensure transparency in handling sexual harassment complaints.
- **Voluntary Adoption:**

Political parties could voluntarily implement POSH-like mechanisms, enhancing credibility and inclusivity.

• **Conclusion:**

While the **POSH Act** does not explicitly cover political parties, its broad definitions of workplace and employee could support its application.

**PEPPER IT WITH:**  
Electoral Reforms, Women safety, Workplace safety.

However, **implementing the Act within political parties** would require either legislative amendments, proactive directives from the ECI, or voluntary compliance by the parties themselves.

## Supreme Court Expands NIA's Powers

**News Excerpt**

The Supreme Court of India has expanded the investigative powers of the **National Investigation Agency (NIA)** by allowing it to probe offences connected to a Scheduled Offence, even if those connected offences are committed by individuals not directly accused in the Scheduled Offence.

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This ruling broadens the interpretation of the **National Investigation Agency Act, 2008 (NIA Act)** and reinforces the agency's authority in tackling complex and interconnected crimes, particularly those involving terrorism and organized criminal networks.

**The Case Background**

- **Initial FIR in Punjab (2020):**
  - An FIR was registered against **Sukhbir Singh** in Mohali for drug trafficking and arms possession under the **NDPS Act**.
  - During interrogation, Singh named **Ankush Vipan Kapoor**, leading to Kapoor's arrest and the discovery of heroin at his premises. Kapoor was later granted bail.
- **Parallel Case in Gujarat:**
  - Sukhbir Singh was already under investigation in Gujarat for smuggling 500 kg of narcotics from Pakistan.
  - In **June 2020**, the Ministry of Home Affairs (MHA) transferred this Gujarat case to the NIA, citing links to

terrorism under Sections 17 and 18 of the **Unlawful Activities (Prevention) Act (UAPA)**.

• **Connection Between Cases:**

- The NIA found a connection between Kapoor and Sukhbir Singh during its investigation, alleging that Kapoor was part of a larger drug smuggling and terror financing network.

• **Legal Challenge:**

- Kapoor challenged the cancellation of his bail and the MHA's order transferring the investigation to the NIA. He argued that:
  - He was not being investigated for a Scheduled Offence.
  - There was no link between him and the Scheduled Offence under the UAPA.

**Supreme Court's Ruling**

• **Interpretation of Section 8 of the NIA Act:**

- Section 8 allows the NIA to investigate connected offences if there is a **"nexus" or "connection"** with the Scheduled Offence.
- The court held that the phrase **"the accused"** in Section 8 must be interpreted broadly to include connected offences committed by individuals other than the primary accused in the Scheduled Offence.

• **Critical Role of Nexus:**

- The court emphasized that a clear and demonstrable connection between the offences is necessary for the NIA to investigate.
- In this case, it held that Kapoor's alleged activities were sufficiently linked to the Scheduled Offences under the UAPA being investigated by the NIA.

• **Bail Cancellation:**

- The court upheld the Punjab & Haryana High Court's decision to cancel Kapoor's bail, citing the serious nature of the allegations and the need for further custodial interrogation.

**Precedents and Broader Implications**

• **Kerala High Court's Interpretation of "Connection" (2023):**

- In a case involving the murder of an RSS activist, the Kerala HC ruled that offences must be viewed with a **"wider perspective"** to identify connections to Scheduled Offences.
- The court found that the murder was part of a larger conspiracy linked to the banned **Popular Front of India (PFI)**, thus justifying NIA's jurisdiction under the UAPA.

**PEPPER IT WITH:**  
NIA, CBI, ED, Enforcement agencies work and contribution.

• **Impact on NIA's Role:**

- The ruling bolsters the NIA's ability to probe **interconnected crimes** that transcend

jurisdictions, particularly those involving terrorism, organized crime, and drug trafficking.

- It sets a precedent for a purposive and expansive interpretation of the NIA Act to address complex and transnational criminal networks.

**Conclusion**

- The Supreme Court’s decision significantly expands the scope of the NIA’s investigative powers, ensuring that the agency can effectively address interconnected offences with implications for national security. By emphasizing the importance of the “nexus” between crimes, the ruling balances the agency’s broader mandate with the need to adhere to procedural safeguards. This judgment underscores the growing recognition of the complex and multifaceted nature of crimes in contemporary India, particularly those tied to terrorism and organized criminal enterprises.

**SOCIAL ISSUES**

**Water and Food Contamination in Bihar: A Public Health Crisis**

**News Excerpt**

Bihar’s **Gangetic plains** face a serious public health crisis due to water and food contamination. Studies reveal significant **manganese (Mn) and arsenic contamination**, driving rising cancer cases and severe health issues in the region.

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**Manganese Contamination and Its Link to Cancer**

**Key Findings of Manganese Contamination**

- **Study Overview:** A study involving **1,146 cancer patients** from districts such as Patna, Vaishali, and East Champaran revealed high levels of manganese contamination in patients' blood and household water.
- **Blood Manganese Levels:**
  - The highest Mn level in blood was recorded at **6,022 µg/L**, particularly in a liver cancer patient.
  - Average Mn levels in blood were **199 ± 10.52 µg/L**, significantly higher than permissible limits.
  - Patients in **advanced cancer stages** (Stages III and IV) exhibited higher Mn levels, suggesting a correlation between contamination and disease progression.
- **Water Manganese Levels:**
  - **15.2%** of household hand pumps showed Mn levels exceeding **100 µg/L**, with some samples containing over **400 µg/L**.
- **Cancer Trends in the Region**
  - **Breast Cancer:** 33.25%
  - **Hepatobiliary and Gastrointestinal Cancer:** 26.96%
  - **Cervical Cancer:** 5.58%

- **Other Cancers:** 34.78%
- Over **82% of patients** were diagnosed in **advanced stages** (III and IV), emphasising delayed diagnosis due to lack of awareness and healthcare facilities.

**Arsenic Contamination in Food and Water**

- **Arsenic in Food:** A separate study revealed alarming levels of arsenic in staple foods such as rice, wheat, and potatoes in 11 arsenic hotspot districts of Bihar.
  - **Rice:** 14% of samples exceeded the permissible limit of **200 µg/kg**. The highest recorded level was **821 µg/kg**.
  - **Wheat:** 63% of samples surpassed the permissible limit of **100 µg/kg**, with the highest level at **775 µg/kg**.
  - **Potatoes:** While 97% of samples were within limits, the highest contamination reached **1,450 µg/kg**.
- **Arsenic in Groundwater:** Of 513 water samples, 12% exceeded the permissible arsenic level of **10 µg/L**, with the highest recorded at **550.7 µg/L**.
- Arsenic contamination was linked to **sediment deposits** in the **Gangetic plains**, exacerbated by river morphology changes.

**About Manganese**

- Manganese is the **fifth-most** abundant metal on Earth. It exists as **oxides, carbonates, and silicates** and is **naturally found** in food, water, soil, and rocks.
- Its common minerals include **pyrolusite** and **rhodochrosite**, which are mined mainly in **Australia, South Africa, China, Gabon, and Brazil**.
- Extracted through **oxide reduction** or **electrolysis of manganese sulfate**, it is essential for **plant growth** and **nitrate assimilation** in green plants and algae.
- As an **essential trace element**, manganese supports **body homeostasis** but can cause **toxicity** if consumed in excess.

**About Arsenic**

- Arsenic is a **naturally occurring substance** found in air, water, and soil. Inorganic arsenic is highly toxic.
- It is released into the environment through industrial and agricultural activities like **mining** and **smelting**.
- **Exposure** occurs via contaminated water, food, tobacco, and industrial processes.
- Arsenic is a known poison used in **rat poisons, insecticides**, and control applications like **semiconductors, bronzing, pyrotechnics, and wood preservation**.
- It also has applications in making **special glass** and **hardening metals**, though its use is strictly regulated.

**Implications of Contaminations**

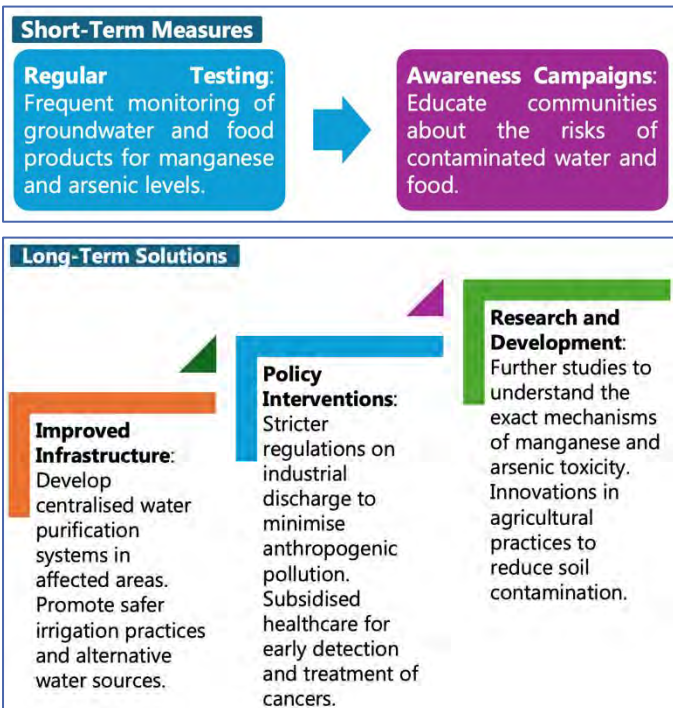
- **Health Impacts:** Arsenic exposure causes chronic health issues like cancers, liver/kidney damage, and cognitive impairments, with infants particularly vulnerable (arsenic is detected in 55% of lactating mothers’ breast milk).



- **Biomagnification:** Arsenic-laden irrigation water contaminates soil, increasing its presence in the food chain.
- **Cancer Rise:** Combined manganese and arsenic contamination has led to a sharp increase in cancer cases in Bihar, with manganese's carcinogenic potential being a novel finding.
- **Agricultural Impact:** Arsenic contamination in staples like rice, wheat, and potatoes exceeds safe limits, threatening food safety and public health.

**PEPPER IT WITH:**  
Environment pollution, water born diseases, IMR, Urbanisation.

**Way Forward:**



**The Digital Frontier of Inequality**

**News Excerpt**

India's **digital revolution** has positioned it as a **global leader** in connectivity and inclusion. However, the rise of **tech-facilitated gender-based violence (TFGBV)** poses a serious threat to the progress made in gender equality and empowerment.

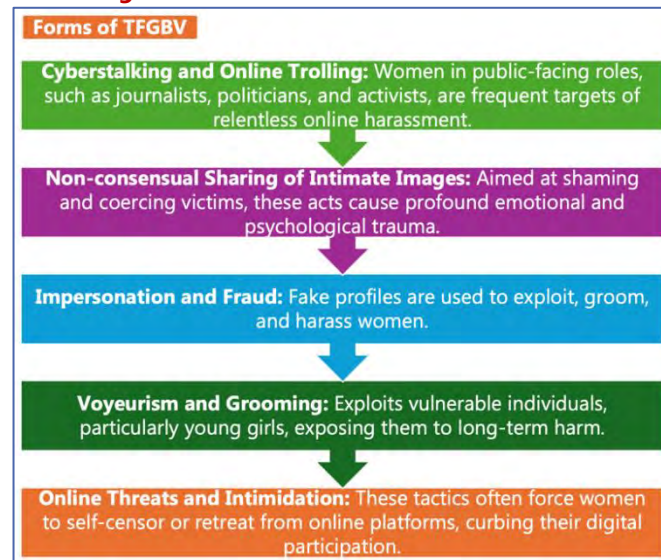
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**India's Digital Landscape**

- **Key Indicators of Growth**
  - **1.18 billion mobile connections** enable unparalleled connectivity.
  - **700 million Internet users**, forming the second-largest online population in the world.
  - **600 million smartphones**, facilitating access to digital services and platforms.
- **Transformative Initiatives**

- **Pradhan Mantri Jan Dhan Yojana (PMJDY):** Financial inclusion has expanded exponentially, with account coverage increasing four-fold since 2015. Women now account for 55.6% of Jan Dhan's accounts, underscoring their growing participation in the financial ecosystem.
- **Jan Dhan-Aadhaar-Mobile (JAM) Linkages:** These enable seamless direct benefit transfers and cashless transactions, especially empowering rural populations.

**The Rising Threat of TFGBV**



**Urban and Rural Challenges**

- **Urban Areas:** Online harassment is rampant among women, particularly those in leadership or high-visibility roles.
- **Rural Areas:** Although rural India now has **20% more Internet users than urban areas (2021 Nielsen report)**, societal norms, limited digital literacy, and lack of awareness about rights exacerbate the vulnerability of women and girls in these regions.

**Impact on Women**

- **Erosion of Digital Empowerment:** The platforms that empower women are becoming hostile spaces, discouraging their active participation.
- **Psychological and Social Costs:** Victims often suffer from trauma, alienation, and reputational harm, leading to diminished confidence and opportunities.
- **Economic Implications:** Withdrawing from digital platforms can restrict women's access to economic and educational opportunities, affecting their overall contribution to society.

**Interventions to Combat TFGBV**

- **Legal Framework**
  - **Information Technology Act, 2000:** Addresses cybercrimes and provides a framework for penalising online abuse.
  - **Bharatiya Nyaya Sanhita, 2024:** Strengthens legal provisions against digital violence and other gender-based crimes.

**Institutional and Policy Initiatives**

- **National Cyber Crime Reporting Portal:** Allows victims to report cybercrimes anonymously.
- **Information Security Education and Awareness Programme:** Enhances digital safety awareness across communities.
- **Digital Shakti Programme:** Aimed at empowering women with digital literacy and tools to navigate online spaces securely.

**International Commitments**

- The **67th Session of the Commission on the Status of Women**, endorsing safeguards for an inclusive ICT environment.
- The **Global Digital Compact**, adopted at the **UN Summit of the Future**, emphasises eliminating tech-facilitated violence.

**PEPPER IT WITH:**  
 Digital Divide, Patriarchy, Gender Sensitisation, Digital Literacy.

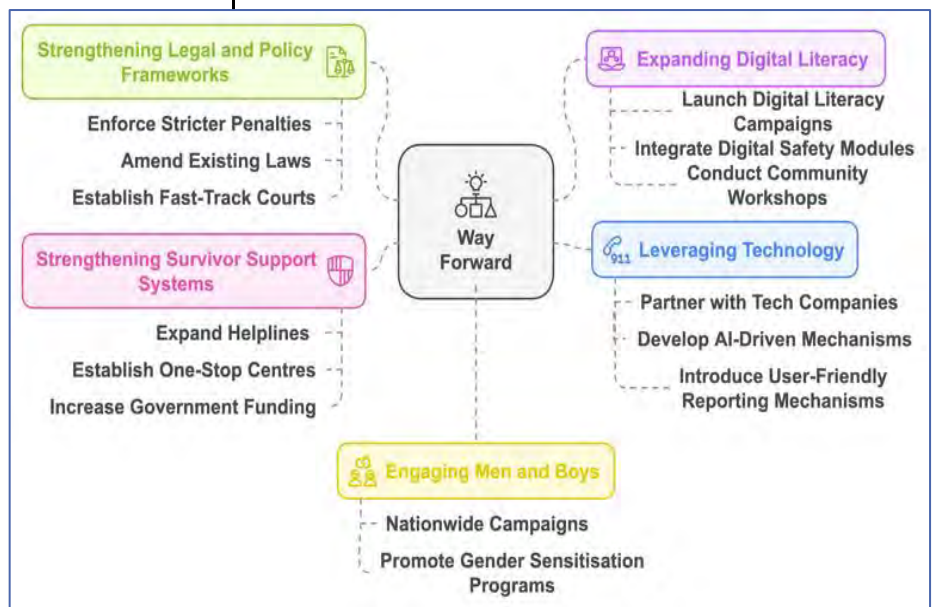
**Challenges in Combating Tech-Facilitated Gender-Based Violence (TFGBV)**

- **Awareness and Digital Literacy Gaps:** Many women, especially in rural areas, lack awareness of their digital rights and mechanisms for reporting abuse. Limited digital literacy makes it harder for victims to navigate online platforms safely.
- **Delayed Enforcement and Justice:** Prosecution of TFGBV cases often faces delays, reducing the deterrent effect of existing laws. Law enforcement agencies lack adequate training to address the unique nature of digital crimes.
- **Societal Norms and Stigma:** Deep-seated patriarchy discourages women from reporting abuse due to fear of victim-blaming and social stigma. Cultural norms often normalise online harassment, perpetuating impunity for perpetrators.
- **Platform Accountability Issues:** Social media platforms are often slow to act on complaints and fail to curb abusive content proactively. Current safety features are insufficient to address the scale and complexity of TFGBV.
- **Economic and Psychological Impact:** Victims face emotional trauma, reputational harm, and withdrawal from digital spaces, limiting their participation in education, employment, and social activities. The economic burden of combating abuse often falls on victims, further exacerbating inequalities.
- **Scalability of Support Systems:** Helplines and support initiatives like **TechSakhi** lack the capacity to handle the

growing volume of cases effectively. Limited access to legal aid and counselling services leaves many victims without adequate support.

**Key Actions for Stakeholders**

- **Government:** Strengthen enforcement mechanisms, enhance digital literacy, and run public awareness campaigns.
- **Tech Industry:** Implement proactive measures to detect and prevent online abuse while offering robust reporting systems.
- **Civil Society:** Advocate for survivors' rights and foster grassroots movements to promote gender equality online.
- **Individuals:** Promote respectful behaviour online, report abusive content, and act as allies in combating TFGBV.



**The Challenge of Universal Health Coverage (UHC)**

**News Excerpt**

India's pursuit of **Universal Health Coverage (UHC)** faces challenges due to diverse health systems, regional disparities, and systemic inefficiencies, necessitating state-specific approaches for a robust and inclusive healthcare framework.

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**Current Status of India's Healthcare Sector**

- **Healthcare Sector** is valued at \$372 billion in 2023, with growth driven by telemedicine, health tech, and medical tourism.
  - **Hospital market** is estimated at \$98.98 billion in 2023, it is projected to double by 2032.
  - The **telemedicine** market is expected to grow to \$5.4 billion by 2025, and the **e-health** market is projected at \$10.6 billion by 2025.

- **Medical tourism** contributed \$7.69 billion in 2024, projected to grow to \$14.31 billion by 2029.
- It employs 7.5 million people. **Doctor-population ratio** is around 1:854 (including AYUSH practitioners), slightly better than WHO's standard of 1:1000.
- **Per capita health expenditure** in Kerala: ₹2,590, Himachal Pradesh: ₹3,829, Bihar: ₹701, and Uttar Pradesh: ₹951. States like Bihar and Uttar Pradesh lag far behind states like Kerala and Tamil Nadu, creating significant health outcome disparities.

**Significance of Universal Health Coverage (UHC)**

- Equity in Access:** Ensures healthcare for all, addressing disparities for marginalized groups like rural communities, women, and informal workers.
- Financial Protection:** Reduces high out-of-pocket healthcare expenses that push millions into poverty by providing public funding or insurance.
- Public Health Outcomes:** Enhances preventive care, reducing disease prevalence, improving life expectancy, and lowering mortality rates.
- Strengthened Systems:** Promotes investments in primary care, infrastructure, and workforce, creating resilient healthcare systems for emergencies.
- Economic Growth:** Healthy populations lead to higher productivity, reduced absenteeism, and sustained economic growth.
- Social Stability:** Builds trust in governance, mitigates inequalities, and fosters political stability.
- Alignment with SDGs:** Supports SDG 3 (Good Health) and contributes to SDGs on poverty reduction, gender equality, and reduced inequalities.
- Pandemic Response:** Bolsters preparedness for crises like COVID-19, ensuring equitable access to vaccines and treatments.

- **Out-of-pocket expenditure (OOPE)** accounts for a majority of health spending in most states, including 67% in West Bengal and 64% in Andhra Pradesh (2019-20). It causes catastrophic health expenditures for 17% of households, impoverishing 55 million people annually.

**Key Challenges to Achieving UHC**

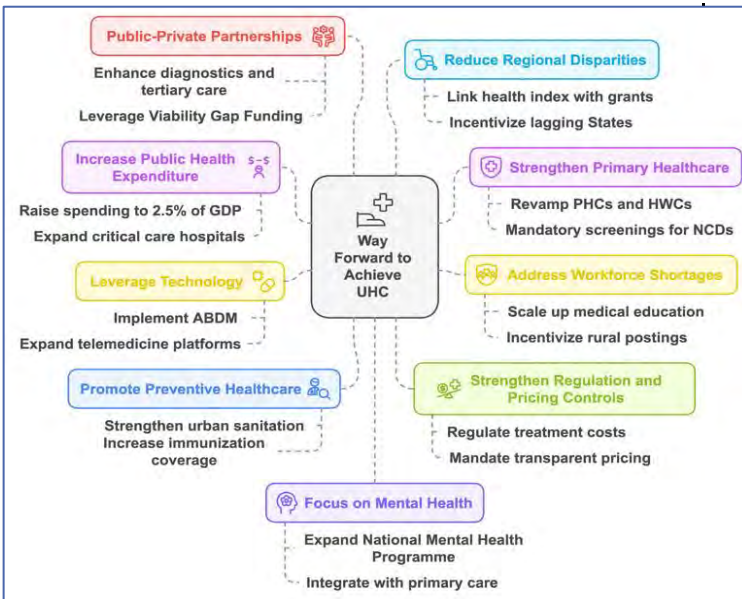
- **Regional Disparities**
  - **Urban-Rural Divide:** 70% of healthcare professionals are concentrated in urban areas, while 65% of the population lives in rural regions.
  - Rural Community Health Centers (CHCs) face an 80% shortage of specialists such as surgeons, physicians, and paediatricians.
  - **State-Specific Health Profiles:** West Bengal has high blood sugar levels but low hypertension rates, requiring targeted interventions for genetically inherited insulin insufficiency.
  - Kerala, Tamil Nadu, and Telangana have high prevalence rates of both hypertension and diabetes.

- **Weak Primary Healthcare System:** Over-reliance on tertiary care leads to late diagnosis of preventable diseases like diabetes and hypertension.
  - For example, there is a 58% shortfall in primary health centres and wellness centres in West Bengal.
  - The lack of robust screening programs exacerbates the disease burden, especially in Uttar Pradesh and Bihar.
- **Implementation Gaps in Government Schemes:** Ayushman Bharat aims to provide health coverage to 50 crore citizens but faces poor implementation.
  - Fraudulent cases in the beneficiary database and limited awareness reduce its effectiveness.
  - CAG Report stated that 7.5 lakh people are linked to a single mobile number in the beneficiary database. Cases of deceased patients continuing to avail treatments.
- **Rising Non-Communicable Diseases (NCDs):** NCDs account for 65-66% of deaths in India (WHO, 2022). Air pollution caused 1.67 million deaths in 2019.
  - 40% of rural households lack safe drinking water, increasing vulnerability to diseases like cholera and typhoid.
- **Poor Health Insurance Penetration:** Only 41% of households have health insurance. 73% of the population lacks health coverage, excluding the informal sector.
- **Dependence on the Private Sector:** The private sector handles 60% of hospitalisations and 70% of outpatient services. Lack of regulation leads to price gouging, undermining affordability.

**PEPPER IT WITH:**  
 Healthcare Equity,  
 Health Insurance,  
 Preventive Healthcare.

**Government Interventions in Healthcare**

- **Pradhan Mantri Jan Arogya Yojana (PMJAY) under Ayushman Bharat:** Launched in 2018, PMJAY provides hospitalisation coverage for secondary and tertiary care to over 50 crore vulnerable individuals.
- **Transformation of PHC's into Health and Wellness Centres (HWCs):** The government plans to convert 1,50,000 health facilities into HWCs offering comprehensive primary healthcare services.
- **National Health Mission (NHM):** Introduced in 2005 as the National Rural Health Mission (NRHM), later expanded to the National Health Mission (NHM) in 2013. Focused on strengthening primary healthcare by developing sub-centres (SCs), primary health centres (PHCs), and community health centres (CHCs).
- **State-Level Initiatives:** States like Maharashtra, Andhra Pradesh, Tamil Nadu, and Kerala have implemented PFHI schemes alongside national programs like PMJAY.



- In *Roopa Soni vs Kamalnarayan Soni* (2023), it affirmed that cruelty lacks a fixed definition and must be determined on a case-to-case basis.
- **Normal Wear and Tear vs. Cruelty:**
- Courts distinguish between ordinary marital discord and actionable cruelty. Trivial quarrels or irritations are insufficient for a divorce (*Samar Ghosh vs Jaya Ghosh*, 2007).

### Mental cruelty: What courts said

- **Supreme Court:** Charges by an estranged spouse affecting other's career amounts to mental cruelty.
- **Delhi High Court:** False allegations of illicit relationship are the ultimate kind of cruelty.
- **Chhattisgarh High Court:** Excessive drinking amounts to cruelty against wife.
- **Calcutta High Court:** Husband has the right to seek divorce on the ground of wife's mental cruelty; Compelling husband to live separately from his parents without justifiable reason amounts to cruelty.
- **Madhya Pradesh High Court:** Woman disrespecting her husband, in-laws is cruelty towards him.
- **Karnataka High Court:** Wife calling husband's skin colour dark amounts to mental cruelty.
- **Allahabad High Court:** Denying sex to spouse for a long time without reason amounts to mental cruelty.
- **Kerala High Court:** Comparing wife with other women amounts to mental cruelty.

## Legal Perspectives of 'Cruelty' in Marriage

### News Excerpt

In a ruling, a two-judge bench of the Supreme Court quashed a cruelty case filed by a woman against her husband's parents, observing that it was filed with the "ulterior motive" of pressuring the husband to agree to a divorce

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### Legal Framework for Cruelty in Matrimonial Law

- **Civil Cruelty:**
  - **Hindu Marriage Act, 1955 (Section 13(1)(ia)):** Cruelty is a ground for divorce. The Act does not define cruelty but allows courts broad discretion to interpret it.
  - Mental cruelty, as opposed to physical, has gained recognition since amendments in 1976 and subsequent case law developments.
- **Criminal Cruelty:**
  - **Indian Penal Code (Section 498A):** Targets cruelty by a husband or his relatives toward a wife, with penalties including imprisonment or fines.
  - Focuses on acts likely to cause grave mental or physical harm, or harassment linked to dowry demands.

### Judicial Interpretations of Cruelty

- **Physical and Mental Cruelty:**
  - Early rulings (e.g., *NG Dastane vs S. Dastane*, 1975) emphasized cruelty as actions causing danger to physical or mental health.
  - Mental cruelty now includes persistent verbal abuse, emotional neglect, and behaviors undermining marital harmony (*Naveen Kohli vs Neelu Kohli*, 2006).
- **Subjective and Contextual Approach:**
  - In *Vishwanath Agrawal vs Sarla Vishwanath Agrawal* (2012), the Supreme Court highlighted the role of social and cultural factors in defining cruelty.

### Diverse Judicial Opinions

Different High Courts have interpreted cruelty in varied ways:

- **Not Cruelty:**
  - A wife's inability to cook (*Kerala High Court*, 2016).
  - Husband's love for a pet cat (*Karnataka High Court*, 2023).
  - Expecting a wife to do household chores (*Delhi High Court*, 2023).
- **Cruelty Found:**
  - A wife refusing to live with her husband's relatives (*Delhi High Court*, 2022).
  - The continued stay of a wife's friends or relatives against the husband's wishes (*Calcutta High Court*, 2023).
- **Special Considerations:**
  - Courts emphasize context, recognizing the evolving nature of cruelty due to societal changes (*Madras High Court*, 2023).

### Way Forward:

- **Lack of Fixed Definition:** Cruelty remains a fluid concept, shaped by individual cases and societal norms.
- **Broadening Interpretation:** Over time, courts have expanded the notion of cruelty to include non-physical harm, reflecting changing societal values.
- **Case-by-Case Analysis:** Courts continue to navigate a fine line between genuine cruelty and normal marital discord.

**PEPPER IT WITH:**  
 Universal civil code, Personal Laws, Social equity.

## Millions of diabetes, heart disease cases globally linked to sugary drinks

### News Excerpt

The study published in Nature Medicine provides a comprehensive analysis of the global health impacts of **sugar-sweetened beverages (SSBs)**.

Researchers assessed data from various countries to estimate the burden of disease attributable to these drinks, focusing on their role in the development of Type 2 diabetes and cardiovascular diseases.

### Methodology

- **Data Collection:** The study utilized health records, consumption statistics, and epidemiological data from multiple regions.
- **Statistical Analysis:** Researchers employed statistical models to estimate the number of new cases of diabetes and cardiovascular diseases directly linked to SSB consumption.

### Key Findings:

#### Global Impact

- **New Cases of Diabetes:** In 2020, SSBs were linked to approximately **2.2 million new cases of Type 2 diabetes** worldwide. This staggering number highlights the direct correlation between sugary drink consumption and the rising incidence of diabetes.
- **Cardiovascular Disease Cases:** The study also found that SSBs contributed to around **1.2 million new cases of cardiovascular disease** in the same year. These conditions are often interrelated, as diabetes significantly increases the risk of heart disease.

#### Death Toll

- The research estimates that SSBs are responsible for about **340,000 deaths each year** due to complications arising from diabetes and cardiovascular diseases. This figure underscores the severe public health implications associated with sugary drink consumption.

#### Regional Disparities:

- **Latin America:** This region has one of the highest rates of SSB-related diabetes cases, with nearly **24%** of new cases attributable to sugary drinks. Countries like Mexico and Brazil exhibit particularly high consumption rates.
- **Sub-Saharan Africa:** The study indicates that around **21%** of new diabetes cases in this region are linked to SSBs. As urbanization increases, so does access to these beverages, exacerbating health issues.
- **Colombia:** Notably, nearly half of all new diabetes cases in Colombia are associated with sugary drink consumption, highlighting a critical public health concern in this country.

#### Demographic Insights:

- **Gender Differences:** The study found that men tend to consume more sugary drinks than women, which may

contribute to higher rates of obesity and related diseases among males.

- **Educational Disparities:** In some regions, higher education levels correlate with lower SSB consumption. However, this trend is reversed in parts of the Middle East and North Africa, where lower education levels correspond with higher intake.

#### Health Implications: Obesity Epidemic

The consumption of SSBs is a significant contributor to the global obesity epidemic. These beverages are high in calories but low in nutritional value, leading to excessive calorie intake without satisfying hunger. This can result in weight gain and increase the risk of obesity-related diseases.

Metabolic Disorders

#### Regular intake of sugary drinks is associated with:

- **Insulin Resistance:** High sugar consumption can lead to insulin resistance, a precursor to Type 2 diabetes.
- **Liver Damage:** Excessive fructose intake from these beverages can lead to non-alcoholic fatty liver disease (NAFLD), which can progress to more severe liver damage.

**Cardiovascular Risks:** The link between SSB consumption and cardiovascular diseases is well-documented:

- **Hypertension:** Sugary drinks can contribute to elevated blood pressure levels.
- **Cholesterol Levels:** They may also negatively affect lipid profiles, increasing LDL (bad cholesterol) levels while decreasing HDL (good cholesterol).

#### Long-Term Complications

The complications arising from diabetes and heart disease can be severe:

- **Diabetes Complications:** These include neuropathy, nephropathy (kidney damage), retinopathy (eye damage), and increased risk for heart attacks and strokes.
- **Cardiovascular Complications:** Patients may face heart failure, arrhythmias, and other life-threatening conditions.

#### Recommendations for Public Health

Given the findings of this study, there is an urgent need for public health interventions aimed at reducing sugary drink consumption:

#### Policy Interventions:

- **Taxation on Sugary Drinks:** Implementing taxes on SSBs has been shown to reduce consumption in various countries.
- **Labeling Requirements:** Mandating clear labeling on sugary drinks can help consumers make informed choices about their dietary habits.
- **Public Awareness Campaigns:** Educating the public about the health risks associated with SSBs can encourage healthier beverage choices.

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**Community Initiatives:**

- **Promoting Water Consumption:** Encouraging communities to choose water or unsweetened beverages over sugary options can significantly improve public health outcomes.
- **School Programs:** Implementing programs in schools that limit access to sugary drinks can help shape healthier habits from a young age.

**PEPPER IT WITH:**  
Diabetes capital, Silent killer, Lifestyle disease.

**Conclusion:**

The findings from this comprehensive study reveal a pressing public health crisis linked to sugar-sweetened beverages. With millions affected by diabetes and cardiovascular diseases as a result of SSB consumption, it is crucial for governments, healthcare providers, and communities to take action. By implementing effective policies and promoting healthier choices, we can work towards reducing the burden of these preventable diseases globally.

**ECONOMY**

**Rising Delinquencies in India's Microfinance Sector: A 2023 Overview**

**News Excerpt:**

As of January 2025, India's microfinance sector is grappling with a significant increase in delinquencies, with overdue loans surpassing **₹28,000 crore** (approximately **\$3.4 billion**). This alarming trend has raised concerns among stakeholders and highlights the urgent need for effective risk management and policy interventions to stabilize the sector.

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**Current State of Microfinance Delinquencies**

According to recent reports, the delinquencies in the microfinance sector have nearly doubled over the past year, with the portfolio at risk (PAR) for loans overdue by 31-180 days reaching **6.8%** of the total microfinance portfolio, which stands at **₹4.14 lakh crore** (approximately **\$50 billion**) as of September 2024.

This marks a significant increase from **3.8%** in September 2023. The incremental rise in delinquent loans amounted to **₹13,468 crore** over the past year, with states like **Bihar, Uttar Pradesh, Tamil Nadu, and Odisha** accounting for **62%** of the total increase in delinquencies. Bihar alone reported an increase of **₹1,715 crore**, followed by Uttar Pradesh with **₹1,441 crore**.

**Factors Contributing to Rising Delinquencies**

Several intertwined factors have contributed to this surge in delinquencies:

- **Borrower Overleveraging:** Many borrowers are taking on multiple loans from various sources,

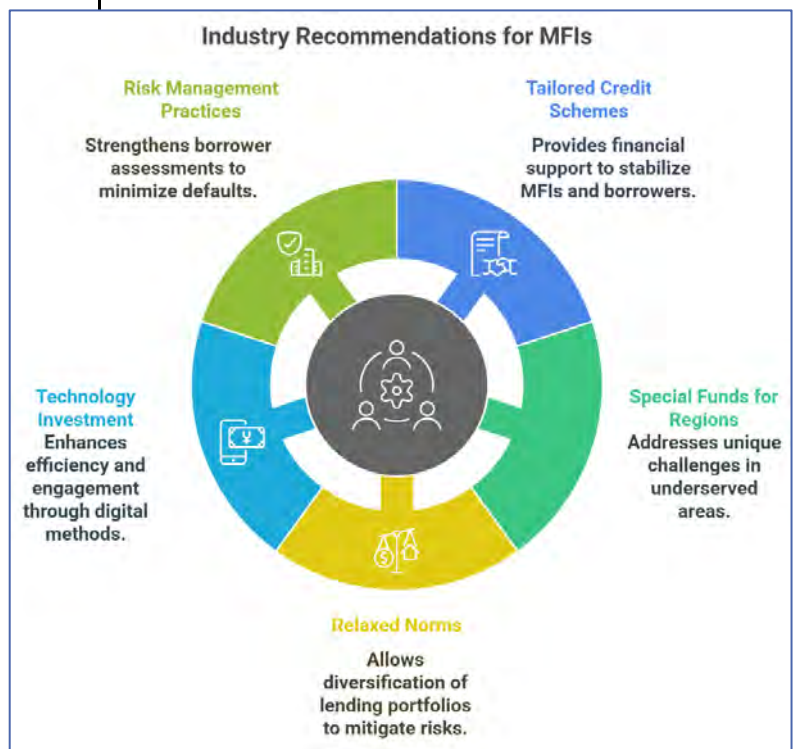
leading to excessive debt burdens that they struggle to repay.

- **Economic Distress:** The broader economic slowdown has reduced income levels for many borrowers, impacting their ability to meet repayment obligations.
- **Political and Social Factors:** Debt-waiver campaigns initiated by state governments have disrupted repayment cycles, while elections and extreme weather conditions have hindered loan recovery efforts.
- **Operational Challenges:** High attrition rates among field staff have affected loan disbursement quality and collection efficiency.
- **Fraud Incidents:** Instances of fraud and misrepresentation have increased operational risks within microfinance institutions (MFIs).

**Impact on Microfinance Institutions:**

The rising delinquency rates pose significant challenges for MFIs:

- **Increased Credit Costs:** The cost of credit for non-banking financial companies (NBFCs) and MFIs is expected to rise due to higher delinquencies, potentially increasing from **220 basis points (bps)** to between **320-340 bps** in the current financial year.
- **Contraction of Loan Portfolios:** The overall microfinance portfolio has contracted from **₹4.32 lakh crore** to **₹4.14 lakh crore**, reflecting a decline in lending activity amid rising risks.
- **Reduced Lending Capacity:** As asset quality deteriorates, MFIs may become more cautious in extending new credit, which could hinder financial inclusion efforts for underserved populations.



**Conclusion**

The rise in delinquencies within India's microfinance sector presents a complex challenge that requires immediate attention from policymakers, industry leaders, and regulatory bodies.

**PEPPER IT WITH:**  
 Microloans, NPA challenges, MSME Growth Challenges.

By adopting strategic interventions aimed at enhancing financial stability and borrower resilience, stakeholders can work together to navigate these turbulent times.

As India continues its journey towards greater financial inclusion, ensuring the sustainability of the microfinance sector will be crucial not only for the millions who rely on these services but also for the overall health of the economy. Addressing the underlying issues contributing to rising delinquencies will be essential for fostering a robust microfinance ecosystem capable of supporting growth and development across diverse communities.

**'Intelligent machines' for Highways construction**

**News Excerpt**

The Ministry of Road Transport & Highways (MoRTH) is adopting **Automated & Intelligent Machine-aided Construction (AIMC)** systems to address significant delays in completing National Highway projects and to enhance the quality and efficiency of highway construction.

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**Key Objectives of AIMC**

- **Real-time Project Monitoring:** AIMC provides real-time data on construction progress, reducing manual surveys and ensuring stakeholders, including MoRTH, receive timely updates.
- **Enhanced Efficiency:** With AIMC, surveys and construction occur simultaneously, expediting project completion and ensuring work continues even during night hours.
- **Improved Quality and Longevity:** Intelligent machines enhance the durability of roads by ensuring precise measurements and minimizing post-construction issues like soil consolidation.

**Why is AIMC Needed?**

**Current Challenges in Highway Construction**

- **Delays:** Out of 952 ongoing highway projects in March 2024, 419 projects exceeded their schedules.
- **Outdated Technology:** Use of older, less efficient construction methods contributes to delays.
- **Quality Control Issues:** Surveys are traditionally conducted after each construction phase, slowing down progress and leaving room for quality compromises.

**Global Inspiration**

- MoRTH has studied systems from the **US, Norway, and EU countries** where AIMC is implemented successfully to develop this nationwide strategy.

**What are AIMC Machines, and How Will They Work?**

- **GPS-Aided Motor Grader:**
  - Uses **3D machine control technology** to align construction work with digital design plans.
  - Ensures precise grading of layers like embankments and base pavement.
- **Intelligent Compaction (IC) Roller:**
  - Used for compacting soil, subbase, and base layers.
  - Reduces voids and air pockets, enhancing road stability and preventing future damage.
- **Stringless Paver:**
  - Lays pavement layers without traditional stringline setups, improving precision and speed.

**Workflow:**

- Machines are fed project-specific data.
- They process real-time inputs from GPS and sensors.
- Data on progress, quality, and compliance is sent to stakeholders for continuous monitoring.

**Pilot Testing in India**

- The 63-km **Lucknow-Kanpur Expressway** project has served as a pilot for AIMC.
- Technologies like **GPS-aided motor graders, IC rollers, and stringless pavers** have been used successfully, showcasing significant efficiency improvements.

**Expected Benefits of AIMC**

**Timely Completion of Projects**

- Real-time tracking and continuous work capabilities (including nighttime operations) reduce delays.

**Cost and Manpower Optimization**

- Automated systems reduce dependency on manual labor and frequent post-construction surveys.

**Better Road Quality**

- Intelligent machines ensure precise construction, reducing future maintenance costs.

**Nationwide Application**

- After successful pilot testing, AIMC will be adopted across all National Highway projects.

**PEPPER IT WITH:**  
 Infrastructure sector, Improving Efficiency and Innovation.

**India's Road Development Goals**

- India's National Highway network is currently **1.46 lakh km**, including 3,000 km of high-speed corridors.
- The aim is to build an additional **45,000 km** of highways by 2047.
- Adopting AIMC will be pivotal in achieving these ambitious targets efficiently and sustainably.

**Conclusion**

The deployment of AIMC systems reflects MoRTH's commitment to modernizing India's highway construction process.

By leveraging intelligent machines, the Ministry aims to overcome delays, enhance quality, and meet its long-term infrastructure development goals effectively.

## Indian rupee falling

### News Excerpt

The **Indian rupee's exchange rate against the US dollar** has breached the **85 mark**. In other words, **one would have to pay Rs 85 to buy \$1**. In April, this "exchange rate" was **around 83 and a decade ago, when Prime Minister Narendra Modi took charge, it was around 61**. As such, the rupee has been weakening in value relative to the dollar.

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As of **January 12, 2025**, the Indian Rupee (INR) has fallen to record lows against the US Dollar (USD), trading at approximately **86.1 INR per USD**. This depreciation is attributed to several factors, including economic indicators, global market dynamics, and political events. Understanding these causes is essential for evaluating the broader implications for the Indian economy.

Key Factors Contributing to the Fall of the Indian Rupee

### Strengthening of the US Dollar

The US Dollar has strengthened significantly due to a robust macroeconomic environment in the United States. Key factors include:

- **High US Bond Yields:** Expectations of shallow rate cuts by the Federal Reserve have led to increased US bond yields, making US assets more attractive to investors compared to emerging markets like India.
- **US Economic Performance:** Positive economic indicators from the US, including strong employment data and GDP growth, have bolstered confidence in the dollar.

### Trade Deficit

India's trade deficit has widened considerably, reaching **\$26.83 billion** in October 2024. This increase signifies a higher demand for dollars to pay for imports, particularly essential commodities like crude oil and electronics. The rising trade deficit contributes directly to downward pressure on the rupee.

### Capital Outflows

Foreign Portfolio Investors (FPIs) have pulled out significant amounts from Indian markets, with net outflows reaching approximately **₹43,856 crore** in 2024 alone. This withdrawal of capital exacerbates the rupee's depreciation as it reduces demand for INR.

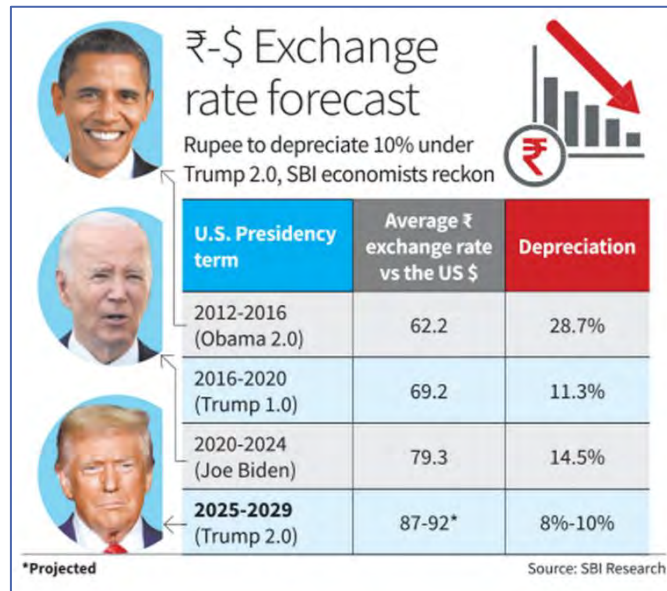
### Geopolitical Tensions

Ongoing geopolitical issues, such as the Russia-Ukraine war and tensions in the Middle East, have contributed to volatility in global markets. These tensions can lead to

fluctuations in oil prices and investor sentiment, further impacting currency stability.

### Inflationary Pressures

India's retail inflation has remained above the Reserve Bank of India's (RBI) target range for most of 2024, peaking at **6.77%** in October. High inflation diminishes purchasing power and can make Indian exports less competitive



compared to other countries with lower inflation rates.

### US Federal Reserve Policies:

- Higher US interest rates have led to significant foreign portfolio outflows from Indian equity and debt markets.
- The attractiveness of dollar-based investments has drawn capital away from emerging markets like India.

### Oil Imports:

- India's heavy reliance on crude oil imports creates constant demand for dollars, especially when global oil prices rise.

### Geopolitical and Economic Factors:

- Global uncertainty due to conflicts, supply chain disruptions, or slowing economic growth has strengthened the dollar.



### The Role of RBI Actions

The Reserve Bank of India (RBI) has taken several measures in response to the falling rupee:



- **Monetary Policy Adjustments:** The RBI has been cautious with interest rate changes due to inflationary pressures but may consider rate hikes if depreciation continues to impact economic stability.
- **Forex Market Interventions:** The RBI has intervened in foreign exchange markets by selling dollars to stabilize the rupee and mitigate excessive volatility.
- **Promoting Foreign Investment:** The RBI has introduced measures aimed at attracting foreign investments through regulatory reforms and incentives.
- **Monitoring External Debt:** With India's external debt standing at approximately **\$620.7 billion**, the RBI is closely monitoring debt servicing costs that could rise due to currency depreciation.

**PEPPER IT WITH:**  
Export-Import Challenges, Flight of capital, Outflow of Dollars.

**Impact of Political Events: The Trump Election**

The recent election of Donald Trump as President of the United States has introduced uncertainty regarding future US policies that may impact global markets:

- **Potential Policy Changes:** Trump's administration may pursue protectionist trade policies or changes in foreign relations that could affect India's export opportunities and investment climate.
- **Investor Sentiment:** Political uncertainty can lead to volatility in financial markets as investors reassess risks associated with emerging markets like India.

**What is the Exchange Rate?**

- The exchange rate represents how much of one currency is needed to buy another. For example, if the rupee-dollar exchange rate is 85, you need **₹85 to buy \$1**.

**What Determines the Exchange Rate?**

- Exchange rates are driven by **demand and supply** in the currency market. If the demand for US dollars is higher than the demand for Indian rupees, the dollar strengthens, and the rupee weakens.

**Long-Term Trends**

- When Prime Minister Modi assumed office in 2014, the rupee traded at around **₹61 per dollar**.
- Over the decade, structural issues like inflation, trade deficits, and slower global growth have caused it to weaken gradually to **₹85 per dollar**.

**Impacts of a Weakening Rupee**

- **Higher Import Costs:**
  - Imports, especially essential goods like oil, become more expensive, increasing inflation domestically.
- **Pressure on Foreign Reserves:**
  - The Reserve Bank of India (RBI) has to sell dollars from its reserves to stabilize the rupee, reducing its foreign exchange reserves.

**Export Competitiveness:**

- A weaker rupee can make Indian exports more competitive globally, benefiting sectors like IT and textiles.

**What Can Be Done?**

- **Monetary Policy:**
  - The RBI can raise interest rates to make Indian assets more attractive to investors, stabilizing the rupee.
- **Reducing Trade Deficits:**
  - Promoting exports and reducing dependence on imports, especially for oil and high-value goods, can lower dollar demand.
- **Improving Domestic Investment Climate:**
  - Attracting long-term foreign direct investments (FDI) and fostering economic stability can boost rupee demand.

**Conclusion**

- The rupee's fall is driven by a mix of global factors like US monetary tightening and domestic issues like inflation and trade imbalances.
- While short-term measures can provide relief, addressing structural challenges is essential for long-term currency stability.

**Economic Losses from Natural Catastrophes in India: A 2023 Report**

**News Excerpt**

In 2023, India faced significant economic challenges due to natural catastrophes, with estimated losses exceeding **₹1 lakh crore** (approximately **\$12 billion**).

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1					7						
2					8						
3					9						
4					10						
5					11						
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This report highlights the impact of these disasters on the economy, society, and infrastructure, emphasizing the urgent need for enhanced disaster preparedness and resilience strategies.

**Overview of Natural Disasters in 2023**

According to the Emergency Events Database (EM-DAT), a total of **399 natural disasters** were recorded globally in 2023, leading to economic losses of approximately **\$380 billion**. In India, the primary contributors to economic losses were severe flooding and droughts, exacerbated by climate change and inadequate infrastructure.

- **Flooding:** Seasonal floods caused significant damage across various states, particularly affecting agricultural lands and rural communities. For instance, heavy rainfall during the monsoon season led to extensive flooding in states like Bihar and Uttar Pradesh, resulting in substantial crop losses and displacement of populations.
- **Droughts:** The Indian subcontinent also experienced severe drought conditions, impacting water availability for irrigation and drinking purposes. This situation was

particularly dire in regions dependent on agriculture, leading to food insecurity and economic distress for farmers.

**Key Statistics**

- **Economic Impact:** The total economic losses due to natural disasters in India were estimated at **₹1 lakh crore**, reflecting a substantial burden on the national economy.
- **Fatalities and Displacement:** Natural disasters resulted in approximately **2,653 fatalities** in India alone. Moreover, millions were affected, with entire communities displaced due to flooding and other catastrophic events.
- **Insurance Coverage Gap:** A significant proportion of the economic losses remained uninsured. Reports indicate that only about **9% of total losses** were covered by insurance, highlighting a critical protection gap that exacerbates financial vulnerabilities for affected populations.

**Case Studies of Major Disasters**

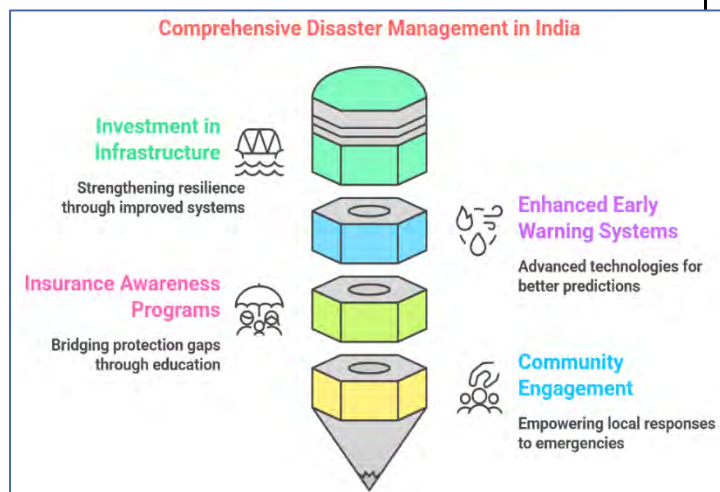
1. **Cyclone Michaung (December 2023):**

- Cyclone Michaung struck the eastern coast of India, leading to severe flooding that affected over **4.4 million people**. The cyclone caused extensive damage to infrastructure, homes, and agricultural fields. The government's response included immediate relief efforts and long-term rehabilitation plans.

2. **Drought in Southern India:**

- Southern states experienced prolonged drought conditions that severely impacted crop yields. Farmers faced significant economic losses due to failed harvests, leading to increased debt levels and heightened distress among rural communities.

**Government Response and Future Strategies**



**Conclusion:**

The economic losses from natural catastrophes in India during 2023 underscore the urgent need for comprehensive disaster risk management strategies. With climate change intensifying weather patterns and increasing the frequency

of extreme events, it is imperative for policymakers to prioritize resilience-building measures.

By investing in infrastructure, enhancing early warning systems, promoting insurance coverage, and fostering community engagement, India can better prepare for future challenges posed by natural disasters.

The lessons learned from 2023 should serve as a catalyst for action towards a more resilient future, ensuring that vulnerable populations are protected against the devastating impacts of natural catastrophes.

**PEPPER IT WITH:**  
 Environment Justice,  
 Disaster Management,  
 Disaster Mgmt Act.

**Targeted Interventions in Labour-Intensive Sectors**

**News Excerpt**

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2					8						
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4					10						
5					11						
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In an engaging discussion with Confederation of Indian Industry (CII) president Sanjiv Puri, he emphasized the need for targeted interventions in labor-intensive sectors and Micro, Small, and Medium Enterprises (MSMEs) to elevate India's economic growth. As the country faces a projected GDP growth rate of 6.4% in FY25, Puri advocates for strategic measures to harness the potential of various sectors, reinforcing India's economic foundation.

**Current Economic Landscape**

Sanjiv Puri recognizes that while a 6.4% GDP growth under current global stressors may seem modest, it reflects resilience given the context of subdued merchandise exports and ongoing inflation. He highlights the transitional factors affecting the economy, such as election cycles and weather patterns, which influenced the initial growth figures. The CII president encourages stakeholders to focus on enhancing this growth, aiming for a long-term target between 7% and 8%.

**Sector-specific Solutions**

Puri calls for a robust focus on labor-intensive sectors such as footwear, apparel, tourism, and furniture, where targeted interventions can yield significant results. By learning from sectors that have thrived, India can implement strategies that promote growth across different industries, especially those contributing substantially to employment.

• **Manufacturing Resurgence:**

- The recent resurgence in manufacturing has opened avenues for exploring new sectors and boosting exports.
- Puri emphasizes the need for targeted support in these industries to maximize their potential.

• **Strengthening MSMEs:**

- With MSMEs driving a large segment of employment, the continuation and enhancement of supportive

government schemes like the Emergency Credit Line Guarantee Scheme (ECLGS) are crucial.

- A push towards a unified platform for MSMEs—integrating existing services like Udyam, TReDS, GeM, and the upcoming ONDC—can facilitate seamless access to resources.
- **Global Value Chain Integration:**
  - Puri stresses the importance of integrating more sectors into global value chains.
  - Investment strategies should align with trade and infrastructure policies, maintaining a competitive edge through a rationalized duty structure.

**Corporate Investment Trends**

Addressing the concern of corporate investment levels post-corporate tax cuts, Puri refutes the notion that larger corporates have failed to invest adequately. He notes that despite the challenges posed by the pandemic and global economic turmoil, private capital expenditure as a percentage of GDP has surpassed pre-COVID levels. He cites data showing an increase in capital expenditure announcements, reflecting optimism among corporate members.

**Wage Growth and Employment Quality**

The CII president acknowledges challenges related to wage stagnation but emphasizes that private sector companies regularly adjust wages to retain talent, factoring in inflation and market dynamics. The larger issue revolves around the creation of quality jobs to support sustained economic growth.

**Agricultural Importance**

Puri reiterates the significance of agriculture, which employs nearly half of India's workforce. He advocates for reforms to improve farmer incomes through technology and supportive schemes for farmers' producer organizations (FPOs). Enhancing agricultural productivity will contribute significantly to rural economic vitality.

**Creating Quality Jobs**

To foster good-quality jobs, Puri recommends targeting labor-intensive sectors and leveraging technological advancements and the emerging services sector, particularly in global capability centers (GCCs) and IT. He envisions integrated rural hubs equipped with essential services—healthcare, education, and skilling—to build human capital and improve rural livelihoods.

**Export Competitiveness**

Addressing the issues faced by export-oriented sectors like textiles, Puri suggests that tariffs and Quality Control Orders (QCOs) should be examined critically to ensure they do not hinder competitiveness. An integrated approach to trade, investment, and skill development must be adopted at the sectoral level to enhance India's positioning in global markets.

**Strategic Relations with China**

Given the rising dependence on China for raw materials, Puri acknowledges that some level of reliance may be

unavoidable. He proposes that India's approach towards China should balance competitive pricing with building domestic capabilities, ensuring that strategic interests are not compromised while achieving economic objectives.

**Conclusion**

Sanjiv Puri's insights underscore the urgency for targeted interventions in labor-intensive sectors and the MSME segment to catalyze economic growth in India. By fostering manufacturing resurgence, strengthening MSMEs, integrating into global value chains, and enhancing agricultural productivity, India can create quality jobs and reinvigorate its economic landscape. As the country navigates a complex global environment, a strategic approach focusing on collaboration, innovation, and support for existing sectors will be vital in reaching its growth aspirations. Through these measures, India can position itself for sustainable development and resilience in the face of future challenges.

**PEPPER IT WITH:**  
Labour Reform, Gender Pay Gap, Job Creating Avenues,

**Bitcoin Strategic Reserve**

**News Excerpt**

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1					7						
2					8						
3					9						
4					10						
5					11						
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The idea of a **U.S. Bitcoin Strategic Reserve**—proposed by President-elect Donald Trump—draws on the concept of strategic stockpiles like the **Strategic Petroleum Reserve (SPR)** but applies it to digital assets.

**What Is a Strategic Reserve?**

A strategic reserve is a stockpile of critical resources held by the government to ensure availability during crises or supply disruptions. Examples include:

- **U.S. Strategic Petroleum Reserve:** Established in 1975 to mitigate oil shocks.
- **China's Grain and Pork Reserves:** To stabilize food markets.
- **Canada's Maple Syrup Reserve:** To control supply and pricing.

Bitcoin, unlike oil or food, is a digital asset and doesn't have intrinsic physical utility, but its global importance as a decentralized store of value and medium of exchange is growing.

**How a U.S. Bitcoin Reserve Could Be Established Potential Methods:**

- **Executive Order:**
  - Trump could direct the Treasury's Exchange Stabilization Fund (ESF), which manages foreign currency reserves, to acquire and hold bitcoin.
  - The ESF has broad discretionary powers and could theoretically expand its portfolio to include bitcoin.
- **Congressional Legislation:**
  - Congress could pass a law creating a dedicated Bitcoin Strategic Reserve, detailing funding sources and management protocols.

- **Seized Bitcoin as a Starting Point:**
  - The government already holds approximately 200,000 bitcoins (worth ~\$21 billion at current prices) from seizures in criminal cases. This could serve as the foundation for the reserve.
- **Purchasing Bitcoin on Open Markets:**
  - To expand the reserve, the government could issue debt or sell assets like gold to fund bitcoin purchases.

**Storage and Security:**

- Bitcoin would likely be stored in highly secure government-controlled cold wallets (offline wallets) to minimize hacking risks.
- Specialized agencies, such as the U.S. Treasury or Federal Reserve, might oversee management.

**Potential Benefits of a Bitcoin Reserve**

**Economic Leverage and Financial Strategy:**

- **Global Market Dominance:**
  - Holding a significant bitcoin reserve could position the U.S. as a key player in the global crypto economy, reducing China's growing influence in the sector.
- **Asset Appreciation:**
  - Bitcoin's historical trajectory suggests long-term price growth, potentially allowing the U.S. to bolster its financial position and reduce deficits.
- **Dollar Strength:**
  - By associating bitcoin with U.S. economic stability, the government could further reinforce the dollar's status as the world's reserve currency.

**Geopolitical and Strategic Advantages:**

- **Economic Defense Against Adversaries:**
  - A large bitcoin reserve could serve as a counterbalance to financial systems manipulated by rival nations like China and Russia.
- **Future-Proofing Financial Policy:**
  - If bitcoin adoption continues to grow, a reserve could ensure the U.S. remains at the forefront of financial innovation.

**Potential Risks and Challenges**

**Economic and Market Risks:**

- **Volatility:**
  - Bitcoin's price is highly volatile. Sudden changes could lead to significant valuation swings, impacting the reserve's effectiveness.
- **Market Impact:**
  - Government purchases or sales could distort bitcoin's price, given the relatively limited supply (21 million cap).
- **Uncertain Long-Term Value:**
  - Critics argue bitcoin lacks intrinsic value, and its price relies on market sentiment rather than utility.

**PEPPER IT WITH:**  
Crypto currencies, new asset classes, Crypto regulations in India.

**Security Concerns:**

- **Cybersecurity Threats:**
  - Bitcoin wallets are vulnerable to cyberattacks, posing a significant risk to government-held reserves.
- **Custody and Management:**
  - Mismanagement or insider threats could jeopardize the reserve's integrity.

**Legal and Political Hurdles:**

- **Authorization:**
  - It's unclear whether Trump's administration could implement the plan without Congressional approval.
- **Public Perception and Opposition:**
  - Critics might view such a move as speculative or inappropriate use of taxpayer resources.

**Way Forward**

The creation of a **U.S. Bitcoin Strategic Reserve** would mark a major policy shift, signaling that **digital assets are an integral part of the financial system**. To succeed, the government would need:

- Robust legislation or executive authority.
- Secure and transparent custody mechanisms.
- A clear strategy for leveraging the reserve during crises or for financial stability.

Whether the plan materializes or not, the proposal underscores the **growing importance of cryptocurrencies in global finance and geopolitics**.

**AGRICULTURE**

**The Rise of Gender-Inclusive Agritech**

**News Excerpt**

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1					7						
2					8						
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Agricultural technology (agritech) is rapidly transforming farming practices worldwide, and gender inclusivity in this sector is emerging as a crucial element for sustainable growth.

Women, who form **43% of the agricultural workforce in developing countries**, often face systemic barriers like restricted land ownership, limited financial access, and lower digital literacy. Closing this gender gap in agriculture could increase farm outputs by **20–30%**, according to a report by the **World Economic Forum (WEF)**.

**Empowering Women Farmers Through Agritech**

Agritech initiatives tailored to the needs of women farmers have shown tangible results. For instance:

- **Vanita Tai Vithal**, a farmer in Maharashtra, India, increased paddy production by **25%** in four years by leveraging agritech training and online resources.
- Companies like **UPL**, **Yara India**, and **Bayer India** have launched gender-inclusive programs that empower women farmers through technology, capacity-building, and financial support.

**The Business Case for Gender-Inclusive Agritech**

The WEF's report, **Agritech for Women Farmers: A Business Case for Inclusive Growth**, highlights the strong economic and social incentives for agritech firms to engage women farmers:

- **Expanding Market Potential:** Women farmers represent an untapped customer base, offering significant business opportunities for agritech companies.
- **Boosting Productivity:** Gender-inclusive practices can enhance agricultural output and rural economic growth.
- **Building Credibility:** Companies that adopt gender-inclusive approaches gain trust in rural markets and establish themselves as leaders in sustainability and innovation.

### Challenges Women Face in Agriculture

Despite their vital role, women farmers encounter numerous obstacles:

- **Structural Barriers:** Limited access to land, financial services, and smartphones restricts their ability to leverage agritech solutions.
- **Digital Divide:** While the gender gap in smartphone access is narrowing, many women still lack digital literacy to fully utilize online tools.
- **Underrepresentation:** A lack of women in leadership roles within agritech companies limits the development of gender-inclusive products and strategies.

### Successful Agritech Case Studies

Several organizations have made significant strides in empowering women farmers:

- **Nagro Agro Crédito (Brazil):** Provides customized credit solutions for women farmers, leveraging data platforms to lower default rates and enhance financial inclusion.
- **Farmerline (Ghana):** Uses mobile technology to deliver agricultural information and financial services, with over **50% of its team comprising women aggregators.**
- **Bayer India (India):** Established **27 women-run Krishi Seva Kendras**, impacting over **12,000 farmers** since 2021.
- **UPL (India):** Operates programs across **25,000 acres**, with **2,000 acres managed by women**, offering sustainable farming solutions.

### The "5Ps" Formula for Agritech Companies



### A Collaborative Path Forward

While companies play a vital role, systemic change requires **multi-stakeholder collaboration**:

- **Governments:** Address structural issues like land ownership, digital literacy, and internet access.
- **Private Sector:** Develop inclusive products and invest in women-friendly marketing strategies.
- **Developmental Organizations:** Foster community-level training and support systems.

### Agritech

Agritech is characterized by the use of advanced technologies in agriculture, horticulture, and aquaculture. It includes various tools and methodologies that optimize farming processes, such as:

- **Precision Agriculture:** Utilizing GPS, drones, and sensors to gather data for informed decision-making.
- **Biotechnology:** Applying genetic engineering techniques to develop crops with desirable traits, such as drought resistance or pest tolerance.
- **Automation:** Implementing robotics and AI-driven solutions to streamline operations, reduce labor costs, and increase efficiency.

Agritech is “the application of technology and digital tools to farming,” which encompasses everything from automated machinery to sophisticated data analysis systems.

### Importance of Agritech

The significance of agritech lies in its potential to address critical issues in agriculture:

- **Food Security:** With the global population expected to reach 9.7 billion by 2050, agritech plays a vital role in increasing food production sustainably.
- **Resource Efficiency:** Technologies such as precision irrigation help conserve water and reduce input costs.
- **Climate Resilience:** Innovative practices enable farmers to adapt to changing climatic conditions and mitigate risks associated with extreme weather events.

### Examples of Agritech Innovations in India

- **Ninjacart:** Ninjacart is a Bengaluru-based startup that connects farmers directly with retailers and businesses through a tech-driven supply chain.
  - Impact:** By reducing intermediaries, Ninjacart helps farmers get better prices for their produce while ensuring fresh delivery to consumers.
- **AgroStar:** AgroStar is an online platform that provides farmers with access to quality agricultural inputs and expert advice through a mobile app.
  - Impact:** The platform empowers farmers with knowledge about best practices while simplifying the procurement process for fertilizers, seeds, and pesticides.
- **DeHaat:** DeHaat offers a one-stop solution for farmers by providing agricultural services including input supply, advisory services, and market linkages through its digital platform.
- **CropIn Technology Solutions: Overview:** CropIn provides smart agriculture solutions through its software platform that uses AI and data analytics for crop monitoring and management.
  - Impact:** The platform helps farmers make data-driven decisions, improving yield quality and reducing losses.

**Kisan Network: Overview:** Kisan Network is an agri-tech startup that connects farmers directly with buyers using a mobile app. **Impact:** This initiative reduces dependency on middlemen, allowing farmers to receive fair prices for their produce while ensuring transparency in transactions.

**Conclusion**

- The **intersection of gender inclusivity and agritech** presents a unique opportunity to transform global agriculture. By engaging women farmers, businesses not only unlock new markets but also contribute to food security and sustainable development.

**PEPPER IT WITH:**  
Women participation in Agriculture, Gender Empowerment.

As **climate change and population growth** exert pressure on agriculture, empowering women through agritech could be the key to building resilient and equitable food systems.

**House Panel Advocates for Legalised MSP**

**News Excerpt**

A recent report tabled by the **Standing Committee of Parliament on Agriculture**, led by Congress leader Charanjit Singh Channi, has emphasized the need for **legally guaranteed Minimum Support Price (MSP)** for agricultural crops. The committee asserts that this policy can address the long-standing issue of **farmer suicides** while promoting rural development and national food security.

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**Major Recommendations by the Committee**

- Legalised MSP:** Advocated as essential for **safeguarding farmer livelihoods** and **stabilizing food production levels**. Aimed at **mitigating market volatility** and ensuring consistent income for farmers, which could reduce the risk of debt and financial distress.
- Increase in PM-KISAN Assistance:** Proposed raising the annual assistance under **PM-KISAN** from ₹6,000 to ₹12,000. Recommended extending benefits to **tenant farmers** and **farm labourers**.
- Targeted Debt Relief:** Suggested introducing a **debt waiver scheme** to prevent farmers from falling into debt traps.
- National Commission for Farm Labourers:** Called for establishing a **National Commission for Minimum Living Wages for Farm Labourers**, addressing the rights and financial stability of this group.

**Why Legalised MSP is Crucial**

- Economic Stability for Farmers:** Legalised MSP ensures a guaranteed income, helping farmers withstand **market fluctuations**. Encourages investments in modern agricultural practices, leading to **higher productivity**.
- Reducing Farmer Suicides:** Provides financial security, alleviating the burden of **insurmountable debts**. Improves **mental health** by reducing stress related to uncertain incomes.
- Stimulating Rural Economies:** Increased farmer income would stimulate **local businesses and economies**. Ensures better purchasing power and economic activity in rural areas.
- Enhancing Food Security:** Consistent production supported by MSP can contribute to **long-term food security** for the nation.

**Challenges and Counterarguments**

Critics of legalised MSP have expressed concerns about:

- Inflationary Pressure:** Critics argue that increasing MSP could lead to higher food prices. However, Vice-President **Jagdeep Dhankhar** has dismissed this, asserting that benefits to farmers would multiply for the nation.
- Fiscal Burden:** Implementing a legally binding MSP system may strain government finances.
- Market Distortions:** Guaranteed MSP may discourage diversification and lead to overproduction of select crops.

**Panel's Roadmap and Vision**

**The report urges the Centre to:**

- Develop a **clear roadmap** for the legal implementation of MSP.
- Introduce targeted policies to **alleviate rural indebtedness**.
- Prioritize the **well-being of farm labourers** through a dedicated commission.

**PEPPER IT WITH:**  
MSP reforms, Food inflation, Agriculture Income.

Predicting that legalised MSP will be a **game changer**, the panel underscores its potential to address farmer suicides, promote rural economic growth, and stabilize India's agricultural sector.

**Conclusion**

- The **recommendation for legalised MSP** reflects the urgent need to reform agricultural policies in India. While challenges remain, the proposal offers a promising path to improve farmer welfare, boost rural economies, and strengthen national food security.
- The Centre's response to this call for transformative action will determine its impact on India's agricultural future.

**INTERNATIONAL RELATIONS**

**China Approves World's Largest, \$137-Billion Dam on the Brahmaputra Close to the Indian Border**

**News Excerpt**

China has **approved the construction** of the **world's largest dam on the Brahmaputra River** in Tibet, near the Indian border.

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This ambitious project, costing **\$137 billion**, has raised significant concerns in **downstream countries, particularly India and Bangladesh**. The dam, **part of China's broader renewable energy initiatives**, promises to harness immense hydropower potential but also brings with it geopolitical and environmental challenges.

**The River**

- The Brahmaputra River, called Yarlung Tsangpo** in China, is one of the longest rivers in the world. Starting in the Himalayas in Tibet, it enters India in Arunachal Pradesh, then passes through Assam, Bangladesh, and empties into the Bay of Bengal.

- The Brahmaputra, a perennial river, is the lifeline for communities living along its banks. They use it for irrigation, fisheries, and inland water transport. In its lower course, the river is both an advantage and a disadvantage.
- On the one hand, it **deposits huge quantities of fertile alluvial soil suitable for agriculture, but on the other, due to geographical and climatic conditions, it causes periodical, disastrous floods in Assam and Bangladesh.**

### The Project and Its Location

- The dam is to be built at a huge gorge in the Himalayan reaches where the **Brahmaputra makes a U-turn to flow into Arunachal Pradesh and then to Bangladesh.** The **Yarlung Zangbo River**, as the Brahmaputra is known in Tibet, will be the focal point of this massive hydropower project.
- The location in **Medog county is strategically chosen for its vertical drop of 2,000 meters**, making it an ideal place for hydropower generation. This region is located in the **Tibet Autonomous Region**, governed by China.
- The total investment in the dam is projected to exceed one trillion yuan (\$137 billion). This project dwarfs any other single infrastructure project on the planet, including China's own Three Gorges Dam, regarded as the largest in the world.
- Once completed, the hydropower station is expected to generate more than **300 billion kWh of electricity annually, enough to meet the needs of over 300 million people.** The dam will be built in one of the rainiest parts of mainland China, bringing bountiful flows of water to the hydropower station.

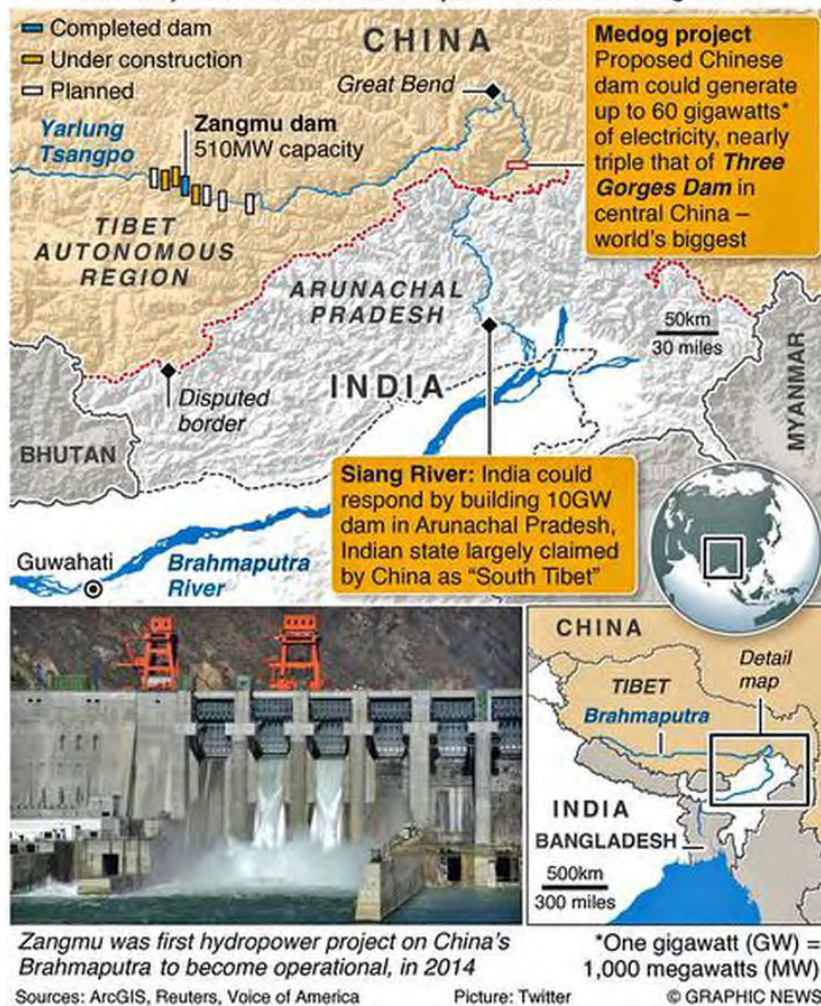
### Environmental and Seismological Impact

- The project site lies along a **tectonic plate boundary, making it prone to earthquakes.** Despite extensive geological explorations and assurances from Chinese authorities, concerns about the dam's impact on the fragile Himalayan ecosystem persist.
- **The Tibetan plateau frequently experiences seismic activity**, which could pose risks to the dam's structural integrity. The **Brahmaputra dam presents enormous engineering challenges** as the project site is located along a tectonic plate boundary where earthquakes occur.
- The construction of such a massive infrastructure project in an ecologically sensitive zone could have disastrous consequences.
- The region is home to several endangered species and is already experiencing the effects of climate change. The

combined dam plans of China and India could exacerbate these issues, leading to deforestation, soil erosion, and habitat loss.

## China's Brahmaputra dam project

China's government is planning to build a "super dam" on a section of the Brahmaputra River, known as the Yarlung Tsangpo, raising concerns over its potential downstream impact in India and Bangladesh



### Geopolitical Concerns

- **India and Bangladesh have expressed concerns over the project's potential to control water flow.** India, for instance, fears that the dam could enable China to release large amounts of water, potentially flooding border areas during hostilities.
- Additionally, the construction of the dam upstream could affect water availability and silt deposition downstream, impacting agriculture and water resources. Such a huge dam could hold back a **massive amount of silt carried by the river, which could affect farming in the areas downstream.**

### India's Response

- In response to China's plans, **India is also constructing a dam on the Brahmaputra in Arunachal Pradesh.** Both countries have established the **Expert Level Mechanism (ELM) to discuss trans-border river issues.**

- Data sharing on river flow levels is part of this cooperation, but trust issues remain, especially after the 2017 Doklam border standoff when China halted data sharing.
- India has urged China to ensure that the interests of downstream states are not harmed by any activity in upstream areas. Meanwhile, India is considering building a **10 gigawatts (GW) hydropower project in the Dibang Valley in Arunachal Pradesh, to mitigate the adverse impact of the Chinese dam.**

**Ecological Impact**

- The construction of such a massive infrastructure project in an **ecologically sensitive zone could have disastrous consequences.**
- The region is home to several endangered species and is already experiencing the effects of climate change.
- The **glaciers have been retreating due to climate change, and the ecosystem in the Himalayan region is already on the decline.** Deforestation, soil erosion, and landslides are some of the other issues here.
- The combined dam plans of **China and India** could exacerbate these issues, leading to deforestation, soil erosion, and habitat loss.

**Potential Benefits**

- Despite the concerns, the hydropower project also promises significant benefits. The project **is expected to generate income of 20 billion yuan (\$3 billion) annually** for the Tibet Autonomous Region.
- It will play a positive role in accelerating the country's efforts to create a new development pattern and pursue high-quality development.
- It is also of great importance to advancing the country's strategy for carbon peaking and carbon neutrality and coping with global climate change.
- By harnessing the abundant hydropower resources of the Yarlung Zangbo River, the project will also spur the development of **solar and wind energy resources in surrounding areas**, thus creating a clean energy base featuring a complementary mix of hydro, wind, and solar power.

**PEPPER IT WITH:**  
Mega Dams Impact, Water Bomb, Flooding, Renewable energy.

**Conclusion**

China's new dam on the Brahmaputra River represents a monumental engineering feat with the potential to significantly boost renewable energy output. However, it also raises serious geopolitical, environmental, and seismological concerns for downstream countries like India and Bangladesh. The project's success will depend on careful management, international cooperation, and mitigation of its environmental impact.

**Return of Panama Canal**

**News Excerpt**

On December 21, 2024, US President-elect Donald Trump criticized Panama for allegedly overcharging US ships for the use of the **Panama Canal**, an artificial waterway connecting the **Atlantic and Pacific Oceans**. In a post on Truth Social, Trump claimed unfair treatment by Panama and threatened to "demand the return" of the canal to the US.

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**History of the Panama Canal**

- **Initial Vision:**
  - The canal was envisioned as a way to reduce the time and cost of traveling between oceans by avoiding the long journey around South America's southern tip, Cape Horn.
- **Construction by the US:**
  - Built between **1904 and 1914**, following a failed attempt by France due to financial and technical challenges.
  - The US solved these issues with a system of **locks**, raising ships to the level of **Gatun Lake** to traverse the canal.
  - The project cost over **\$300 million** (a record at the time) and thousands of lives.
- **Control Through Treaty:**
  - Panama gained independence from Colombia in 1903 with US support, and the US acquired rights to build and control the canal via the **Hay-Bunau-Varilla Treaty**.



- Many Panamanians contested the treaty, arguing their representative had no legitimate authority to negotiate it.

• **US Operations:**

- The canal remained under US control for decades, facilitating global trade and ensuring strategic military and economic advantages.
- Approximately **6% of global trade by value** currently passes through the canal.

**Significance of the Panama Canal**

• **Strategic Importance for the US:**

- Provides a critical maritime shortcut between the **Atlantic** and **Pacific Oceans**.
- Historically enabled the US to maintain military and economic dominance in the Western Hemisphere.

• **Global Trade Impact:**

- Around **14,000 ships** transit annually, though numbers have declined due to **climate-driven water shortages**.

• **Geopolitical Relevance:**

- The canal is central to the US maintaining influence in Latin America, especially amidst growing **Chinese investments** in the region.

**Why Did the US Relinquish the Canal?**

• **Panama's Discontent:**

- Protests and riots in the 1960s highlighted Panamanian resentment over US control.
- Demands for sovereignty led to prolonged negotiations.

• **Economic and Strategic Factors:**

- By the 1970s, the canal's economic value for the US declined due to rising operational costs and mismanagement.
- The US retained strategic advantages through a **neutrality treaty**, eliminating the need to operate the canal directly.

• **Torrijos-Carter Treaties (1977):**

- Signed by US President **Jimmy Carter** and Panamanian leader **Omar Torrijos**, the treaties transferred the canal to Panama by **December 31, 1999**.
- The treaties included provisions allowing the US to defend the canal militarily if necessary.

**PEPPER IT WITH:**  
New trade route, Global shipping routes, Strategic Pathways.

**Controversy Over Trump's Remarks**

• **Claim of "One Dollar" Transfer:**

- Trump criticized Carter's agreement as excessively generous, though there is no evidence supporting his claim that the canal was handed over for "one dollar."

### Trump claims canal in U.S. strategic shift

President-elect Donald Trump's threat to reassert U.S. control over the Panama Canal could presage a shift away from a rules-based neo-liberal international order into a more robustly assertive foreign policy

**WHO OWNS CANAL?**

**1880:** French-U.S. **Panama Canal Company** begins construction on Colombian territory

**1903:** U.S. backs Panamanian rebels seeking independence from Colombia, takes exclusive permanent possession of **Panama Canal Zone**

**1914:** Canal opens

**1977: Torrijos-Carter Treaty** cedes control of canal back to Panama

**1999:** Panama takes full control of canal

**TRUMP'S GLOBAL OUTLOOK**

**China:** Seen as principal economic and strategic threat to U.S.

**Canada:** Accused of unfair trade practices, Trump has floated making it a U.S. state – presumably in jest!

**Greenland:** 2019 offer to buy autonomous territory rejected by Denmark, now described as "absolute necessity" for U.S. security

**SEATO / NATO:** Members should pay for "U.S. protection"

**Mexico:** Military action threatened against drug cartels

**Venezuela:** Attempted coup against **Nicolás Maduro** in 2019

**Iran:** Approved airstrikes in 2019, called back mid-air

Sources: Reuters, BBC, Vox, Common Dreams © GRAPHIC NEWS

• **China's Involvement:**

- Trump's reference to China reflects concerns about its **Belt and Road Initiative (BRI)** and increasing investments in Panama's infrastructure, including projects related to the canal.
- China's influence in Latin America, traditionally a US sphere of influence, has been growing, intensifying US-China geopolitical tensions.

**Conclusion**

Trump's remarks highlight ongoing debates over US influence in global trade routes and concerns about growing Chinese involvement in strategic regions.

While his rhetoric emphasizes past US dominance, any attempt to reclaim the Panama Canal would face significant legal, political, and diplomatic challenges. This episode underscores the canal's enduring importance in global trade and geopolitics.

## Trump wants to buy Greenland

### News Excerpt

**US President-elect Donald Trump** has once again expressed interest in buying **Greenland**, and **Greenland has again stated it is not for sale**. In recent weeks, **Trump has threatened to take over the Panama Canal** and said **Canada should be the USA's 51st state**.

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### Countries contend control of the Arctic Ocean

U.S. President-elect Donald Trump said on Tuesday he wants to make mineral-rich, strategically placed Greenland a part of the United States.



### Why Greenland Matters to the US

- Geostrategic Location**
  - Greenland, an autonomous province of Denmark, is situated in the **North Atlantic Ocean**, between North America and Europe, making it strategically crucial for military and geopolitical operations.
  - During the **Cold War**, Greenland became significant as a defense outpost for monitoring Soviet activity. The US established the **Thule Air Base** (now Pituffik Space Base), a critical location for early missile detection and strategic missile launches.
  - Today, Greenland offers an advantage for monitoring potential threats from **Russia, China, and North Korea**, and it enhances US military capabilities in the Arctic region.
- Natural Resources**
  - Greenland is rich in **rare earth minerals**, essential for manufacturing electronic devices, renewable energy technologies, and advanced weaponry.
  - Currently, **China dominates the global supply** of these minerals. The US sees Greenland as a potential alternative source, crucial for reducing dependency on China.

- In 2021, Greenland banned uranium mining, raising questions about the accessibility of its resources.
- Arctic Accessibility**
  - Climate change has led to the melting of Arctic ice, opening up **new waterways** and increasing competition among global powers for control over the region.
  - The Arctic is becoming a hotspot for economic and military activities, and the US aims to counter **Russian and Chinese influence** in the region by strengthening its presence in Greenland and its surroundings.

### Past US Efforts to Acquire Greenland

- 1946: Harry S Truman's Offer**
  - After **World War II**, President **Harry Truman** offered **\$100 million** to Denmark for Greenland, emphasizing its strategic importance in the post-war era.
  - Truman even considered a territorial exchange involving parts of **Alaska** for Greenland, though the idea didn't materialize.
- 1867: Early Interest**
  - In the same year the US purchased **Alaska**, the State Department recognized Greenland's strategic and resource potential. However, no formal attempt to acquire it was made at the time.
- Donald Trump's Proposal**
  - In **2019**, Trump called Greenland a "strategic real estate deal" and proposed its acquisition, drawing parallels with the Alaska purchase.
  - The Danish Prime Minister **Mette Frederiksen** dismissed the idea as "absurd," leading Trump to cancel a planned visit to Denmark.

### US History of Territorial Acquisitions

- Alaska Purchase (1867)**
  - Purchased from **Russia** for **\$7.2 million**, the acquisition added 1.5 million sq km of land to the US.
  - Initially ridiculed as "Seward's Folly," Alaska later proved invaluable due to its rich natural resources and strategic importance.
- Louisiana Purchase (1803)**
  - Under President **Thomas Jefferson**, the US acquired over 2 million sq km of land from **France** for **\$15 million**.
  - This purchase doubled the size of the US and laid the foundation for westward expansion.
- Danish West Indies (1917)**
  - Purchased from **Denmark** for **\$25 million**, these islands were renamed the **US Virgin Islands** and continue to serve as a key strategic and economic asset in the Caribbean.

**PEPPER IT WITH:**  
National Security, Environment protection, Strategic Move by USA.

**Contemporary Implications**

- **Strategic Rivalry in the Arctic**
  - Greenland’s location is pivotal as the **Arctic emerges as a global flashpoint**, with nations like **Russia** and **China** expanding their presence.
  - The US sees control over Greenland as a way to maintain dominance in the region and secure vital resources.
- **Economic Interests**
  - Access to Greenland’s **rare earth minerals** aligns with US efforts to reduce reliance on China for critical materials.
- **Sovereignty and Resistance**
  - Greenland, while autonomous, remains under Danish sovereignty. Its government and people have repeatedly expressed opposition to the idea of being “sold.”
  - Denmark and Greenland have criticized such proposals as outdated, colonial-era notions of territorial expansion.

**Conclusion**

While **acquiring Greenland** could provide the US with strategic and economic benefits, modern geopolitical dynamics, concerns about sovereignty, and ethical considerations make such ambitions highly contentious. **Greenland’s increasing importance in the Arctic** underscores the broader competition among major powers for influence in this rapidly changing region.

**ENVIRONMENT**

**18th State of Forest Report (ISFR-2023)**

**News Excerpt:**

The **18th State of Forest Report (ISFR-2023)** by the Forest Survey of India highlights a marginal gain in India’s forest cover and a significant increase in tree cover. However, the trends behind this growth present challenges that could undermine India’s ecological balance and climate goals.

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**Key Findings of ISFR-2023**

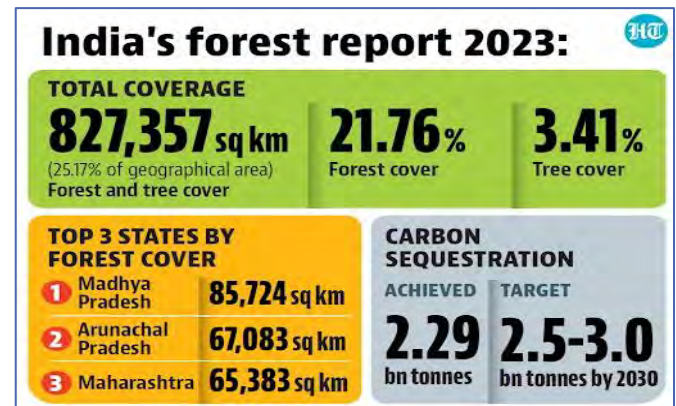
- **Forest Cover:** Increased by **156 sq km**, reaching **21.76%** of the country’s area.
- **Tree Cover:** Grew by **1,289 sq km**, accounting for **3.41%** of total land.
- **Dense Forests:** India lost **3,913 sq km** of dense forests (areas with canopy density ≥40%) between 2021 and 2023.

**The Problem with Replacing Natural Forests with Plantations**

**Natural Forests vs. Plantations**

- **Natural Forests:**
  - More biodiverse, supporting a wide range of species.

- Stock more carbon in trees and soil.
- Provide ecological services like water regulation, pollination, and habitat connectivity.
- **Plantations:**
  - Often monocultures with trees of the same age.
  - Vulnerable to pests, fire, and diseases.
  - Can act as barriers to natural forest regeneration.
  - Stock less carbon and may not match natural forest carbon levels even after decades.



**Rapid Plantation Growth**

- Plantations are often promoted for their ability to achieve short-term carbon targets but are harvested more readily, defeating long-term climate goals.
- ISFR-2023 attributes **1,420 sq km of plantations** becoming dense forests since 2021, but such rapid growth highlights a steady replacement of natural forests.

**Forest Degradation Trends**

- **Loss of Dense Forests:**
  - Over the last two decades, **24,651 sq km** (6.3%) of dense forests have been lost, equivalent to half the size of Punjab.
  - This loss has been partially offset by plantations and improved management of open forests.
- **Shifts in Forest Density:**
  - **Very Dense Forests (VDF):** High-density forests may degrade into moderately dense or open forests due to biotic pressures and environmental changes.
  - **Open to Moderate Forests:** Gains in moderately dense forests are often due to plantations, not natural growth.

**Data Adjustments Mask the Real Picture**

**Unexplained Revisions**

- ISFR has revised dense forest data multiple times since 2003, adding **20,232 sq km** to the inventory on paper, inflating the appearance of stability or growth in dense forest cover.

CHANGE IN DENSE FOREST COVER 2003-2023				
	2021-23	2003-2013	2013-2023	2003-2023
<b>LOST</b>				
VDF to NF	295	288	1277	1565
MDF to NF	3362	6714	15086	21800
VDF to scrub	24	5	65	70
MDF to scrub	313	144	1153	1297
<b>Disappeared</b>	<b>3994</b>	<b>7151</b>	<b>17581</b>	<b>24732</b>
VDF to OF	228	134	1128	1262
MDF to OF	5166	6414	22249	28663
<b>Total loss</b>	<b>9388</b>	<b>13699</b>	<b>40958</b>	<b>54657</b>
<b>GAINED</b>				
NF to VDF	56	43	483	526
NF to MDF	839	3631	7554	11185
Scrub to VDF	1	0	54	54
Scrub to MDF	102	105	1043	1148
OF to VDF	496	124	2567	2691
<b>Plantations</b>	<b>1494</b>	<b>3903</b>	<b>11701</b>	<b>15604</b>
OF to MDF	8610	6122	34301	40423
<b>Total gain</b>	<b>10104</b>	<b>10025</b>	<b>46002</b>	<b>56027</b>
<b>NET CHANGE</b>	<b>716</b>	<b>-3674</b>	<b>5044</b>	<b>1370</b>

VDF: Very Dense Forest (canopy over 70%) | MDF: Moderate Dense Forest (canopy 40-70%)  
 OF: Open Forest (canopy 10-40%) | Shrub (canopy under 10%) | NF: Non-Forest (no canopy)

**Ecological and Climate Implications**

**Loss of Biodiversity**

- Natural forests house diverse ecosystems that plantations cannot replicate, leading to reduced resilience and ecosystem stability.

**Carbon Stock Concerns**

- The **United Nations Framework Convention on Climate Change (UNFCCC)** flagged India for assuming plantations could match the carbon stock of natural forests within just eight years—a claim not supported by evidence.

**Fire and Pest Risks**

- Monoculture plantations are more susceptible to fire and pest outbreaks, threatening long-term forest health.

**Short-Term Gains vs. Long-Term Goals**

- While plantations help achieve immediate carbon sequestration targets, their frequent harvesting negates long-term climate benefits.

**The Way Forward**

- Focus on Natural Forest Conservation:** Prioritize preserving and restoring degraded natural forests instead of replacing them with plantations.
- Improve Transparency in Forest Data:** Address discrepancies in forest cover data to ensure accurate reporting and planning.
- Diversify Plantations:** Encourage mixed-species plantations that mimic natural forests, enhancing biodiversity and ecosystem resilience.
- Strengthen Forest Governance:** Enforce stricter regulations to prevent deforestation and manage biotic pressures on existing natural forests.

- While the growth in **India's overall green cover** might seem like progress, the underlying trends of forest degradation and plantation expansion raise concerns.
- To balance ecological health with carbon and climate goals,** India must prioritize the protection and regeneration of its natural forests over the creation of plantations.

**PEPPER IT WITH:**  
 Forest management, Green Cover, Carbon stock.

**Climate change and biodiversity loss are connected: Key takeaways from NEXUS report**

**News Excerpt:**

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2					8						
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The recent NEXUS report, produced by the **Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES)**, provides a comprehensive analysis of the interconnected challenges of climate change, biodiversity loss, food insecurity, water scarcity, and health risks.

This groundbreaking assessment emphasizes the urgent need for integrated approaches to address these crises effectively.

This report underscores how global environmental challenges are not isolated; instead, they are interconnected processes that significantly impact ecological and human systems.

**Here are the key takeaways:**

- Interdependence of Climate and Biodiversity:** Climate change and biodiversity are interlinked in a reinforcing cycle. Warming temperatures and altered weather patterns can lead to habitat loss and species extinction, while biodiversity loss can exacerbate climate change by reducing the resilience of ecosystem services essential for climate regulation.
- Impacts of Climate Change on Biodiversity:**
  - Habitat Alteration:** Rising temperatures and extreme weather events are changing habitats, forcing species to migrate, adapt, or face extinction.
  - Phenological Changes:** Altered seasonal events (e.g., flowering, breeding cycles) disrupt food webs and ecological interactions.
  - Ocean Changes:** Ocean acidification and temperature rises impact marine biodiversity, affecting coral reefs and fish populations.
- Biodiversity's Role in Mitigating Climate Change:**
  - Carbon Sequestration:** Ecosystems like forests, wetlands, and oceans act as carbon sinks. Protecting and restoring these habitats can mitigate climate impacts by absorbing CO2.

- **Resilience Building:** Biodiverse ecosystems are generally more resilient to climate extremes, providing stability and continued ecosystem services.
- **Feedback Loops:** Loss of biodiversity influences feedback loops in climate systems. For example, deforestation reduces the Earth's capacity to absorb carbon, while loss of pollinators affects food production, highlighting intricate connections within the Earth's systems.
- **Socioeconomic Implications:** The intertwined challenges of climate change and biodiversity loss have profound implications for human societies. They affect food security, water availability, and health, disproportionately impacting vulnerable communities who rely directly on natural resources for their livelihoods.
- **Policy Recommendations:**
  - **Integrated Approaches:** Policymakers should develop integrated strategies that address biodiversity and climate change simultaneously, promoting nature-based solutions such as reforestation and sustainable land management.
  - **Conservation and Restoration:** Prioritizing conservation efforts and habitat restoration can yield dual benefits, enhancing biodiversity while sequestering carbon.
  - **Cross-sector Collaboration:** Collaboration across sectors (agriculture, forestry, urban planning) is crucial for creating synergies between biodiversity conservation and climate adaptation efforts.
- **Research and Monitoring:** Continuous research and improved monitoring are essential to understand the dynamics between climate change and biodiversity fully. This includes investing in technologies and methodologies that enhance data collection and analysis.
- **Community Engagement:** Engaging local communities in conservation and climate action builds resilience and garners support for policies, ensuring that initiatives are culturally appropriate and locally accepted.

IPBES is to biodiversity and natural ecosystems what the more famous Intergovernmental Panel on Climate Change (IPCC) is to climate change. It periodically examines all the existing scientific knowledge on biodiversity and nature to make an assessment of their current state. Just like IPCC, IPBES too does not produce new science. It only evaluates the existing knowledge to make consolidated assessments.

### Conclusion:

The NEXUS report calls for urgent action to address these interconnected challenges, emphasizing that mitigating climate

### PEPPER IT WITH:

Climate change and biodiversity, Biodiversity conservation.

change while conserving biodiversity is not a choice but a necessity for sustainable development and global ecological balance. International cooperation, robust policies, and innovative solutions are needed to tackle these twin crises effectively, securing a healthier planet for future generations.

## Uttarakhand's Ticking Time Bomb

### News Excerpt

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In the high altitudes of Uttarakhand, particularly in **Kuwari village** in the Kumaon-Himalaya range, a seemingly harmless pond has transformed into a **massive lake spanning nearly three kilometers**. Created by landslides blocking the Shambhu River, this lake, and others like it, pose a catastrophic risk if their makeshift natural dams of debris give way.

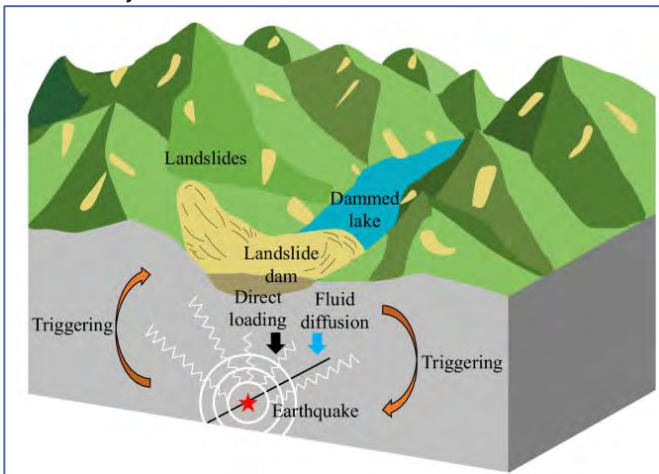
### The Growing Threat

- **Formation of Landslide Lakes:**
  - Landslides caused by natural and anthropogenic activities, such as **mountain cutting for coal plants**, block river flows, leading to the formation of lakes.
  - In Kuwari, a coal plant's activities may have exacerbated mountain instability, making the region prone to landslides.
- **Immediate Danger:**
  - The "dams" holding back these lakes consist of loose debris, making them unstable.
  - A potential breach could flood **Bageshwar, Chamoli, Rishikesh**, and other downstream settlements, causing widespread devastation.
- **Precarious Locations:**
  - Many landslide lakes form in **remote, high-altitude regions** with limited accessibility, delaying intervention efforts.
  - Similar lakes have been observed in **Dharchula on Kali Ganga** and **Almora**.

### Challenges in Management

- **Identification and Assessment:**
  - A **multi-agency team** is identifying such lakes, but the process is hampered by the inaccessibility of these regions.
  - Each lake requires a **custom management plan**, as a one-size-fits-all approach is insufficient.
- **Emergency Measures:**
  - Larger lakes like Kuwari may need **artificial channels** to manually drain excess water and maintain safe levels.
  - Implementation could take **two to three years**, a concerning timeline given the immediate risks.
- **Role of Climate Change and Development:**

- Warming temperatures and erratic weather patterns intensify landslide occurrences.
- Unregulated development, including **coal plant activities**, further destabilizes the fragile Himalayan ecosystem.



**Voices from the Ground**

Residents of Kuwari, like **Prem Singh**, have faced **repeated rehabilitations** due to landslides since 2013. They express growing anxiety, emphasizing that **nature often warns of impending disasters**, but human inaction compounds the risks.

**Recommendations**

- **Urgent Risk Mitigation:**
  - Expedite the assessment of landslide lakes through **remote sensing** and **ground surveys**.
  - Establish **early warning systems** and evacuation plans for at-risk downstream areas.
- **Long-Term Measures:**
  - Enforce stricter regulations on **mountain-cutting activities** and **development projects** in vulnerable regions.
  - Promote **reforestation** and **natural stabilization techniques** to reduce landslide susceptibility.
- **Localized Solutions:**
  - Design **lake-specific management strategies**, including artificial drainage and controlled breaching where necessary.
  - Improve infrastructure and access to high-altitude regions for faster response times.

**Conclusion**

The **ticking time bomb of landslide lakes** in Uttarakhand underscores the delicate balance between nature and human activity.

As these lakes expand, the **threat to lives, livelihoods, and ecosystems** grows exponentially.

A combination of immediate intervention, **stricter development oversight**, and proactive disaster

**PEPPER IT WITH:**  
Balancing Nature vs human demand, Disaster Prevention.

management is essential to avert a **catastrophic failure** that could reshape the **Himalayan landscape forever**.

**Nimesulide ban yet another step toward saving vultures, but the battle is far from over**

**News Excerpt:**

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The recent ban on the **veterinary drug nimesulide** marks a significant step forward in the ongoing battle to save **India's vulture population**, which has faced severe declines due to toxic substances in livestock treatments.

This decision, announced by the Indian government, follows extensive research highlighting the drug's harmful effects on vultures and reflects a growing commitment to wildlife conservation.

**Background on Nimesulide and Vulture Decline**

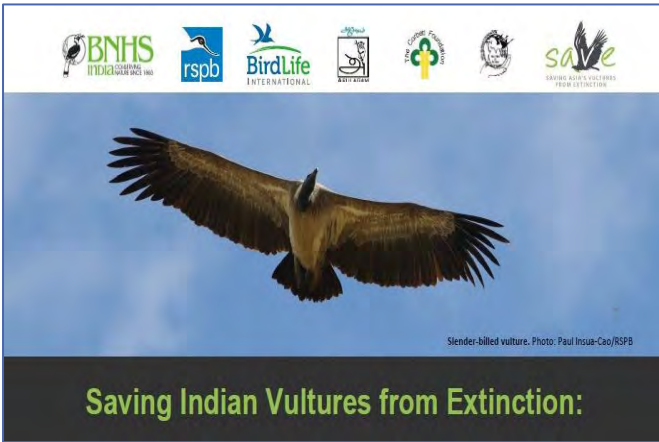
- Nimesulide is a **non-steroidal anti-inflammatory drug (NSAID)** commonly used to alleviate pain in animals. However, studies conducted by the **Indian Veterinary Research Institute (IVRI)** have demonstrated that vultures ingesting carcasses of livestock treated with nimesulide experience acute toxicity, leading to kidney failure and death.
- Controlled experiments revealed that vultures exposed to doses of nimesulide comparable to those found in treated livestock exhibited elevated uric acid levels, a marker of renal distress, and died within days of exposure.
- This ban follows previous prohibitions on other harmful **NSAIDs like diclofenac, aceclofenac, and ketoprofen**, which have similarly contributed to vulture mortality.
- Despite these efforts, the vulture population in India remains critically endangered, with various species facing extinction due to ongoing exposure to toxic veterinary drugs.

**The Ban's Implementation**

The **Drugs Technical Advisory Board of India (DTABI)** formally recommended the ban on nimesulide after extensive lobbying by conservation organizations such as **SAVE (Saving Asia's Vultures from Extinction), BirdLife International, and the Bombay Natural History Society (BNHS)**.

The Indian government has now prohibited the production, sale, and distribution of all formulations of nimesulide under the Drugs and Cosmetics Act.

While this decision has been welcomed by conservationists as a crucial step toward protecting vultures, concerns remain regarding enforcement. Reports indicate that nimesulide is still accessible in rural areas, raising questions about compliance and monitoring efforts. Experts emphasize the need for stricter regulations to ensure that this ban is effectively implemented.



**vetterinary drugs are known to be toxic to vultures**

Several veterinary drugs have been identified as toxic to vultures, significantly contributing to their population decline, particularly in South Asia. Here are the key drugs known to pose risks to these scavengers:

**1. Diclofenac**

- **Impact:** Diclofenac is widely recognized as the primary cause of the **catastrophic decline in vulture populations across the Indian subcontinent, leading to a 99% decrease** in three species of Gyps vultures. The drug causes **kidney failure and visceral gout** in vultures that consume carcasses of livestock treated with it.

**2. Ketoprofen**

- **Impact:** Ketoprofen has been **shown to cause similar toxic effects as diclofenac**, leading to mortality in vultures that ingest contaminated carcasses. Research indicates that this drug can be present at toxic levels in livestock food supplies.

**3. Carprofen**

- **Impact:** Like ketoprofen, carprofen has been implicated in causing toxicity in vultures. Although specific studies on its effects are limited.

**4. Flunixin**

- **Impact:** Flunixin has been confirmed to be toxic to wild vultures and other scavengers. Cases of vulture deaths attributed to flunixin have been documented, prompting calls for careful use and monitoring.

**Conservation Efforts Moving Forward**

The ban on nimesulide is part of broader conservation strategies aimed at reviving vulture populations in India. **The revised National Vulture Conservation Action Plan (2020-2025)** outlines measures such as establishing new captive breeding centers and promoting safer alternatives for veterinary use. Experts advocate for the adoption of less harmful drugs like meloxicam and tolfenamic acid, which have proven effective without posing risks to vultures.

**Jemima Parry-Jones, chair of SAVE**, expressed optimism regarding the ban, stating that removing toxic substances from the environment could allow vulture populations to

recover if given the chance. She highlighted the importance of swift legislative action following the DTABI's recommendation to solidify this progress.

**Conclusion**

While the **ban on nimesulide represents** a critical victory for vulture conservation in India, it is clear that the battle is far from

**PEPPER IT WITH:**  
Vulture conservation efforts, Regulating medicines.

over. Ongoing efforts are necessary to address remaining threats to these essential scavengers. The collaboration between government bodies, research institutions, and conservation organizations will be pivotal in ensuring that vultures can thrive once again in their natural habitats. As India takes these steps toward protecting its wildlife heritage, it sets an example for other nations grappling with similar challenges in biodiversity conservation.

**Landmark Youth Climate Ruling**

**News Excerpt**

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The Montana Supreme Court upheld a groundbreaking lower court ruling that favored **16 young activists** who argued that the state violated their constitutional right to a clean and healthful environment. This case marks the first time a state supreme court in the United States has affirmed such a judgment.

**The Case: Why Did Montana's Youth Sue the State?**

• **Legal Challenge:**

- The lawsuit targeted a provision in the **Montana Environmental Policy Act (MEPA)** that barred officials from considering **greenhouse gas (GHG) emissions** and their climate impact when approving new energy projects.
- The plaintiffs claimed this law enabled state policies that promoted fossil fuel extraction and burning, accelerating climate change.

• **Constitutional Grounds:**

- The plaintiffs argued that the law violated **Article IX of the Montana Constitution**, which guarantees:
  - The right to a clean and healthful environment.
  - A shared responsibility to maintain and improve the environment for present and future generations.

• **Montana's Fossil Fuel Legacy:**

- The state has an extensive history of **coal, oil, and gas extraction**, with thousands of wells, refineries, and coal mines contributing significantly to GHG emissions.
- Between 1950 and 2015, Montana's average temperatures increased by **2.0-3.0°F** (1.1-1.7°C), exacerbating climate impacts such as wildfires, droughts, and ecosystem disruptions.

• **Youth Plaintiffs:**

- Represented by **Our Children’s Trust**, the young activists aged 2 to 18 (in 2020) filed the lawsuit, making this the **first constitutional climate trial in U.S. history**.
- During the trial in June 2024, **10 climate experts** and **12 of the plaintiffs** testified about the impacts of climate change on their health, well-being, and future.

**The District Court Ruling**

- **Major Findings:**
  - **Montana’s Emissions Are Significant:** Judge Kathy Seeley rejected the state’s argument that Montana’s emissions were negligible globally. Instead, she noted that Montana’s emissions were comparable to those of **Argentina, the Netherlands, or Pakistan**.
  - **Fossil Fuel Authorizations:** The state’s authorization of fossil fuel projects without evaluating their GHG emissions was ruled unconstitutional.
- **Impact on Plaintiffs:**
  - The court concluded that these policies directly contributed to climate change and caused injuries to the plaintiffs.
- **Judgment:**
  - Declared the MEPA provision prohibiting GHG evaluations **unconstitutional**.

**PEPPER IT WITH:**  
Youth participation in conservation, GHG emission control,

**Significance of the Montana Supreme Court Ruling**

- **Encouragement for Climate Litigation:**
  - This judgment sets a **precedent** for similar youth-led or public interest climate lawsuits across the U.S. and globally.
- **Accountability:**
  - Governments and corporations may face increased scrutiny for their **climate policies** and historical contributions to GHG emissions.
- **Rising Climate Litigation:**
  - As of December 2022, over **2,180 climate-related cases** had been filed in **65 jurisdictions** worldwide, a significant rise compared to previous years.
  - This ruling may contribute to the growing trend of holding entities accountable for **climate mitigation and adaptation efforts**.
- **A Global Context:**

The judgment aligns with broader efforts to combat climate change, especially as global temperatures continue to rise and extreme weather events become more frequent.

**Conclusion**

The Montana Supreme Court’s decision reinforces the growing recognition of **environmental rights as**

**fundamental human rights**. By affirming that states must evaluate the climate impacts of their energy policies, this landmark ruling strengthens the legal framework for climate accountability and inspires similar efforts worldwide to combat climate change.

**SCIENCE & TECHNOLOGY**

**ISRO launches SpaDeX mission**

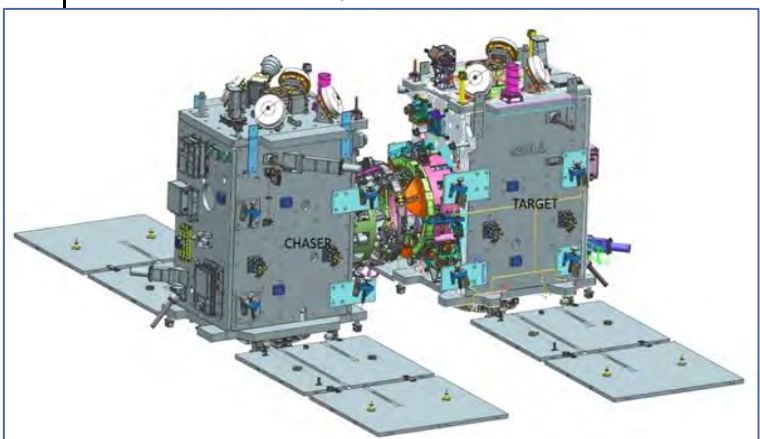
**News Excerpt**

On **30 December 2024**, the **Indian Space Research Organisation (ISRO)** successfully launched the **SpaDeX (Space Docking Experiment)** mission, marking the year’s final major milestone in India’s space journey. Launched aboard the **PSLV-C60** from the **Satish Dhawan Space Centre** in Sriharikota, Andhra Pradesh, the mission aims to demonstrate India’s capability to **dock two satellites in space**—a technological feat achieved by only a select few nations.

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**Why is SpaDeX Significant?**

- **Strategic Advancement in Space Exploration:** SpaDeX showcases **India’s indigenous “Bharatiya Docking System”**, a key technology that will enable complex future missions, including:
  - **Chandrayaan-4:** For retrieving and returning lunar samples.
  - **Gaganyaan:** Enabling crew transfer and long-duration human spaceflights.
  - **Bharatiya Antriksh Station:** India’s planned modular space station by **2035**.



- **Precision and Complexity:** Docking involves maneuvering satellites orbiting at speeds of **28,800 km/hr** and reducing their relative velocity to **0.036 km/hr** before merging. This requires exceptional precision, coordination, and advanced sensors.
- **International Competitiveness:** By achieving this feat, ISRO joins an elite group of nations capable of orbital docking, elevating India’s stature in global space exploration.



### How Will SpaDeX Dock the Satellites?

- **Satellite Deployment:** Two identical satellites, **SDX01 ("Chaser")** and **SDX02 ("Target")**, each weighing **220 kg**, have been placed in a **470-km circular orbit** above Earth.
- **Docking Process:**
  - The satellites are maneuvered to reduce their relative velocity to nearly zero.
  - **SDX01**, the Chaser, approaches **SDX02**, the Target, in precise steps, closing the distance gradually from kilometers to meters.
  - Docking is completed using the **Bharatiya Docking System**, which joins the satellites to form a single unit.
- **Technological Innovations:**
  - Use of advanced sensors, including **Laser Range Finders** and **Proximity Sensors**.
  - A high-resolution video camera to monitor the docking process.

**PEPPER IT WITH:**

Space mission Achievements of ISRO, Bhartiya Antariksha Station.

### Broader Implications of SpaDeX

- **Space Station Development:** SpaDeX validates the docking technology necessary for assembling modules of the planned **Bharatiya Antriksh Station**, expected to launch its first module by **2028**.
- **Lunar and Planetary Missions:** Docking will be a critical component in **Chandrayaan-4**, where modules for sample retrieval, transport, and Earth re-entry need to connect seamlessly.
- **Human Spaceflight:** Gaganyaan and other crewed missions will rely on docking for crew transfer, refueling, and long-term operations.
- **Space Debris Management and Servicing:** Technologies tested in SpaDeX could enable **satellite servicing** and active **debris removal**, crucial for maintaining safe and sustainable orbital environments.

### What is Space Docking, and Why is it Significant?

**Space Docking** is the process of maneuvering two spacecraft to the same orbit, bringing them closer, and finally joining them. This technology is essential for:

- **Building Modular Space Stations:** Docking allows different modules to be launched separately and assembled in orbit, as seen with the **International Space Station (ISS)**.
- **Missions Requiring Heavy Payloads:** Large spacecraft and equipment that cannot be launched in one go can be assembled in space through docking.
- **Sample Return Missions:** Docking is crucial for complex lunar and planetary missions where samples must be returned to Earth.

### Post-Docking Milestones:

ISRO successfully controlled the docked satellites as a single object.

**Upcoming objectives** include undocking, electric power transfer checks, and the use of the satellites for application missions with an expected lifespan of up to two years.

### Way Forward

- **Data Analysis and Validation:** Analyze docking data to refine techniques and improve future missions.
- **Technology Development:** Innovate and enhance indigenous docking technology for larger and more complex spacecraft.
- **Future Missions Planning:** Utilize insights from SpaDeX to advance plans for an Indian space station by 2035.
- **International Collaboration:** Collaborate with global partners to share knowledge and explore joint missions.
- **Public Engagement and Education:** Promote SpaDeX achievements to inspire future generations in STEM fields.
- **Continuous Improvement Cycle:** Plan further docking experiments based on lessons learned from **SpaDeX for ongoing enhancement**.

### What is Disease X and Why the World Should Prepare for It

#### News Excerpt

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A recent unclassified outbreak in the **Democratic Republic of Congo (DRC)**, which has claimed over **400 lives**, has raised concerns that it could be an instance of **Disease X**.

#### About Disease X

- The World Health Organization (WHO) **coined** Disease X in **2018**. It is a placeholder term for an **unknown pathogen** capable of causing a devastating epidemic or pandemic.
- It emerged after the **West African Ebola epidemic (2014–2016)** exposed gaps in global epidemic readiness.
- Disease X symbolises both **"known unknowns"** (pathogens we anticipate but lack details about) and **"unknown unknowns"** (unforeseen health threats). It underscores the inevitability of emerging pathogens and the need for **proactive preparation**.
- **Potential Origins:**
  - **Zoonotic spillover:** Pathogens jumping from animals to humans.
  - **Antimicrobial resistance:** The rise of drug-resistant pathogens.
  - **Bioterrorism:** Intentional release of deadly pathogens.
- Disease X could be up to **20 times more lethal than SARS-CoV-2**, with the potential for catastrophic global impacts.

**Challenges in Predicting and Preparing for Disease X**

- Unpredictable Emergence:** The complex interplay of environmental, social, and biological factors makes forecasting outbreaks difficult.
- Expansive Pathogen Pool:** Millions of unknown viruses in wildlife pose the risk of zoonotic transmission.
- Globalisation:** Increased travel, trade, and interconnectedness accelerate the spread of infectious diseases worldwide.
- Climate Change:** Altered disease patterns and expanded ranges of vector-borne illnesses intensify health risks.
- Healthcare Inequality:** Disparities in healthcare infrastructure, particularly in low- and middle-income countries, hinder effective responses to outbreaks.

**Lessons from Recent Outbreaks**

- **DRC Outbreak:** Highlights gaps in global health systems and the urgent need for investments in **research, public health infrastructure, and international collaboration.**
- **Epidemiological Trends:** Since 1940, there have been over 300 emerging infectious diseases, with 70% zoonotic origins. These diseases are driven by human activities in regions like the **Congo Basin**, where high biodiversity meets poor healthcare infrastructure.

**Global and National Preparedness Efforts**

- **WHO's Priority Pathogens List:** Includes high-risk diseases like Ebola, Marburg, Nipah, and Disease X. Aims to direct research, funding, and policy initiatives toward combating diseases with limited medical countermeasures.

**Global Initiatives**

- **WHO Pandemic Treaty:** Establishes standardised global responses to pandemics.
- **Pandemic Fund:** Provides financial support for preparedness and response.
- **mRNA Technology Hubs:** Accelerate vaccine development for future pandemics.
- **CEPI (Coalition for Epidemic Preparedness Innovations):** Develops "prototype pathogen" platforms to create vaccines within 100 days of identifying new diseases. Founded in 2017 at Davos as a partnership among public, private, and philanthropic entities.

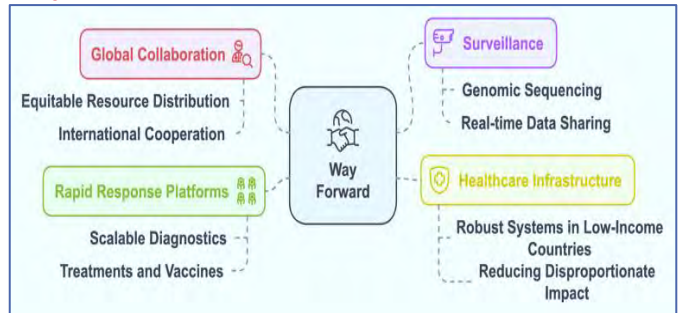
**PEPPER IT WITH:**  
Zoonotic Diseases, Bioterrorism, One Health Approach, Pathogens.

**Indian Initiatives**

- **Integrated Disease Surveillance Programme (IDSP):** Monitors and tracks emerging diseases.
- **National Institute of Virology (NIV):** Conducts pathogen research and vaccine development.

- **Biotechnology Initiatives:** Foster innovation in diagnostics, vaccines, and disease surveillance.

**Way forward**



**Foetal brain mapping project**

**News Excerpt**

The **foetal brain mapping project** by IIT-Madras researchers marks a significant breakthrough in neuroscience. By creating a **cellular-level map of developing human foetal brains**, this initiative offers unprecedented insights into brain development, disorders, and potential treatments. Here's why it is significant:

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**Key Achievements of the IIT-Madras Foetal Brain Mapping Project**

- **Granular Dataset:**
  - Researchers mapped foetal brains at 4, 17, 21, 22, and 24 weeks of gestation, a crucial developmental period.
  - The resulting dataset, named **Dharini**, comprises **5,132 plates** of cross-sections imaged at cellular resolution.
  - A detailed **3D reconstruction of the brain** was created, with **500 structures identified and annotated.**
- **High-Resolution Imaging:**
  - Each cross-section is imaged at resolutions of **1 to 0.5 microns**, enabling the study of brain structures at the cellular level.
  - Researchers developed **automated tools** for freezing, slicing, staining, imaging, and visualizing the brain tissues, ensuring consistency and accuracy.
- **Accessible Data:**
  - The dataset is available for free to researchers worldwide, encouraging collaborative and interdisciplinary studies.

**Potential Applications**

- **Understanding Brain Development:**
  - The data can reveal how different brain structures grow and interact during gestation.
  - It may help identify factors behind developmental disorders like **autism spectrum disorder** and **cerebral palsy.**

- **Clues to Neurological Disorders:**
  - The atlas can guide research into conditions like **bipolar disorder, depression, and anxiety**, by offering a baseline for comparison with diseased brains.
- **Neonatal and Prenatal Insights:**
  - Researchers can study the impact of prenatal events, such as oxygen deprivation, on brain development and why outcomes vary between individuals.
- **Global Collaboration:**
  - The open-access dataset positions IIT-Madras as a key contributor to global brain mapping initiatives.

**Significance of 3D Brain Mapping**

- **Advancing Neuroscience:**
  - Unlike traditional 2D imaging, 3D mapping captures the complexity of the brain’s structure, aiding in a better understanding of its functionality.
  - The detailed spatial arrangement of cells and structures provides insights into developmental anomalies and disease progression.
- **Revolutionizing Diagnostics:**
  - With high-resolution imaging, clinicians and researchers can identify subtle developmental changes that may signal future neurological issues.
- **Technology Breakthrough:**
  - IIT-Madras developed end-to-end tools for brain mapping, enabling rapid and scalable imaging — processing approximately **one brain per month**.

**Global Brain Mapping Efforts**

The IIT-Madras project adds to a growing body of work by institutions worldwide:

- **Allen Institute for Brain Science (US):**
  - Published the first mouse brain atlas in 2006 and the **Allen Human Brain Atlas** in 2016, a comprehensive genomic and anatomical map.
- **BRAIN Initiative (US):**
  - Aims to map brain function at various scales, contributing to advancements in understanding neural circuits.
- **European Human Brain Project:**
  - Focused on digital brain research and interdisciplinary approaches to deciphering the brain’s complexities.
- **Brain/MINDS (Japan):**
  - Investigates higher brain functions and their implications for treating psychiatric and neurological disorders.

**Why This Research Stands Out**

- **Focus on Foetal Brain:**
  - Unlike adult brain mapping projects, IIT-Madras focuses on the developing foetal brain, a less explored but crucial area of neuroscience.

- **Technological Independence:**
  - The project developed its own tools and methodologies, showcasing India’s growing capacity for cutting-edge research in neuroscience.
- **Interdisciplinary Potential:**
  - The dataset bridges neuroscience, computational modeling, and clinical research, fostering advancements in both basic and applied sciences.

**Conclusion**

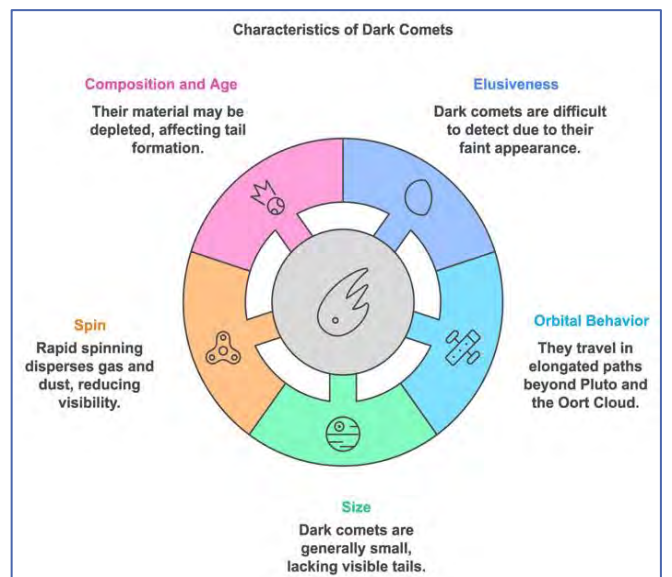
The **IIT-Madras foetal brain atlas** represents a transformative leap in neuroscience. By **detailing brain development at the cellular level** and making this information globally accessible, it provides a valuable tool for understanding brain function, addressing developmental and neurological disorders, and advancing global research efforts.

**Dark Comets**

**News Excerpt**

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Ten new **dark comets** were recently identified using the **Dark Energy Camera (DECam)**, an advanced instrument mounted on a large telescope in Chile. This discovery adds to our understanding of these enigmatic celestial bodies.



### About Dark Comets

- A dark comet is a celestial object that closely **resembles an asteroid**.
- It lacks the **bright coma or glowing tail** typically associated with traditional comets. However, it behaves like a comet, exhibiting **sudden accelerations** and other comet-like motions.
- They **deviate** from the **expected orbit**. The **Yarkovsky effect** couldn't explain that deviation.
  - It is a phenomenon that changes the path of celestial objects due to asymmetric radiation of heat energy.
- Dark comets follow **elongated, elliptical paths** that bring them close to the Sun before sweeping back out to the **farthest reaches** of the Solar System.
- The **first dark comet**, identified in **2016**, was **asteroid 2003 RM**, nicknamed "The Asteroid that Wanted to be a Comet."
- NASA discovered '**Oumuamua**' in 2017, the first documented celestial object that originated outside the solar system. It appeared like an asteroid but behaved like a comet.

### Categories of Dark Comets

- **Inner Dark Comets:** Located in the inner solar system. Follow nearly circular orbits. They tend to be smaller, typically **tens of meters or less** in size.
- **Outer Dark Comets:** Similar to Jupiter-family comets. They have highly eccentric orbits that extend far into the solar system. Larger, often measuring **100 meters or more**.

### Significance of Studying Dark Comets

- **Understanding Planet Formation:** Dark comets may provide insights into the formation of Earth, the origins of Earth's water, and possibly the beginnings of life.
- **Abundance:** A 2023 study estimates that 0.5% to 60% of Near-Earth Objects (NEOs) could be dark comets originating from the asteroid belt between Mars and Jupiter.

### About Comets

- Comets are **large celestial objects** composed of **rock, dust, and ice** that orbit the Sun.
- They are often referred to as "**dirty snowballs**" due to their composition and appearance.
- Comets are remnants from the formation of the solar system approximately **4.6 billion years ago**.
- Most comets are found in the **outer regions** of the solar system, where temperatures are low enough for ice to remain frozen.
- They are characterised by their **long-haired stars** (coma) and **streaming tails**, formed when the Sun's heat causes their **ice to sublimate** into gas.

### Types of Comets

- **Short-Period Comets:** Originate from the Kuiper Belt, a region beyond the orbit of Neptune. Have an orbital period of less than 200 years around the Sun.

- **Long-Period Comets:** Originate from the Oort Cloud, a distant spherical shell of icy bodies located beyond the Kuiper Belt. It takes more than 250,000 years to complete an orbit around the Sun.

#### PEPPER IT WITH:

Understanding Comets, Dark Energy, Near-Earth Objects (NEOs).

### Conclusion

Understanding dark comets broadens our knowledge of celestial dynamics and the solar system's history. Continued research could illuminate planet formation, origins of Earth's water, and life. Advancing detection technologies and international collaborations will be essential to uncover the mysteries and potential hazards posed by these enigmatic bodies.

## INTERNAL SECURITY

### Law against 'urban Naxalism'

#### News Excerpt:

The **Maharashtra Special Public Security Act, 2024 (MSPC Bill)**, introduced by Chief Minister

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2					8				
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4					10				
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Devendra Fadnavis, aims to address what the government perceives as the growing threat of **urban Naxalism**. While the bill draws from similar laws in states like Chhattisgarh, Telangana, Andhra Pradesh, and Odisha, it has sparked concerns over potential misuse and infringement on civil liberties.

#### Why the Law was Proposed

- **Government's Justification:**
  - Naxalism, traditionally associated with remote and forested areas, is now believed to have extended its influence to **urban centres**.
  - The government claims that "**frontal organisations**" in urban areas provide logistical support, refuge, and resources to armed Naxal cadres.
  - Existing laws like the **Unlawful Activities Prevention Act (UAPA)** are deemed inadequate to tackle urban Naxal activities due to procedural delays and limited jurisdiction.
- **Precedents in Other States:**
  - States like Chhattisgarh and Andhra Pradesh have enacted **Public Security Acts** to address similar concerns, banning 48 Naxal-affiliated organisations.
  - Maharashtra seeks to follow suit by implementing its own law tailored to local needs.

#### Main Provisions of the MSPC Bill

- **Designation of 'Unlawful Organisations':**
  - The government can declare any suspect organisation as an "**unlawful organisation**".
- **Offences and Punishments:**

- Being a member of an unlawful organisation: **Up to 2 years in prison and ₹2 lakh fine.**
- Raising funds for such organisations: **Up to 3 years and ₹3 lakh fine.**
- Managing or assisting an unlawful organisation: **Up to 5 years and ₹5 lakh fine.**
- Committing an "unlawful activity": **Up to 7 years in prison and ₹5 lakh fine.**
- **Broader Definition of 'Unlawful Activity':**  
The MSPC Bill criminalises a wide range of acts, including:
  - Interfering with **public order, peace, and administration of law.**
  - **Overawing public servants** or disrupting their lawful activities through criminal force.
  - Propagating violence, vandalism, or **fear in the public.**
  - Preaching disobedience to law or its institutions.
  - Collecting funds or resources to support any of the above activities.
- **Procedural Provisions:**
  - Offences are **cognizable and non-bailable**, allowing arrests without a warrant.
  - Prosecution permissions can be granted by **district magistrates** or **police commissioners**, bypassing delays associated with UAPA approvals.

**Differences from UAPA**

While both the UAPA and the MSPC Bill target unlawful associations and activities:

- **Definition of Unlawful Activity:**
  - **UAPA:** Focuses on acts threatening India's sovereignty, integrity, and unity. Its terms, though broad, have been defined and refined by judicial interpretation.
  - **MSPC Bill:** Expands the scope to include vague acts like interfering with public order or encouraging disobedience to law.
- **Procedural Changes:**
  - UAPA requires sanction from central or state governments for prosecution, which the MSPC Bill bypasses by delegating this authority to local officials, potentially expediting legal action but raising concerns about misuse.

**Criticism of the MSPC Bill**

- **Potential for Abuse:**
  - Critics argue that the bill's broad definitions allow the criminalisation of dissent, protests, and legitimate political activity.
  - Civil rights groups, like the **People's Union for Civil Liberties (PUCL)**, call the bill "**unconstitutional**" and a means to stifle dissent.
- **Overlapping with Existing Laws:**
  - Former CM **Prithviraj Chavan** criticized the bill as redundant, citing existing laws like the UAPA and IPC

provisions that already address terrorism and unlawful activities.

● **Chilling Effect on Civil Liberties:**

- Activists and opposition leaders fear that the law could be used to target NGOs, student groups, and other organisations critical of government policies.

**Next Steps**

The MSPC Bill has been referred to a **joint select committee** to address concerns and gather inputs from stakeholders.

**PEPPER IT WITH:**  
Urban Naxalism, Unlawful Organisation, NGO.

- **Timeline:** The revised bill is expected to be tabled during the **monsoon session** in June-July 2025.
- **Process:** The committee will review the bill clause by clause, consider amendments, and present a final report for debate and approval in the assembly.

**Conclusion**

The Maharashtra government's **MSPC Bill** seeks to tackle urban Naxalism by granting authorities expansive powers to combat unlawful organisations and activities.

However, its vague definitions, procedural shortcuts, and **potential for misuse** have raised significant concerns among civil rights groups and opposition leaders.

The debate over this bill underscores the **challenge of balancing national security** with the protection of civil liberties.

**Recent Attack in Bastar**

**News Excerpt:**

The recent attack in **Bastar, Chhattisgarh, where eight security personnel and a civilian driver were killed by an Improvised Explosive Device (IED)**, highlights the persistent internal security challenges posed by Maoist insurgency in India.

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1					7				
2					8				
3					9				
4					10				
5					11				
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A tragic incident in **Chhattisgarh's Bijapur district** resulted in the deaths of eight security personnel and a civilian driver when Maoists detonated an **Improvised Explosive Device (IED)** targeting their vehicle. The attack occurred as the personnel were returning from an operation in the Abujmad region, where they had successfully killed five Maoists, including two women.



### Incident Details:

The security personnel involved were part of the **District Reserve Guard (DRG)**, a specialized police unit established to combat Maoism in the state.

The explosion created a massive crater at the blast site, indicating the intensity of the IED used.

Eyewitnesses reported that the blast was so powerful that debris from the vehicle was scattered over a wide area, with parts found hanging on nearby trees.

### Context of Increasing Violence:

This attack marks one of the most significant blows to security forces since April 2023, reflecting a resurgence of Maoist tactics in response to intensified operations by security forces against them.

The Maoists have increasingly relied on IEDs due to their effectiveness in guerrilla warfare, posing a persistent challenge to security personnel operating in these conflict zones.

### Strategies Employed by the Government to Counter the Maoist Insurgency

The Maoist insurgency, often referred to as Naxalism, has posed significant internal security challenges in India, particularly in regions like Chhattisgarh, Jharkhand, and Odisha. The Indian government has adopted a multi-faceted approach to combat this persistent threat, focusing on both security measures and socio-economic development. Here are the main strategies employed:

#### Security Measures

##### a. Deployment of Central Armed Police Forces (CAPFs):

The government has significantly increased the deployment of CAPFs in Maoist-affected areas. This includes battalions of the Central Reserve Police Force (CRPF) and specialized units like the Commando Battalion for Resolute Action (COBRA). These forces are tasked with conducting anti-insurgency operations and maintaining law and order.

**b. Operation Green Hunt:** Launched in 2010, this large-scale military offensive aimed to eliminate Naxalite influence through coordinated operations involving thousands of security personnel. The operation has led to a reduction in the number of districts affected by Naxalism, showcasing its effectiveness.

**c. Joint Operations:** The strategy emphasizes coordinated actions between state police and central forces to enhance operational effectiveness. This includes intelligence sharing and joint patrols to disrupt Maoist activities.

**d. Intelligence Gathering Enhancements:** Strengthening intelligence networks is crucial for pre-empting Naxalite activities. The government has invested in improving surveillance capabilities through technology such as drones and satellite imagery.

#### Development Initiatives

**a. Integrated Action Plan (IAP):** This plan focuses on socio-economic development in Maoist-affected districts,

addressing local grievances through infrastructure projects, healthcare, education, and employment generation. By improving living conditions, the government aims to reduce the appeal of Maoism among local populations.

**b. Aspirational Districts Programme:** Launched to transform underdeveloped districts, this program aims to improve governance and socio-economic indicators through targeted interventions in education, health, and infrastructure.

**c. Rehabilitation Policies:** The government has introduced schemes for rehabilitating former Naxalites who surrender. These policies provide vocational training and financial assistance to help reintegrate them into society.

#### Community Engagement

##### a. Public Engagement Initiatives:

Efforts have been made to foster trust and communication between the government

#### PEPPER IT WITH:

Urban Naxalism, Unlawful Organisation, NGO.

and tribal communities. This includes engaging local leaders and civil society organizations in dialogue to address grievances that fuel discontent.

**b. Winning Hearts and Minds Strategy:** This approach emphasizes building rapport with local populations through development projects and community involvement in governance processes. By addressing socio-economic disparities, the government aims to undermine the support base of Maoist groups.

#### Legislative Measures

The Indian government has enacted several laws aimed at countering the Maoist threat:

- **Unlawful Activities (Prevention) Act (UAPA):** This law empowers authorities to take stringent action against individuals or groups involved in activities that threaten national integrity.
- **Special Central Assistance (SCA) Scheme:** This scheme provides financial support for various initiatives aimed at combating Naxalism, including infrastructure development and community welfare programs.

#### Monitoring and Review Mechanisms

To ensure effective implementation of strategies, the Ministry of Home Affairs has established various monitoring mechanisms:

- **Regular Reviews:** The situation in Maoist-affected areas is monitored regularly at different administrative levels to assess progress and adapt strategies as needed.
- **Feedback Loops:** Engaging with local populations provides valuable insights into the effectiveness of counter-insurgency measures.

#### Conclusion

The Indian government's approach to countering the Maoist insurgency is characterized by a combination of **security measures, socio-economic development initiatives,**

community engagement, legislative frameworks, and rigorous monitoring mechanisms. While significant progress has been made—evidenced by reduced violence in certain areas—the complexity of the issue necessitates ongoing efforts that address both immediate security concerns and long-term socio-economic grievances. By continuing to adapt strategies based on ground realities and engaging with affected communities, the government aims to achieve lasting peace and stability in regions impacted by Naxalism.

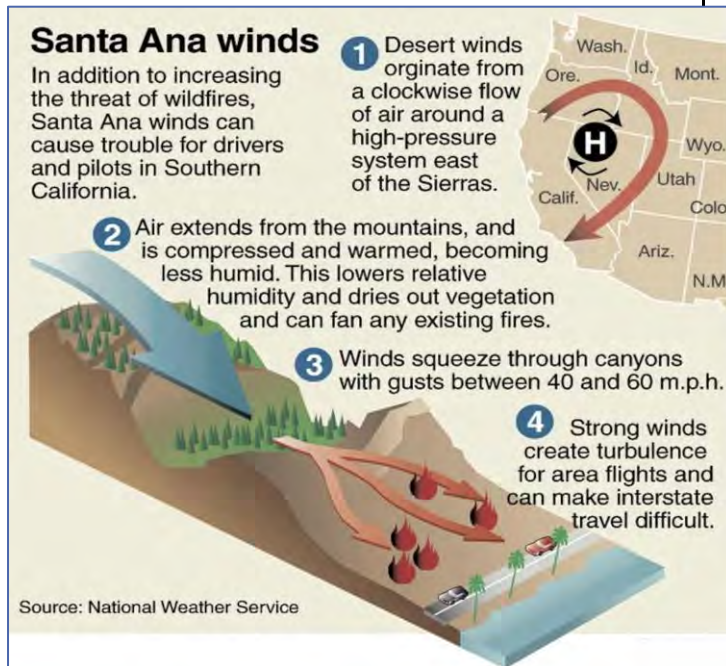
## GEOGRAPHY

### ‘Santa Ana’ winds and climate change

**News Excerpt:**

The ongoing **Franklin Fire** in Malibu, California, exemplifies the devastating intersection of **natural weather phenomena** like the **Santa Ana winds** and **climate change**, which together intensify the risks and impacts of wildfires. Here's an overview of the factors fueling the blaze:

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GS	I	II	III	IV	GS	I	II	III	IV	GS	I
1					7						
2					8						
3					9						
4					10						
5					11						
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#### Santa Ana Winds: Nature's Wildfire Accelerator

- **What Are They?**
  - Santa Ana winds occur when **high-pressure systems** over the **Great Basin** drive winds toward low-pressure areas along California's coast.
  - These winds are **hot, dry, and strong**, often gusting at speeds over **40 mph (65 km/h)**.
- **How They Fuel Wildfires:**
  - **Drying Vegetation:** The winds heat up as they descend over mountains, reducing humidity to below **20% or even 10%**, which dries out vegetation, turning it into highly flammable fuel.

- **Spreading Flames:** The winds can carry embers over large distances, creating new ignition points and spreading fires rapidly.
- **Seasonality:**
  - Santa Ana winds typically occur from **October to January**, coinciding with California's dry season, which increases the likelihood of wildfires.

#### The Role of Climate Change

- **Longer Wildfire Seasons:**
  - California's wildfire season has extended due to **rising temperatures** and **shifting weather patterns**.
  - A 2021 study highlighted that the peak wildfire season has moved from **August to July**, signaling earlier and longer fire risks.
- **Hotter and Drier Conditions:**
  - **Global warming** has resulted in:
  - **Warmer springs and summers.**
  - **Earlier snowmelt**, which reduces moisture availability in vegetation during critical months.
  - **Prolonged dry seasons**, increasing vegetation's vulnerability to ignition.

#### •Frequency and Intensity:

- A 2023 study in PNAS found that **10 of California's largest wildfires** have occurred in the last 20 years, with **5 in 2020 alone**, marking a dramatic escalation in both the scale and destructiveness of these events.

#### •Future Outlook:

- The **United Nations** warns that current climate policies could lead to **3°C warming** by 2100, far exceeding the 1.5°C limit set by the Paris Agreement.
- Such warming would result in even drier conditions and more extreme weather events, exacerbating wildfire risks.

#### Malibu's Current Situation

##### Franklin Fire Stats:

- Area burned: thousands of **acres**.
- Impact: **Scores of people affected**.
- Containment: **20%**.
- Officials expect containment efforts to continue for several days, hampered by difficult terrain and strong winds.

#### Key Challenges:

- **Wind-driven Spread:** Santa Ana winds are accelerating the fire's growth and making firefighting efforts challenging.
- **Dry Vegetation:** Drought conditions and low humidity have created ideal fuel for the fire.

#### The Broader Implications

- **Ecosystem Impact:**

**PEPPER IT WITH:**  
Wind Phenomena, Wildfire and disaster management.

- Wildfires destroy habitats, disrupt ecosystems, and cause long-term environmental damage.
- Frequent and intense fires can lead to **loss of biodiversity** and alter landscapes permanently.
- **Human Impact:**
  - Communities near wildfire-prone areas face increasing threats to lives, property, and infrastructure.
  - The economic toll includes costs for firefighting, rebuilding, and healthcare due to smoke-related illnesses.
- **Policy and Mitigation:**
  - Tackling the dual challenge of natural and climate-driven factors requires stronger policies to reduce greenhouse gas emissions and investments in **fire prevention, early warning systems, and adaptive infrastructure.**

**'Santa Ana' winds and climate change**  
**The Role of Climate Change**

While Santa Ana winds are a natural phenomenon, their impact has been exacerbated by **climate change**, which has significantly altered California's wildfire patterns:

- **Extended Fire Seasons:**
  - A 2021 study published in Nature Scientific Reports found that California's fire season has lengthened, with peak activity shifting earlier in the year (from August to July).
- **Increased Intensity of Wildfires:**
  - According to a 2023 PNAS study, **10 of the largest wildfires in California's history** have occurred in the past 20 years, with five in 2020 alone.
- **Warmer and Drier Conditions:**
  - **Global warming** has led to earlier spring snowmelt, prolonged dry seasons, and increased vegetation stress. These factors make forests more vulnerable to ignition and fuel the spread of fires.
- **Future Risks:**
  - The situation is projected to worsen as global temperatures continue to rise. Current policies are likely to lead to a **3°C rise** in global temperatures by 2100, well above the **1.5°C threshold** needed to prevent catastrophic climate impacts (UN Report).

**Implications**

- **Human Impact:** Thousands have been displaced, with significant damage to homes, infrastructure, and businesses.
- **Environmental Costs:** Widespread destruction of ecosystems and wildlife habitats.

- **Policy Challenges:** The ongoing wildfires underscore the urgent need for climate action, improved land management, and better disaster preparedness.

**Conclusion**

- The devastating wildfires in Southern California highlight the dangerous intersection of natural phenomena like **Santa Ana winds** and the worsening impacts of **climate change**. While these winds are an enduring feature of California's climate, their destructive potential has been amplified by rising global temperatures, underscoring the urgent need for both climate mitigation and adaptation strategies.

**The Polar Vortex in Winter Storm**

**News Excerpt:**

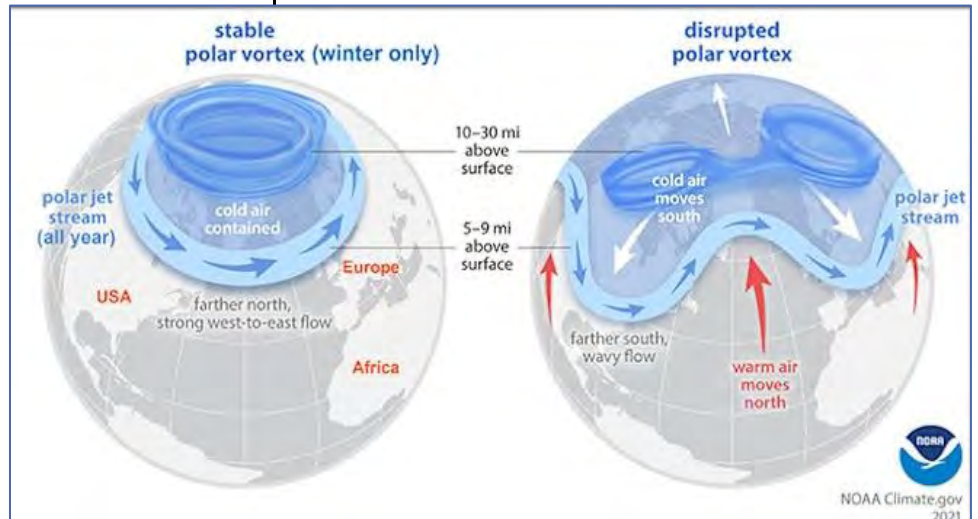
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The recent winter storm in the United States, which resulted in five fatalities, power outages, and hazardous conditions, has been linked to the **southward expansion of the polar vortex**. Here's an overview of the phenomenon and its connection to extreme cold events:

**What is the Polar Vortex?**

The **polar vortex** is a vast region of **low-pressure and cold air** that swirls in a counterclockwise motion around the Earth's poles. It operates at two levels in the atmosphere:

- **Tropospheric Polar Vortex:**
  - Found in the lowest atmospheric layer (up to 10–15 km).
  - Influences most weather patterns experienced on the surface.



- **Stratospheric Polar Vortex:**
  - Found in the upper atmosphere (15–50 km).
  - More pronounced in autumn and winter but dissipates during summer.

**How the Polar Vortex Causes Extreme Cold**

Under normal conditions, a **strong polar vortex** keeps the cold Arctic air contained near the poles, maintained by a stable jet stream.



However, when the vortex **weakens or destabilizes**, fragments of cold air migrate southward, carried by a disrupted and meandering jet stream. This causes:

- A southward incursion of Arctic air.
- Widespread cold weather and severe storms in areas far from the poles, including the US, Europe, and Asia.

For instance, this week's **southward displacement of the polar vortex** brought Arctic temperatures as far south as regions like Florida.

**The Role of the Jet Stream**

The **jet stream**, a fast-moving ribbon of air in the upper atmosphere, helps regulate the distribution of cold and warm air.

- **When strong:** The jet stream follows a circular path, keeping Arctic air confined.
- **When weak:** It becomes wavy and disorganized, allowing cold polar air to intrude into lower latitudes.

High-pressure systems can further disrupt the jet stream, facilitating a polar vortex collapse and southward movement of cold air.

**Impact of Climate Change on the Polar Vortex**

The connection between climate change and polar vortex disruptions is still under study, but some evidence suggests:

- **Rapid Warming at the Poles:**
  - The Arctic is warming at nearly **four times the global average**, a phenomenon called **Arctic amplification**.
  - This warming reduces the temperature gradient between the poles and the equator, weakening the polar vortex and jet stream.
- **Increased Vortex Disruptions:**
  - Weakening of the polar vortex makes it more likely to destabilize and migrate southward.
- **Irregular Extreme Weather:**
  - Warmer Arctic temperatures may be linked to more frequent and intense cold snaps in mid-latitudes.

**PEPPER IT WITH:**  
Polar vortex formation, Jet stream, Storm Formation.

**Conclusion**

The interplay between the polar vortex, jet stream, and climate change highlights how **warming temperatures** can paradoxically lead to extreme cold weather.

While research continues, the recent storm serves as a reminder of the complex ways in which climate systems interact and the importance of preparing for more frequent extreme weather events.



**DISASTER MANAGEMENT**

**Soapstone Mining and Land Subsidence Uttarakhand**

**News Excerpt**

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The Uttarakhand High Court's scrutiny of unregulated soapstone mining in Bageshwar district reveals severe environmental, cultural, and administrative issues. The region, rich in soapstone reserves, is experiencing significant land subsidence, threatening local communities, cultural heritage, and ecosystems.

**What is Soapstone, and Why is It Mined?**

- **Soapstone** is a metamorphic rock primarily composed of talc.
- Applications include construction (countertops, sinks, sculptures) and industrial uses (cosmetics and pharmaceuticals).
- **Uttarakhand** accounts for **25%** of India's soapstone reserves, with Bageshwar hosting over **160 mines**.

**Environmental Concerns**

**Land Subsidence**

- Land subsidence, defined by NOAA as the "sinking of the ground due to underground material movement," is rampant in mining areas.

**Mechanisms of Land Subsidence**

- **Mining Practices:** The extraction of soapstone often occurs at lower slope areas, which destabilizes the upper slopes where villages are located. This practice increases vulnerability to mass movements such as landslides.
- **Lack of Safeguards:** The absence of green belts, retaining walls, and proper slope monitoring allows for unchecked erosion and instability. Heavy machinery used

in mining exacerbates these issues by compacting soil and destabilizing rock formations.

**Causes in Bageshwar:**

- o Mining at lower slopes undermines the stability of upper slope villages.
- o Loamy, loose soil in the region is highly prone to erosion, particularly during monsoons.
- Similar patterns were observed in **Joshimath (2022)**, where subsidence caused cracks in roads and houses.

**Structural Integrity**

- Loss of slope stability increases risks of landslides and erosion.
- Lack of **green belts, retaining walls, and buffer zones** exacerbates instability.

**Water and Air Pollution**

- Mining and associated transportation have contributed to:
  - o **Water scarcity and contamination.**
  - o **Air pollution,** impacting local health and ecosystems.

**PEPPER IT WITH:**  
Land subsidence, Mining ill effect, Himalayan geology.

**Cultural Impacts**

**Kumaoni Bakhli Damage**

- The **Kumaoni Bakhli**, traditional earthquake-resilient houses, are now compromised due to subsidence.
- Foundation shifts and structural damage threaten the architectural heritage of the region.

**Kalika Temple at Risk**

- The **Kalika Temple** (10th century) in Kanda, a site of cultural and religious significance, now shows cracks in its floors due to subsidence.
- The region's cultural practices, including folk music, dance, and handicrafts, face disruptions as communities are displaced.

**Administrative Failures**

The High Court report highlights administrative complicity:

**Unregulated Semi-Mechanised Mining**

- Environmental clearances lack clear definitions or policy limitations for "semi-mechanised" mining.
- Heavy equipment use has worsened the environmental degradation.

**Collusion with Mine Owners**

- Allegations of revenue officials' knowledge of illegal activities, including:
  - o Encroachment on **Van Panchayat lands.**
  - o **Illegal deforestation** for mining operations.

- District officials allegedly suppressed villagers' grievances and supported mine owners.

**What Lies Ahead?**

The Uttarakhand High Court will next hear the matter on **9 January 2025**, focusing on:

- Policies to regulate mining practices.
- Accountability of administrative authorities.
- Immediate steps to stabilize affected areas and safeguard vulnerable communities and cultural sites.

**Conclusion**

While soapstone mining contributes positively to the socio-economic landscape by generating employment and supporting local economies, it also poses significant environmental challenges, particularly concerning air and water quality. The implementation of comprehensive Environmental Impact Assessments (EIA) is crucial in identifying potential adverse effects and ensuring that appropriate mitigation measures are put in place.

**California Wildfire**

**News Excerpt**

The recent **wildfires in California**, particularly those affecting Los Angeles in January 2025, have underscored the growing challenges of **managing natural disasters in an era marked by climate change**. As fires ravaged over 55 square miles, leading to significant destruction and loss of life, it became evident that a combination of natural factors and human actions contributed to the severity of these incidents.

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**Contextual Background**

- California has faced **increasing wildfire incidents over the past few decades, with ten of the largest wildfires occurring in the last twenty years.**
- A study published in the **Proceedings of the National Academy of Sciences** highlights that nearly all

observed increases in burned areas are attributable to human-induced climate change.

- Factors such as rising temperatures and prolonged droughts have exacerbated conditions conducive to wildfires.
- In January 2025, Southern California experienced a combination of extreme weather conditions, including **hurricane-force winds reaching up to 100 miles per hour. These winds not only fueled existing fires but also hindered firefighting efforts by making aerial water drops nearly impossible.**
- The situation was further complicated by a lack of adequate water supply due to infrastructure issues and power outages affecting water pumping systems.

### Causes of the Wildfires

- **Climate Change:** Research indicates that climate change has led to longer and more intense dry seasons, creating a "perfect storm" for wildfires. The warming climate contributes to increased dryness and heat, making vegetation more susceptible to ignition.
- **Vegetation Management:** Poor vegetation management practices have been cited as a significant factor in the intensity of the fires. Inadequate clearing of brush and dead trees can create fuel for wildfires, allowing them to spread rapidly.
- **Aging Infrastructure:** The infrastructure supporting firefighting efforts has been criticized for being outdated. For instance, during the recent fires, reports emerged of diminished water pressure at local fire hydrants and empty reservoirs due to maintenance issues, which severely hampered firefighting capabilities.
- **Human Activity:** Approximately 85% of wildfires are caused by human activities, whether through negligence or deliberate actions. This statistic emphasizes the need for public awareness and education regarding fire safety.

### Impact Analysis

The consequences of the January 2025 wildfires were profound:

**Loss of Life and Property:** At least ten fatalities were reported alongside thousands of destroyed buildings. The economic impact is expected to be substantial, with costs associated with rebuilding infrastructure and homes.

**Environmental Damage:** The fires resulted in significant ecological harm, including loss of biodiversity and damage to habitats. Smoke from wildfires also contributes to air pollution, posing health risks to nearby communities.

**Community Displacement:** Many residents were forced to evacuate their homes, leading to temporary shelters being

established across Los Angeles County. For example, shelters were opened at various locations accommodating hundreds of displaced individuals.

### Case Study: Community Response

In light of these devastating fires, community initiatives have emerged aimed at improving resilience against future wildfires. For instance, neighborhoods like Pacific Palisades have begun forming "**fire safe councils**" that qualify homeowner associations for grants to enhance fire preparedness measures. These measures include improving evacuation routes and clearing brush around properties.

### Lessons Learned

**Improved Infrastructure Planning:** The need for modernizing firefighting infrastructure is critical. Investments in reliable water supply systems and backup power sources can enhance response capabilities during emergencies.

**Proactive Vegetation Management:** Regular clearing and controlled burns can reduce fuel loads in fire-prone areas, potentially lessening the severity of future wildfires.

**Public Awareness Campaigns:** Educating communities about fire safety and preparedness can empower residents to take proactive measures in safeguarding their properties.

**Integrating Climate Action:** Addressing climate change through sustainable practices is essential for long-term wildfire management. This includes promoting reforestation efforts and reducing greenhouse gas emissions.

### Specific Measures Recommended by the Disaster Management Act for Wildfire Prevention

The **Disaster Management Act of 2005** in India provides a comprehensive framework for managing disasters, including wildfires. While the Act itself does not explicitly detail wildfire prevention measures, it establishes guidelines and responsibilities for various authorities to mitigate risks associated with such disasters.

### National Disaster Management Authority (NDMA)

The NDMA is the apex body responsible for disaster management in India. It formulates policies and guidelines that include wildfire management strategies. Key recommendations include:

- **Preparation of National Plans:** The NDMA is tasked with preparing a National Disaster Management Plan that includes measures for wildfire prevention, mitigation, and response.
- **Guidelines for Forest Fire Management:** The NDMA has issued guidelines specifically addressing forest fire management, emphasizing the need for proactive measures to prevent wildfires.

### State Disaster Management Authorities (SDMAs)

Each state has its own SDMA responsible for implementing the policies set by the NDMA. The SDMAs are required to:

- **Develop State-Specific Plans:** Create disaster management plans that incorporate wildfire prevention strategies tailored to local conditions and risks.
- **Capacity Building:** Train personnel in firefighting techniques and establish systems for rapid response to wildfire incidents.

#### District Disaster Management Authorities (DDMAs)

At the district level, DDMAs play a critical role in managing wildfires. Their responsibilities include:

- **Local Preparedness Plans:** Formulating district-specific disaster management plans that outline actions to be taken during wildfire incidents.
- **Community Engagement:** Involving local communities in fire prevention activities, such as controlled burns and brush clearing, to reduce fuel loads in fire-prone areas.

#### Forest Fire Management Framework

The Ministry of Environment, Forest and Climate Change has developed a framework that includes:

- **Creation of Fire Lines:** Establishing fire lines to prevent the spread of wildfires by creating barriers.
- **Controlled Burns:** Implementing controlled or prescribed burns as a preventive measure to reduce excessive vegetation that could fuel wildfires.
- **Infrastructure Development:** Investing in infrastructure such as watchtowers, water storage structures, and communication systems to enhance firefighting capabilities.

#### Public Awareness Campaigns

The Act emphasizes the importance of public awareness and education regarding fire safety and prevention measures:

- **Training Programs:** Conducting workshops and training sessions for local communities on fire prevention techniques and emergency response protocols.
- **Awareness Campaigns:** Launching campaigns to educate the public about the risks of wildfires and how

to prevent them, including responsible land use practices.

#### Monitoring and Early Warning Systems

To enhance preparedness, the Act encourages the establishment of monitoring systems:

- **Forest Fire Alerts:** Utilizing technology such as satellite imagery (e.g., MODIS sensors) to provide real-time alerts about potential wildfire outbreaks.
- **Data Collection and Analysis:** Gathering data on weather patterns, vegetation types, and historical fire incidents to identify high-risk areas and inform preventive measures.

#### Collaboration with Local Authorities

The Disaster Management Act mandates collaboration between various governmental bodies:

- **Inter-agency Coordination:** Ensuring that all relevant agencies work together during wildfire incidents to streamline responses and resource allocation.
- **Community-Based Approaches:** Engaging local communities in forest management practices through participatory approaches that empower them to take ownership of fire prevention efforts.

#### Conclusion

The January 2025 California wildfires serve as a stark reminder of the escalating risks posed by climate

#### PEPPER IT WITH:

Forest management, Wild fire management, Disaster management act.

change and inadequate disaster preparedness. By analyzing the causes and impacts of these fires, we can glean valuable insights into how communities can better prepare for future incidents. Through improved infrastructure planning, proactive vegetation management, public education initiatives, and a commitment to combating climate change, society can work towards mitigating the devastating effects of wildfires while fostering resilient communities capable of withstanding such challenges in the future.

## PRE-SHOTS

### POLITY

#### Right to Property a Constitutional Right

##### News Excerpt

The Supreme Court of India has reinforced that the right to property, though no longer a fundamental right, remains a **constitutional right** under **Article 300-A of the Constitution**. The judgment highlights the necessity for adequate compensation to be paid to individuals whose property is acquired by the state.

##### Key Highlights of the Judgment

- **Constitutional Basis:**
  - **Article 300-A:** "No person shall be deprived of his property save by authority of law."
  - This ensures the right to property remains protected, even though it ceased to be a fundamental right after the **44th Constitutional Amendment, 1978**.
- **Human Right Aspect:**
  - The bench emphasized that in a welfare state, the right to property also holds the status of a **human right**, ensuring citizens are not unfairly deprived of their assets.
- **Background of the Case:**
  - The case arose from land acquisition disputes for the **Bengaluru-Mysuru Infrastructure Corridor Project (BMICP)**.
  - Landowners were deprived of compensation for over 22 years due to delays and bureaucratic inefficiencies.
- **Supreme Court's Observations:**
  - It criticized the "lethargic attitude" of state officials and the **Karnataka Industrial Areas Development Board (KIADB)**.
  - The court noted that the delay caused significant injustice to the landowners.

##### Decision on Compensation

- **Market Value Assessment:**
  - Initially, compensation was calculated based on the land's market value in 2003.
  - The Supreme Court, invoking its powers under **Article 142**, directed that the **market value as of April 22, 2019**, be used to determine compensation.
- **Fresh Award:**
  - The Special Land Acquisition Officer (SLAO) must re-assess the compensation within **two months**.
  - Aggrieved parties retain the right to challenge the revised award.

##### Significance of the Judgment

- **Precedent for Timely Compensation:**
  - Ensures that delays in awarding compensation do not undermine the constitutional guarantees under Article 300-A.

- Promotes accountability among state authorities.
- **Addressing Inflation and Delays:**
  - The judgment acknowledges the impact of inflation and the time value of money, emphasizing the importance of prompt compensation.
- **Exercise of Article 142:**
  - The use of extraordinary powers highlights the judiciary's role in delivering justice in protracted cases.

##### Conclusion

The **Supreme Court's ruling** reaffirms the sanctity of the **right to property** as a **constitutional right**, ensuring fair compensation for individuals whose property is acquired for public purposes. This judgment serves as a **reminder of the state's duty** to act promptly and justly in matters involving citizens' property.

#### Legally enforceable right to secure educational

##### News Excerpt

The Supreme Court of India has reaffirmed that **daughters have a legally enforceable right to secure educational expenses from their parents**, highlighting the fundamental right to education and financial support within the parents' means.

##### Key Highlights:

- **Legal Right to Educational Expenses:**
  - The Court emphasized that a daughter has an **indefeasible and legitimate right** to demand financial support from her parents for her education.
  - Parents can be **compelled to provide funds** for their daughter's academic pursuits within their financial capacity.
- **Case Context:**
  - In a matrimonial dispute, the daughter of an estranged couple, studying in Ireland, refused to accept **Rs 43 lakh** provided by her father for her studies, as it was part of the alimony paid to her mother.
  - The daughter declined the amount to maintain her dignity, but the Court ruled that she is **legally entitled** to retain it.
- **Court's Observations:**
  - The Court noted that the father was financially capable of providing support, as he had spent the money without any compelling reasons.
  - It ruled that the daughter need not return the money to her father or mother, as it was legitimately meant for her education.
- **Fundamental Right to Education:**
  - The Court underlined that the **right to education** is a fundamental right, and parents are obligated to

ensure their children, especially daughters, can pursue their academic goals.

This judgment strengthens the legal framework **ensuring daughters' rights to education and financial support**, irrespective of **matrimonial disputes or family dynamics**.

## The Concept of a State Funeral

### News Excerpt

The former Prime Minister **Manmohan Singh**, who passed away on **26 December 2024**, was accorded a **state funeral** on 28 December at **Nigambodh Ghat** in New Delhi. His ashes were immersed in the Yamuna River on 29 December following Sikh rituals.

### What is a State Funeral?

A **state funeral** is an elaborate ceremony organized to honor individuals of significant stature, conducted in accordance with official guidelines. It involves:

- Public participation in the mourning.
- Draping the body in the **Indian national flag**, later replaced with a ceremonial cloth before cremation.
- A procession involving a **ceremonial military escort**.

### Who Qualifies for a State Funeral?

As per Indian government guidelines:

- Automatically eligible:
  - **Sitting and former Presidents.**
  - **Sitting and former Prime Ministers.**
  - **Sitting Governors.**
- Discretionary cases:
  - Individuals who have made **exceptional contributions** to the country, as determined by the **Central Government**.

### Recent examples include:

- **Ratan Tata** (industrialist).
- **Lata Mangeshkar** (singer).

### State Funeral Protocols

- **Planning:**
  - The **Ministry of Defence**, upon instructions from the **Ministry of Home Affairs**, arranges the ceremony.
  - Gazetted officers attend, and service personnel wear ceremonial dress.
- **Flag Protocol:**
  - The **National Flag** is draped over the bier or coffin with the **saffron side towards the head**.
  - The flag is **not lowered into the grave or burnt on the pyre**, as per Section 3.58 of the **Flag Code of India (2002)**.

**National Mourning:** It can also be declared for exceptional individuals. It involves:

- **Flags at half-mast:** The **National Flag** is flown at half-mast across India or a particular state.

- **Suspension of entertainment:** No official entertainment is held during this period, except on days like Republic Day or Independence Day, when mourning is temporarily paused.

For **Manmohan Singh**, the government announced **seven days of state mourning** from **26 December to 1 January 2025**. During this period:

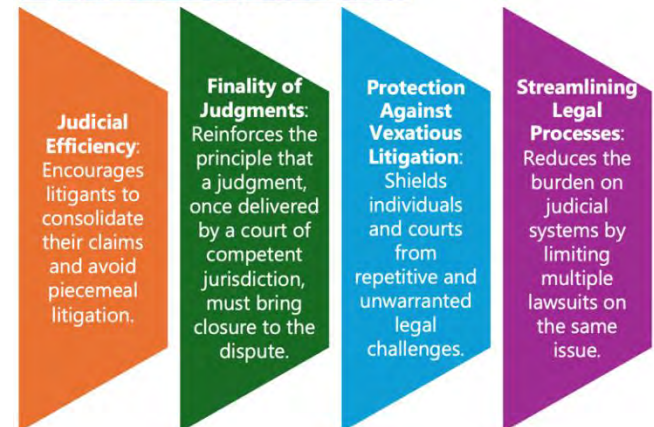
- The **National Flag** was flown at half-mast across the country.
- Official entertainment events were suspended.

## Supreme Court Explains the Henderson Doctrine

### News Excerpt

The Supreme Court of India recently elaborated on the **Henderson Doctrine**, emphasising its connection to the **doctrine of constructive res judicata**.

### Significance of the Henderson Doctrine



### About Henderson Doctrine

- **Origin:** The doctrine originates from the **English case of Henderson vs. Henderson (1843)**. It mandates that all issues relating to the **same subject matter** in litigation must be addressed within a **single suit**.
- **Core Principles**
  - **Bar on Relitigation:** Prohibits litigating issues that **could or should have been raised** in prior proceedings.
  - **Comprehensive Case Presentation:** Parties involved in litigation are required to bring their whole case before the court in a single proceeding.
  - **Application of Res Judicata:** Extends the principle of res judicata to include not only matters actually adjudicated but also issues that should have been brought forward during the litigation.
  - **Prevention of Repetitive Litigation:** Protects litigants from vexatious and repetitive legal challenges, ensuring judicial efficiency and finality.

- **Exceptions:** The doctrine allows exceptions only under exceptional circumstances, where it is proven that the issues could not have been raised earlier.

#### About Principle of Res Judicata

- **Res Judicata** means "**the thing has been judged**" and is also referred to as **claim preclusion**.
- It bars the filing of a new lawsuit on the **same subject matter** between the **same parties** once a competent court has delivered its judgment.
- **Key Features**
  - **Prevention of Re-Litigation:** Ensures courts do not adjudicate the same issue multiple times, promoting judicial efficiency.
  - **Applicability:** Applicable in both civil and criminal legal systems.
  - **Judicial Authority:** The concept applies when the same court or a different court has already decided the matter between the same parties. A new petition on the same issue will be dismissed as redundant.

#### Relationship Between Henderson Doctrine and Res Judicata

- The Henderson Doctrine is a **natural corollary** of the **principle of res judicata**:
- While **res judicata** prohibits the relitigation of issues already adjudicated, the Henderson Doctrine goes further by barring issues that **could or should have been raised** in the initial proceedings.
- Both doctrines aim to **promote judicial economy**, prevent **abuse of legal processes**, and ensure **finality in litigation**.

## ECONOMY

### India's first Organic Fisheries Cluster

#### News Excerpt

The inauguration of India's first **Organic Fisheries Cluster** in Sikkim represents a pioneering step toward sustainable aquaculture under the **Pradhan Mantri Matsya Sampada Yojana (PMMSY)**. Spearheaded by **Union Minister Rajiv Ranjan Singh**, this initiative showcases a commitment to environmentally friendly and innovative fisheries practices, especially in the **NorthEast Region (NER)**.

#### Key Highlights

##### Organic Fisheries Cluster in Sikkim

- **Location:** Soreng District, Sikkim.
- **Focus:** Development of organic aquaculture with special emphasis on **amur carp** and other species.
- **Objective:**
  - Avoid the use of harmful chemicals, pesticides, and antibiotics in fish farming.
  - Preserve aquatic ecosystems and minimize environmental pollution.

- Tap into premium domestic and international markets for organic fish products.

#### Role of NABARD:

- Provide financial and technical support for fisheries infrastructure.
- Promote fisheries-based **Farmer Producer Organizations (FFPOs)** and engage fishers' cooperatives.
- Attract private investments and enhance branding of Sikkim's cold-water fisheries.

#### Cluster-Based Approach

The PMMSY adopts a cluster-based strategy to:

- Strengthen fisheries value chains.
- Enhance competitiveness and reduce operational costs.
- Promote innovation and sustainable practices.

Clusters across India focus on various fisheries sectors, including:

- **Pearl fisheries (Jharkhand)**
- **Ornamental fisheries (Tamil Nadu)**
- **Seaweed (Lakshadweep)**
- **Tuna (Andaman & Nicobar Islands)**

#### Fisheries Development in the North East Region (NER)

- **Cumulative Investment:** ₹2,114 crore since 2015 under key schemes like PMMSY, Blue Revolution, and Fisheries Infrastructure Development Fund (FIDF).
- **Impact:**
  - Inland fish production surged from 4.03 lakh tonnes in 2014-15 to 6.41 lakh tonnes in 2023-24.
  - Employment generation for over 4,500 individuals through 50 new projects with a central share of ₹38.63 crore.

#### India's Fisheries Sector Milestones

- **Global Standing:**
  - Second-largest fish producer in the world (8% of global output).
  - Second in aquaculture production and leading in shrimp export.
- **Contribution:** Employs over **3 crore fishers and farmers**, driving India's **Blue Economy vision**.

#### Significance

- The launch of the Organic Fisheries Cluster aligns with Sikkim's reputation as a leader in organic agriculture, advancing its status as a pioneer in **eco-friendly and sustainable aquaculture practices**.
- This initiative not only strengthens India's fisheries economy but also promotes biodiversity conservation and global sustainability goals.

#### Looking Ahead

The integration of sustainable practices, enhanced infrastructure, and a focus on value-added fish products positions Sikkim and the North East as vital contributors to India's growing prominence in the global fisheries and aquaculture landscape.

## Drone-based system to monitor illegal fishing

Maharashtra has become the **first state in India** to deploy a **drone-based surveillance system** to monitor illegal fishing activities and enforce the **Marine Fishing Regulation (Amendment) Act, 2021**.

### Key Highlights:

- **Drone Deployment:**
  - The Fisheries Department has acquired **nine drones** to monitor **seven coastal districts**.
  - Surveillance covers the state's **720-km coastline** and **12 nautical miles** of territorial waters.
- **Control Room:**
  - A centralized control room in **Mumbai** oversees drone operations and coordinates with the **coastal police** to enhance maritime security.
  - Drones can conduct surveys up to **120 nautical miles daily**.
- **Data as Legal Evidence:**
  - Data and footage collected by drones will serve as **legal evidence** against unauthorized fishing boats.
- **Strategic Locations:**
  - Surveillance will focus on key locations such as **Shirgaon (Palghar), Uttan (Thane), Gorai (Mumbai suburbs), Sassoon Docks (Mumbai City), Varsoli and Srivardhan (Raigad), Bhate and Mirkarwada (Ratnagiri), and Devgad (Sindhudurg)**.
- **Minister's Statement:**
  - **Nitesh Rane**, Minister for Fisheries and Ports, stated that the system will bring Maharashtra's maritime areas under **camera surveillance**, effectively curbing illegal fishing activities.

## Key Highlights of the ASUSE 2023-24 Results

### News Excerpt

The **Annual Survey of Unincorporated Sector Enterprises (ASUSE) 2023-24** results provide a comprehensive overview of the unincorporated non-agricultural sector's economic and operational performance, with data spanning **October 2023 to September 2024**.

Conducted by the **Ministry of Statistics and Programme Implementation (MoSPI)**, this survey covers both rural and urban areas across the country, focusing on establishments in manufacturing, trade, and other services.

Below are the critical takeaways:

### Growth in Establishments, GVA, and Productivity Metrics

- **Establishment Growth:**

- Total establishments increased from **6.50 crore** (2022-23) to **7.34 crore** (2023-24), reflecting a robust **12.84% growth**.
- Sector-wise growth:
  - **Other Services:** 23.55% increase.
  - **Manufacturing:** 13% increase.
- **Gross Value Added (GVA):**
  - Overall GVA rose by **16.52%**, driven by:
    - **Other Services:** 26.17% growth.
- **Labour Productivity:**
  - GVA per worker increased from **₹1,41,769** (2022-23) to **₹1,49,742** (2023-24), a **5.62% rise** in current prices.
  - Gross Value of Output (GVO) per establishment grew to **₹4,91,862** from **₹4,63,389**.

### Labour Market Performance

- **Employment:**
  - Over **12 crore workers** employed, reflecting a **1 crore increase** from 2022-23.
  - Sector-wise employment growth:
    - **Other Services:** 17.86% growth.
    - **Manufacturing:** 10.03% growth.
- **Female Entrepreneurship:**
  - Percentage of **female-owned proprietary establishments** rose from **22.9%** to **26.2%**, indicating a significant increase in **women's participation in business ownership**.
- **Wages and Emoluments:**
  - Average emolument per hired worker increased by **13%**.
  - Manufacturing sector led wage growth with over **16% increase**, enhancing worker welfare and economic demand.

### Enhanced Digital Adoption

- **Internet Usage:**
  - Establishments using the internet increased from **21.1%** to **26.7%**, underscoring a strong shift toward **digital transformation** and **modernized business operations**.

### Insights and Implications

- **Economic Recovery:**
  - The significant growth across metrics reflects a strong recovery from pandemic-induced challenges and highlights the sector's pivotal role in India's economic resurgence.
- **Women Empowerment:**
  - The rise in female entrepreneurship is a positive trend, contributing to inclusive growth and societal progress.
- **Digital Penetration:**



- Increasing internet usage indicates growing digital literacy and a transition towards tech-driven business ecosystems.
- **Policy Implications:**
  - The insights support targeted policymaking for MSMEs, labour market reforms, and digital infrastructure development to sustain growth momentum.

## The GATT-ification of the World Trade Organization

### News Excerpt

The challenges faced by the World Trade Organization (WTO) and its gradual regression toward the diplomacy-based trade multilateralism of the General Agreement on Tariffs and Trade (GATT) era. Below are the key points discussed:

### WTO's Dispute Settlement Crisis

- The WTO's two-tier dispute settlement system, including the **Appellate Body (AB)**, has been non-operational for five years.
- The United States, under successive administrations (Obama, Trump, and Biden), has blocked the appointment of AB members, stalling the system.
- Without an operational AB, losing countries in trade disputes can appeal decisions indefinitely, rendering the process ineffective.

### Historical Promise of the WTO

- Established in 1995 during the rise of neoliberalism, the WTO aimed to create a **rule-based system** for trade, transitioning from GATT's diplomacy-based framework.
- It introduced **binding dispute settlement mechanisms**, covering goods, services, and intellectual property, with the potential for effective retaliation against violations.
- The WTO was seen as a constitutional project ensuring the primacy of **international law over politics** in trade.

### The U.S.-China Factor and Unraveling of the WTO

- The U.S. supported China's WTO accession in 2001, expecting China to embrace free-market principles. However, China's state-led industrial policies persisted, leading to U.S. dissatisfaction.
- The WTO's legal frameworks have constrained the U.S. from taking unilateral measures against China.
- The U.S. has increasingly sidestepped WTO rules, imposing tariffs and planning industrial policies that violate WTO norms, with little accountability due to the non-functional AB.

### Regime Change: The GATT-ification of WTO

- Scholars argue that the WTO is undergoing a **regime change** rather than a temporary crisis:

- From **thick legality** (1995–2019) to a **thinning legality**, countries are reclaiming control over trade policies.
- The shift moves international trade back to the **diplomacy-based governance** of the GATT era.
- This "GATTification" reflects a rollback of the legal revolution in international trade multilateralism.

### Implications for the Global Trading System

- The WTO's diminished relevance suggests a return to **power-based trade relations**, where dominant economies shape rules to their advantage.
- The absence of a functional dispute settlement mechanism undermines trust in the WTO as a neutral referee.
- While technical negotiations in Geneva continue, they fail to address the larger structural and geopolitical challenges.

### Conclusion

- The WTO faces an existential crisis, with its foundational principles of **rule-based multilateralism** eroding under the pressures of geopolitical rivalries and protectionist policies.
- **As global trade governance** reverts to GATT-style diplomacy, the vision of a robust international trade order guided by law appears increasingly distant.

## RBI Forms Committee for Ethical Enablement of AI in Financial Sector

In a significant move towards integrating ethical considerations into the rapidly evolving landscape of artificial intelligence (AI), the Reserve Bank of India (RBI) has established an eight-member committee tasked with developing a framework for the responsible and ethical enablement of AI in the financial sector.

This initiative, known as **FREE-AI** (Framework for Responsible and Ethical Enablement of Artificial Intelligence), reflects the growing recognition of the need to balance innovation with ethical governance and risk management.

### Committee Composition and Leadership

The committee will be chaired by **Dr. Pushpak Bhattacharya**, a distinguished professor from the Department of Computer Science and Engineering at IIT Bombay. The diverse panel includes experts from various fields, ensuring a comprehensive approach to the challenges posed by AI in finance.

### Objectives of the Committee

The FREE-AI committee is tasked with several critical objectives:

- **Assessment of AI Adoption:** The committee will evaluate the current level of AI adoption in financial services both globally and within India. This assessment

will provide insights into how AI technologies are being utilized across various financial institutions.

- **Regulatory Review:** A comprehensive review of existing regulatory and supervisory approaches concerning AI in the financial sector will be conducted. This includes examining how other jurisdictions manage AI risks and governance.
- **Risk Identification and Mitigation:** The committee will identify potential risks associated with AI applications in finance. This includes evaluating ethical concerns, data privacy issues, algorithmic biases, and operational risks.
- **Governance Framework Development:** The committee will recommend a robust governance framework that encompasses compliance requirements for financial institutions, including banks, non-banking finance companies (NBFCs), fintechs, and payment system operators (PSOs).
- **Monitoring and Compliance Requirements:** An evaluation, mitigation, and monitoring framework will be proposed to ensure adherence to ethical standards and regulatory requirements.

#### Importance of Ethical AI in Finance

As financial services increasingly rely on AI technologies for functions such as credit scoring, fraud detection, customer service automation, and algorithmic trading, the need for ethical guidelines becomes paramount. While AI offers numerous advantages—such as enhanced efficiency and personalized services—it also introduces significant risks:

- **Bias in Decision-Making:** AI systems can inadvertently perpetuate biases present in training data, leading to unfair treatment of certain customer segments.
- **Data Privacy Concerns:** With vast amounts of sensitive customer data being processed by AI systems, ensuring data protection is crucial to maintaining consumer trust.
- **Transparency and Accountability:** The opaque nature of some AI algorithms makes it challenging to understand their decision-making processes, raising concerns about accountability.

The **FREE-AI initiative** aligns with global efforts to establish ethical frameworks for AI governance. For instance, the European Union's proposed **AI Act** aims to regulate high-risk AI applications across various sectors, ensuring safety and fundamental rights protection.

#### Conclusion

The RBI's formation of the FREE-AI committee marks a proactive step towards fostering an environment where technological innovation can flourish alongside ethical considerations. By addressing potential risks associated with AI while promoting responsible usage, this initiative aims to create a resilient and inclusive financial ecosystem. As India continues to embrace digital transformation within its financial sector, the recommendations from this committee will be pivotal in shaping policies that govern AI's

deployment responsibly. The outcomes could serve as a model for other countries grappling with similar challenges in balancing innovation with ethical integrity in technology adoption.

## SOCIAL ISSUES

### Idiopathic Pulmonary Fibrosis (IPF)

#### News Excerpt

The recent passing of tabla maestro and five-time Grammy Award winner **Zakir Hussain** due to **Idiopathic Pulmonary Fibrosis (IPF)** has brought attention to this chronic lung disease.

#### About Idiopathic Pulmonary Fibrosis (IPF)

- The term "**idiopathic**" signifies that its exact cause is **unknown**.
- IPF is a **chronic, progressive lung disease** characterised by **scarring (fibrosis)** of lung tissue, which leads to irreversible loss of lung function.
- IPF specifically targets the **interstitium**, the tissue surrounding the air sacs (**alveoli**), impairing oxygen transfer to the bloodstream. Over time, this causes **persistent breathlessness, fatigue, and a reduced quality of life**.
- The body's healing process becomes **dysregulated**, producing excessive **collagen** and fibrous materials instead of normal lung tissue. This abnormal scarring impairs lung function over time.
- **Potential Contributing Factors:**
  - **Genetics:** A genetic predisposition may influence the abnormal repair process.
  - **Environmental Exposures:** Long-term exposure to irritants like dust, wood, or metal particles.
  - **Chronic Inflammation:** Persistent inflammation may trigger excessive fibrosis.
  - **GERD (Gastroesophageal Reflux Disease):** Repeated micro-aspirations of stomach acid can damage lung tissue and contribute to scarring.
- IPF primarily affects individuals **over 50 years old**. Slightly more common in **men** than women.
- **Diagnostic Tools:**
  - **High-Resolution CT Scans:** Identify characteristic scarring patterns.
  - **Pulmonary Function Tests (PFTs):** Assess lung capacity and functionality.
  - **Lung Biopsy:** In some cases, it is used to confirm diagnosis.

### India in World Malaria Report 2024

#### News Excerpt

The **World Health Organization's (WHO) World Malaria Report 2024** highlights India's remarkable strides in combating malaria, particularly in its high-endemic states. The report marks a significant milestone for India as it officially exits the **High-Burden to High-Impact**

(HBHI) group, reflecting substantial progress in reducing malaria incidence and associated mortality.

**Key Achievements**

- **Reduction in Cases:**
  - Malaria cases in India have decreased from **6.4 million in 2017** to **2 million in 2023**, marking a **69% decline**.
- **Decline in Mortality:**
  - Malaria-related deaths reduced by **68%**, from **11,100 in 2017** to **3,500 in 2023**.
- **Exit from HBHI:**

India has moved out of WHO's HBHI group, which focuses on regions most severely affected by malaria.

**Strategies Behind the Progress**

**Community Health Workers**

- Women-led community health initiatives have been pivotal in reaching remote areas and ensuring access to prevention tools, diagnosis, and treatment.

**Government and International Efforts**

- Collaboration between the Indian government, international organizations, and community groups has driven malaria cases down significantly.

**Targeted Initiatives**

- WHO's HBHI strategy focused on high-burden states with tailored interventions.
- Improved distribution of **bed nets, antimalarial drugs, and diagnostic tools**.

**Global Context**

- **Malaria's Global Toll:**
  - Almost **1 in 10 children** worldwide dies from malaria annually.
  - The African continent accounts for **95% of global malaria deaths**.
- **Intersection with Inequality:**
  - The disease disproportionately affects the poorest and most marginalized, including women and girls who face barriers to accessing care.

**UK's Role:**

- UK-funded organizations, such as **Zero Malaria** and **Gavi, the Vaccine Alliance**, are pivotal in providing malaria-fighting tools globally.

**Looking Ahead: Malaria-Free India and Beyond**

- **2030 Goal:** The global goal is to achieve a malaria-free world by 2030.

<p>IPF has <b>no cure</b>, but timely intervention can slow its progression and improve quality of life.</p>	<p>Antifibrotic drugs like <b>pirfenidone</b> and <b>nintedanib</b> reduce the rate of scarring and disease progression.</p>
<p><b>Oxygen therapy</b> helps maintain adequate oxygen levels in the blood.</p>	<p><b>Lung exercises</b> enhance lung capacity and improve breathing.</p>
	<p><b>Lung transplant</b> is considered for patients with advanced disease stages.</p>

- **Upcoming Reports:** The **Commonwealth Malaria Report**, to be published in 2025, will further support malaria elimination strategies.
- **Continued Focus on Equity:** Stakeholders emphasize addressing socioeconomic and gender-related barriers to ensure equitable access to prevention and treatment.

**Conclusion**

- India's significant progress in reducing malaria showcases the impact of targeted health initiatives, community involvement, and international collaboration. As the world works towards eradicating malaria, India's success offers a model for other nations, particularly in addressing health inequities and reaching vulnerable populations.

**Revival of 1978 'Anti-Conversion' Law**

**News Excerpt**

The Arunachal Pradesh government is working to implement the **Arunachal Pradesh Freedom of Religion Act, 1978**, nearly five decades after its enactment. This move, marked by the finalisation of rules for the law's enforcement, has stirred debates about religious freedom, cultural preservation, and political influence.

**What is the Arunachal Pradesh Freedom of Religion Act?**

Enacted in 1978, the law prohibits religious conversions through:

1. **Force**
2. **Inducement**
3. **Fraudulent means**

**Key Provisions:**

- **Punishment:** **Up to 2 years of imprisonment** and/or a **fine of Rs 10,000**.
- **Mandatory Reporting:** All acts of conversion must be reported to the district's Deputy Commissioner.
- **Accountability:** Failing to report conversions can lead to penalties for those conducting them.

Despite its enactment, the Act remained **dormant** due to the absence of framed rules for its implementation.

**Why Was the Act Introduced?**

Arunachal Pradesh is home to numerous ethnic communities with diverse belief systems, including **Mahayana Buddhism, Theravada Buddhism**, and **polytheistic nature worship** like the **Donyi Polo faith**.

**Concerns Leading to the Law:**

- **Cultural Preservation:** Fear of erosion of indigenous traditions due to rising Christian conversions.
- **Socio-Cultural Changes:** Increased Christian missionary activities in the 1950s triggered debates on proselytisation and its impact on indigenous practices.

By 1981, the Christian population in Arunachal grew to **4.32%**, prompting legislators to call for legal protection of indigenous religions.

### Why Has the Act Remained Dormant?

- **Opposition from Christian Groups:**
  - The **Arunachal Christian Forum (ACF)**, formed in 1979, opposes the Act, calling it an “**anti-Christian law**” that could be misused.
  - By 2011, **30.26%** of Arunachal’s population identified as Christians, making it the state’s largest religious group.
- **Political Sensitivities:**
  - No Chief Minister has actively pushed for its implementation, fearing backlash from Christian communities.
  - Advocacy by groups like the **Rashtriya Swayamsevak Sangh (RSS)** for indigenous faiths has added complexity to the issue.

### Why Is the Act Being Revived Now?

- **Legal Push:**
  - In 2022, advocate **Tambo Tamin** filed a PIL in the Gauhati High Court to compel the government to frame rules for the Act.
  - The court directed the government to finalise the draft rules by **March 2025**.
- **Concerns About Conversion Rates:**
  - Groups like the **Indigenous Faiths and Cultural Society of Arunachal Pradesh (IFCSAP)** argue that the Act is critical to preserving indigenous traditions against rising conversions.
- **Political and Cultural Dynamics:**
  - The BJP government’s promotion of **indigenous faiths** and alignment with the RSS has brought the issue to the forefront.

### Implications of the Act’s Enforcement Supporters Argue:

- It is essential for **preserving cultural heritage** and protecting vulnerable indigenous communities from external influences.
- It ensures **accountability** and transparency in religious conversions.

### Critics Warn:

- The Act could be **misused** to target minority communities, particularly Christians.
- It raises concerns about **infringement on religious freedom**, guaranteed under Article 25 of the Constitution.

### Conclusion

- The potential enforcement of the **1978 anti-conversion law** in Arunachal Pradesh is a complex issue, intersecting with themes of cultural preservation, religious freedom, and political ideology.
- While it reflects concerns over preserving indigenous practices, it also raises questions about secularism and **individual rights in a diverse democracy**.
- As the **state finalises rules for its implementation**, balancing these competing interests will be crucial to maintaining harmony in **Arunachal’s multi-ethnic and multi-religious society**.

## CHARAK Initiative

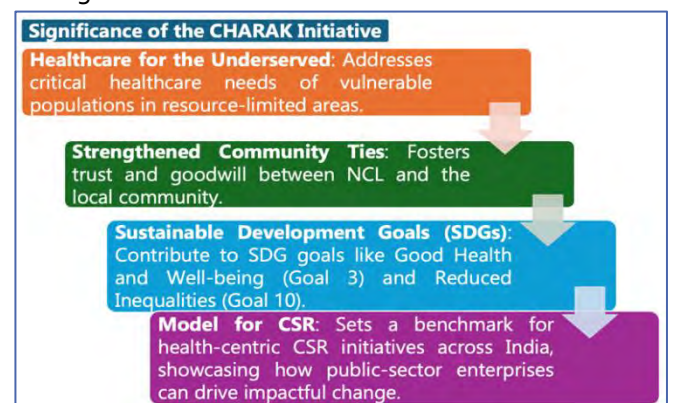
### News Excerpt

Under the guidance of the **Ministry of Coal**, Northern Coalfields Limited (NCL), a subsidiary of Coal India based in **Singrauli**, has launched the **CHARAK** initiative, a pioneering health-focused Corporate Social Responsibility (CSR) project.

### About the CHARAK Initiative

- **Full-Form:** Community Health - A Responsive Action for Koylanchal (CHARAK)
- **Objective:** To provide **free treatment** for Economically Weaker Sections (EWS) patients suffering from life-threatening diseases in the **Singrauli region**.
- **Key Features**
  - **Free Treatment Access:** Treatment will be offered at NCL’s dedicated hospital (NSC) or specialised empanelled hospitals across India.
  - **Eligibility Criteria:** Residents of Singrauli and Sonbhadra districts. Families with an annual income below ₹8 lakh from all sources.
  - **Diseases Covered:** Malignancy, Tuberculosis (TB), HIV-related complications, cardiovascular diseases, organ transplants, and neurological disorders.

**Other conditions include** acute surgical emergencies, serious accidents, burn injuries with disabilities, sudden vision or hearing loss, and connective tissue disorders, among others.



### About Corporate Social Responsibility (CSR)

- CSR is a **management concept** in which companies integrate **social and environmental concerns** into their business operations and interactions with their stakeholders.
- **Section 135 Companies Act, 2013** - CSR provisions apply to companies:
  - With an annual turnover of INR 1,000 crore and more
  - Or a net worth of INR 500 crore and more
  - Or a net profit of 5 crore INR and more
- The Act mandates companies to spend **at least 2%** of their **average net profit** in the **previous three years** on CSR activities.

## AGRICULTURE

### 10,000 MPACS Inaugurated

#### News Excerpt

Union Home Minister and Minister of Cooperation, **Shri Amit Shah**, inaugurated 10,000 newly established **Multipurpose Primary Agricultural Credit Societies (MPACS)**, along with Dairy and Fisheries Cooperative Societies, at a significant event held in New Delhi.



#### Key Highlights from the Inauguration

- Milestone Achievement:** The launch of 10,000 MPACS symbolizes a major step in fulfilling the Modi government's vision of "Sahkar Se Samridhi" (Prosperity through Cooperation). The initiative aligns with the target of creating **2 lakh new PACS** in the next five years.
- Technological Modernization of PACS:** All PACS are being **computerized**, enabling integration with **32 diverse activities**, including storage, fertilizer distribution, and water supply. Emphasis on **transparency and operational efficiency** through technology.
- Comprehensive Training Program:**
  - Launched a training module for PACS members and employees to enhance their skills.
  - Directed district cooperative registrars to ensure effective implementation of training initiatives.

#### Benefits and Objectives of MPACS Expansion

- Empowering Farmers:** Distribution of **RuPay Kisan Credit Cards** and **Micro-ATMs** to cooperative societies to facilitate financial inclusion and low-cost loans. Ensuring availability of essential agricultural inputs through PACS.
- Integrated Rural Development:** PACS will serve as hubs for **gas distribution, storage, and petrol distribution**, boosting their relevance and sustainability. Transformation of **Common Service Centres (CSCs)** into PACS to enhance service delivery at the grassroots.
- Enhancing Economic Equity:** Adoption of new model bylaws to ensure participation of **women, Dalits, backward communities, and tribals**, fostering social harmony.
- Global Market Integration:** Establishment of **new national-level cooperatives (NCOL, BBSSL, NCEL)** to promote **organic products, quality seeds**, and facilitate exports.

#### Phased Approach for PACS Expansion

- NABARD:**
  - Establish 22,750 PACS in the first phase and 47,250 in the second phase.
- NDDB:**
  - Form 56,500 new societies and strengthen 46,500 existing ones.
- NFDB:**
  - Create 6,000 new fisheries cooperative societies and empower 5,500 existing ones.
- State Cooperative Departments:**
  - Contribute to the formation of 25,000 PACS.

To date, **11,695 new primary cooperative societies** have been registered, marking significant progress towards achieving the ambitious target of 2 lakh PACS.

#### Long-Term Vision

- The minister stressed the transformative potential of this initiative for **rural economic growth, employment generation, and social empowerment**.
- The **integration of advanced technology and cooperative principles** ensures a sustainable framework for boosting farmer incomes and enhancing India's global agricultural footprint.
- The event marks a historic milestone in the government's efforts to revitalize the **cooperative sector** as a key driver of **inclusive rural development**.

### Implementation of the Land Acquisition Act

#### News Excerpt

Farmers protesting at the Khanauri and Shambhu borders in Punjab demand the proper implementation of the **Land Acquisition Act, 2013**, citing fair compensation, consent, and rehabilitation as key issues. Here's an explanation of their demands and the challenges surrounding the Act.

#### About the Land Acquisition Act, 2013

The **Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation, and Resettlement Act, 2013** replaced the outdated Land Acquisition Act of 1894.

- Objective:** Ensure fair compensation, transparency, and resettlement for affected families.
- Came into Force:** 1 January 2014.

#### Key Features of the Act

- Fair Compensation:** Compensation is twice the market value in urban areas and four times in rural areas.
- Consent Requirements:** 70% consent for Public-Private Partnership (PPP) projects.

#### 80% consent for private companies.

- Protection for Fertile Land:** Restrictions on acquiring irrigated multi-cropped land beyond state-specified limits.
- Social Impact Assessment (SIA):** Evaluates social, environmental, and economic impacts of land acquisition.
- Rehabilitation and Resettlement (R&R):** Includes housing for displaced families, financial aid, livelihood assistance, and development of infrastructure in resettlement areas.
- Safeguards Against Misuse:** Defines "public purpose" narrowly to prevent arbitrary acquisitions.
- Land must be returned if unused within five years.

## Why Farmers Are Demanding Its Implementation

Farmers argue that the Act is not being implemented in its true spirit, with both central and state governments deviating from its original provisions.

- **Non-Compliance:**  
Instances of unfair compensation, such as in Noida, where farmers were arrested for protesting against the lack of adequate payment for land acquired for infrastructure projects.
- **State Amendments:**  
Some states have diluted key provisions, such as removing the **consent clause** for certain categories, including PPP projects, leading to forced acquisitions.
- **Empowerment Through Consent Clause:**  
Farmers emphasize the importance of the consent clause, which ensures they have a say in land acquisitions, safeguarding their primary source of income and identity.
- **Economic and Social Security:**  
The Act's fair compensation and rehabilitation provisions provide financial security, livelihood assistance, and infrastructure support for displaced families.

## Challenges in Implementation

- **Delays in Acquisition:** Procedural requirements, like conducting SIAs and obtaining consent, slow down development projects.
- **High Compensation Costs:** Paying compensation at four times the market value can strain budgets of both public and private entities.
- **Balancing Development and Justice:** While the Act protects farmers' rights, it can complicate efforts to acquire land for essential infrastructure and industrial development.

## Conclusion

Farmers view the **Land Acquisition Act, 2013** as a progressive law that safeguards their rights and dignity, ensuring just treatment in the acquisition process.

They demand its full implementation to prevent misuse, provide fair compensation, and uphold their livelihoods, even as the government faces challenges in balancing development needs with social justice.

## Barley for Punjab's Farmers

### News Excerpt

Punjab's **wheat-paddy monoculture** has strained the region's **water resources** and impacted soil health. Scientists are recommending barley as an alternative due to its **lower water requirements**, health benefits, and reduced input costs.

### Advantages of Growing Barley

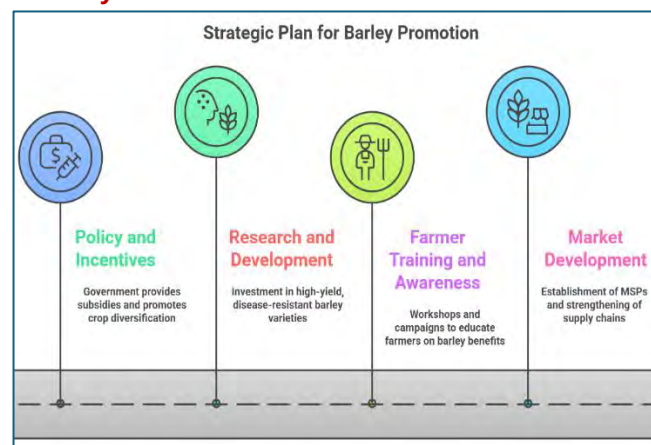
- **Low Water Consumption and Input Costs**
  - **Water Efficiency:** Barley consumes significantly less water compared to paddy and wheat, making it suitable for Punjab, where groundwater levels are depleting rapidly.
  - **Lower Seed Requirement:** Barley requires only 35 kg of seeds per acre compared to 40 kg for wheat.
  - **Reduced Fertilizer Use:** Barley needs 55 kg of urea and 25 kg of DAP per acre, almost half of what wheat requires (110 kg urea and 55 kg DAP).
- **Nutritional Superiority**

- **Low Gluten Content:** Barley contains less gluten than wheat, reducing risks of gluten-related health issues such as leaky gut syndrome and kidney damage.
- **Rich in Nutrients:**
  - Beta-glucan (5-10%) aids in managing diabetes, cholesterol, and obesity.
  - Contains phytochemicals, resistant starch, lignin, ferulic acid, phytosterols, and antioxidants, offering broader health benefits.
  - High in insoluble fiber, vitamins, and protein.
- **Health Benefits**
  - **Diabetes Management:**
    - Barley's low glycemic index (28) helps regulate blood sugar levels.
    - Beta-glucan enhances insulin efficiency and stimulates glucose-regulating hormones.
  - **Gut and Liver Health:**
    - Indigestible fibers strengthen gut microbiota and promote short-chain fatty acid (SCFA) formation, which reduces cholesterol production and supports liver function.
  - **Obesity and Cholesterol:**
    - Barley reduces hunger pangs and slows cholesterol synthesis in the liver, lowering the risk of heart diseases.

## Challenges in Promoting Barley Farming

- **Research and Awareness Gaps**
  - More studies are needed to establish barley as a "superfood" and promote its health benefits.
  - Farmers need educational campaigns to understand the advantages of barley cultivation.
- **Agricultural Transition Costs**
  - **Infrastructure Investment:**
    - Punjab has heavily invested in harvesting machinery for wheat and paddy. Adapting to barley may require new machinery and financial support.
- **Market and Policy Support:**
  - Barley markets are less developed compared to wheat and paddy. Establishing robust procurement systems and minimum support prices (MSPs) is essential.
- **Crop Cycle Alignment**
  - Barley is a rabi (winter) crop and can only replace wheat, not paddy. This limits its potential to directly address the water-intensive paddy cultivation issue.

## The Way Forward



**Conclusion**

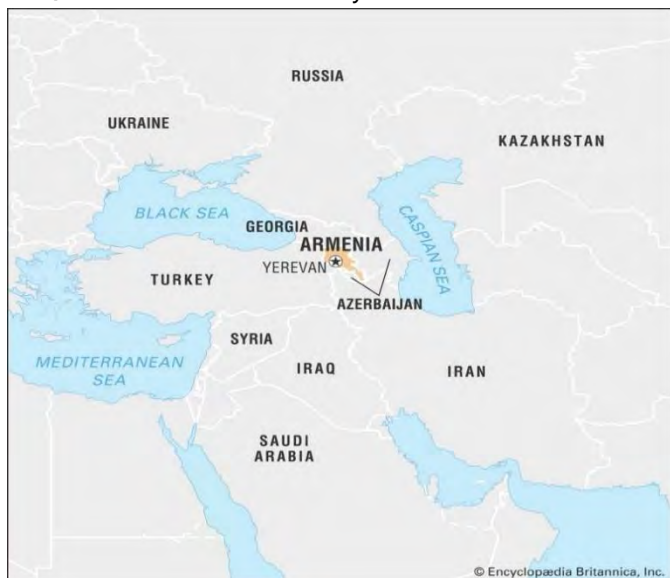
- Barley offers a viable alternative to wheat in Punjab’s agricultural landscape. With its **low water and input requirements**, combined with significant health benefits, barley can contribute to sustainable farming and public health.
- However, **overcoming logistical, infrastructural, and market challenges** will require a coordinated effort by policymakers, researchers, and farmers.

**INTERNATIONAL RELATIONS**

**India, Iran, and Armenia Hold 2nd Trilateral Consultations**

**News Excerpt**

The second round of trilateral consultations between **India, Iran, and Armenia** was recently held.



**Key Highlights of the Meeting**

- **Multilateral Engagement:** The three nations discussed their collective role in **multilateral forums**, seeking to strengthen their global presence and influence.
- **Regional Developments:** The consultations addressed regional security and developments, with a shared objective of promoting peace and stability in the region.
- **Trade, Tourism, and Cultural Exchanges:** Efforts to expand trade, tourism, and cultural exchanges were discussed, with an emphasis on building stronger people-to-people ties.
- **Connectivity Initiatives:** Emphasis was placed on enhancing collaboration under the **International North-South Transport Corridor (INSTC)** to bolster trade and connectivity. The critical role of **Chabahar Port**, a strategic infrastructure project, in supporting the INSTC and fostering regional trade was underscored.
- **Armenia’s Connectivity Initiative: “The Crossroads of Peace”:** Armenia presented its ambitious proposal, “The Crossroads of Peace,” which aims to develop a robust regional transport network. Key details include:

- Establishing efficient transport links to connect the **Caspian Sea with the Mediterranean Sea** and the **Persian Gulf with the Black Sea**.
- Revitalising infrastructure such as **roads, railways, pipelines, communication cables, and electricity grids** to facilitate the seamless movement of goods, energy, and people.
- Enhancing Armenia’s connectivity with its neighbours, including **Turkey, Azerbaijan, Iran, and Georgia**, to foster regional economic integration.
- **Commitment to Future Consultations:** It was agreed that the third round of trilateral consultations would be hosted by **Iran** at a mutually convenient time.

**About INSTC and Chabahar Port**



- **INSTC:** A **7,200-km-long multi-modal** transportation network to facilitate freight movement among **India, Iran, Afghanistan, Armenia, Azerbaijan, Russia, Central Asia, and Europe**.
  - The project **aims** to enhance trade efficiency and reduce transit time and costs, connecting major markets across continents.
- **Chabahar Port:** Situated in Iran’s **Sistan-Balochistan province** on the southern coast, this strategic port is being developed by India and Iran.
  - India is leveraging the port to boost its connectivity and trade with Central Asia and **Afghanistan** while bypassing traditional routes via Pakistan.

**Significance of the Meeting**

**Strengthened Partnerships:** Demonstrates commitment to fostering trade, connectivity, and cultural cooperation.

**Regional Stability:** Focused on promoting peace and sustained regional growth by addressing key issues.

**Multilateral Influence:** Aims to enhance collective global influence through coordinated efforts.

**Enhanced Connectivity:** Highlights the importance of INSTC, Chabahar Port, and Armenia’s “Crossroads of Peace” in bolstering economic and cultural ties across the region.

## The Order of Mubarak Al-Kabeer

### News Excerpt

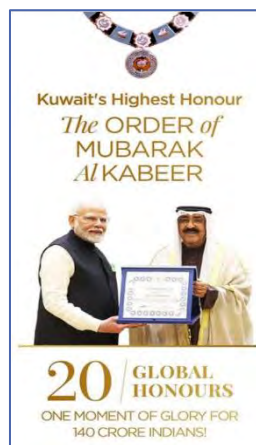
Prime Minister Narendra Modi received the **Order of Mubarak Al-Kabeer**, Kuwait's highest civilian honor, on December 22, 2024. The award was conferred by Sheikh Meshal Al-Ahmad Al-Jaber Al-Sabah, the Amir of Kuwait, recognizing PM Modi's contributions to strengthening bilateral ties between India and Kuwait.

### About the Order of Mubarak Al-Kabeer

- **Nature and Purpose:** The **Order of Mubarak Al-Kabeer** is a prestigious honor awarded by the Kuwaiti government to **Heads of State**, sovereigns, and members of foreign royal families. It symbolizes goodwill and friendship between nations.
- **Notable Past Recipients:** Recipients include international dignitaries such as:
  - **Queen Elizabeth II** of the UK
  - Former US Presidents **George H.W. Bush** and **Bill Clinton**
  - **King Salman** of Saudi Arabia
  - Former French President **Nicolas Sarkozy**
- **Historical Context:**
  - Instituted in **1974** to honor **Mubarak Al Sabah**, known as **Mubarak the Great**, the ruler of Kuwait from 1896 to 1915.
  - Mubarak Al Sabah's rule marked a turning point for Kuwait, as he secured greater autonomy from the Ottoman Empire and signed a treaty with Britain in 1899 to protect Kuwait, establishing it as a British protectorate.
- **Redesign:** The award's design was updated in **1992**, after Kuwait's liberation from Iraq in 1991, reflecting a new era of Kuwaiti sovereignty and pride.

### Significance of the Award for PM Modi

- **Symbol of Bilateral Friendship:** PM Modi dedicated the honor to the **India-Kuwait friendship**, the **Indian community in Kuwait**, and India's 1.4 billion people. The award underscores Kuwait's appreciation for India's role in fostering stronger bilateral relations.
- **Historic Visit:**
  - PM Modi's visit was the **first by an Indian Prime Minister to Kuwait in 43 years**, the last being by Indira Gandhi in 1981.
  - The visit is a milestone in strengthening diplomatic, economic, and cultural ties.



### India-Kuwait Relations

- **Economic Partnership:**
  - Kuwait is among India's **top trading partners**, with bilateral trade amounting to **\$10.47 billion** in 2023-24.
  - Kuwait is India's **sixth-largest crude oil supplier**, meeting **3% of India's energy needs**.
- **Investment Links:**
  - The **Kuwait Investment Authority (KIA)** has investments exceeding **\$10 billion** in India.
  - Indian exports to Kuwait crossed **\$2 billion** for the first time in 2023-24.
- **Historical Ties:**
  - India and Kuwait share deep-rooted ties dating back to the pre-oil era when **maritime trade** with India was a vital part of Kuwait's economy.
  - The **Indian rupee** was legal tender in Kuwait until **1961**, highlighting the longstanding economic and cultural connections.

## Chennai-Vladivostok Sea Route (aka Eastern Maritime Corridor - EMC)

### News Excerpt

The launch of the **Eastern Maritime Corridor (EMC)** between **Chennai** (India) and **Vladivostok** (Russia) has transformed India-Russia trade.

### About Eastern Maritime Corridor (EMC)

- It was envisioned during the **Eastern Economic Forum** (2019) in Vladivostok, Russia.
- It is a **sea route** connecting **Chennai Port** (India) with **Vladivostok Port** (Russia) through the **Sea of Japan**, the **South China Sea**, and **Malacca Strait**.
- It covers a distance of around **10,300 km**.



### Other Significant Maritime Corridors

- **International North-South Transport Corridor (INSTC):** A **7,200-km** multimodal transport route linking **India, Iran, and Russia to Europe** via the Caspian Sea.



### Significance of the Eastern Maritime Corridor (EMC)

**Strategic Importance:** Strengthens India's presence in the South China Sea, counters China's dominance, and integrates with global initiatives like the NSR and INSTC.

**Boost to Maritime Sector:** Aligns with Maritime Vision 2030 to enhance trade efficiency, infrastructure, and multimodal transport systems.

**Reduced Costs and Transit Time:** Shortens shipping distance from 8,675 to 5,600 nautical miles, reducing transit time from 40+ days to 24 days, vital for India's 85% crude oil imports and Russian oil trade.

**Trade Diversification:** Expands bilateral trade to include coal, LNG, fertilizers, and metals, deepening economic ties.

**Support for Act Far East Policy:** Enhances connectivity with East Asia, ASEAN, and Russia, boosting access to resources, infrastructure, cultural exchanges, and tourism.

- It has **three routes** - **Central Corridor** (via Iran), **Western Corridor** (via Azerbaijan), and **Eastern Corridor** (via Central Asia).
- **India-Middle East-Europe Economic Corridor (IMEC): Announced at the G20 Summit (2023)**, it aims to link **India, the Middle East, and Europe** through rail, road, and ship-to-rail links.
  - Its key components are - **East Corridor** (Connects India to the Arabian Gulf) and **Northern Corridor** (Links the Gulf to Europe). **The corridors will include:**
    - A shipping route connecting **Mumbai and Mundra (Gujarat) to the UAE**.
    - A rail network connecting the **UAE, Saudi Arabia, and Jordan** with the **Israeli port of Haifa**, leading to the **Mediterranean Sea**.
    - A sea route from **Haifa to Piraeus (Greece)** and onward to Europe.
  - It consists of electricity cables, hydrogen pipelines, and high-speed data networks.
- **Northern Sea Route (NSR):** This **5,600-km** Arctic route links the **Barents and Kara Seas** to the Bering Strait, providing **50% shorter transit times** than the Suez Canal. It offers strategic advantages for Arctic shipping and polar navigation.

## "Toughest" Strategy Against the US

### News Excerpt

**North Korea** has announced plans to implement its "**toughest**" strategy against the United States, as revealed during a key policy-setting meeting of the ruling **Workers' Party of Korea (WPK)** held from **23-27 December 2024**. This meeting, chaired by leader Kim Jong Un, focused on countering perceived threats from the US and its allies while emphasizing advancements in **defense, science, and international diplomacy**.

### Key Outcomes of the Meeting

- **Tough Stance Against the US and Allies:**

- North Korea accused the US, South Korea, and Japan of forming a "nuclear military bloc."
- Labelled South Korea as an "anti-communist outpost" for US interests.
- Committed to advancing strategies to safeguard national security and sovereignty.
- **Defense and Technology Focus:**
  - Called for progress in defense science and technological development.
  - Stressed the importance of enhancing war deterrence capabilities.
- **Domestic and International Commitments:**
  - Reviewed flood relief efforts, including relocation initiatives for affected citizens to Pyongyang.
  - Vowed to strengthen ties with "friendly" nations.
- **Leadership Reshuffle:**
  - **Pak Thae Song** appointed as the new premier, replacing Kim Tok Hun.
  - **Choe Son Hui**, the Foreign Minister, was elevated to the Politburo of the Central Committee.

### Regional and Global Implications

- **US-South Korea-Japan Alliance:**
  - North Korea perceives the alliance's military activities and nuclear posturing as a direct threat.
  - Pyongyang's response aligns with its long-standing hostility toward the US-led regional bloc.
- **Military Cooperation with Russia:**
  - Strengthened ties with Russia following a summit between Kim Jong Un and Vladimir Putin earlier this year.
  - Allegations of North Korean troops aiding Russia in its conflict with Ukraine have drawn criticism from the US and South Korea.
- **Bolstered Diplomatic Relations:**
  - Kim Jong Un emphasized promoting relations with nations sympathetic to North Korea's stance, likely targeting countries opposed to US hegemony.

### Conclusion

- **North Korea's reaffirmation** of its aggressive strategy reflects its desire to counterbalance growing regional and international pressure.
- The emphasis on defense innovation and strategic alliances signals its intent to maintain its position as a key player in East Asian geopolitics while challenging US-led coalitions.

## Trinidad and Tobago has declared an emergency

### News Excerpt

Trinidad and Tobago declared a **state of emergency** in response to an alarming surge in violence, particularly gang-related killings. The decision underscores the country's

ongoing struggle with escalating crime, exacerbated by the proliferation of high-calibre firearms.

### Key Events Leading to the Emergency

- **Recent Violence:**
  - **67 people killed in December 2024**, making it one of the deadliest months in the nation's history.
  - **Notable incidents:**
    - Attempted assassination of a gang leader outside a police station on **28 December**.
    - Five retaliatory killings on **29 December**.
    - A total of **15 gun-related deaths** reported over three days in the last week of December.
- **Annual Murder Rate:**
  - **623 murders in 2024**, the highest since 2013, in a country of just 1.5 million people.
  - Trinidad and Tobago already ranks among the Caribbean's most violent nations, alongside **Jamaica and Haiti**.

### Why Was the Emergency Declared?

- **Public Safety Concerns:** Acting Attorney-General Stuart Young highlighted the use of **high-velocity assault weapons** in escalating gang reprisals, creating a scale of violence that endangered public safety.
- **Firearms Proliferation:**
  - Over **75% of illegal firearms** in Trinidad and Tobago are traced back to the **United States**, according to the US Government Accountability Office.
  - Between **2018 and 2022**, more than **7,000 firearms** were recovered, reflecting the growing arms trade in the region.

### Emergency Powers Granted

- **Expanded Police Authority:**
  - Law enforcement can **search people and premises without warrants**.
  - Individuals can be detained for **48 hours without charge** under the emergency regulations.
- **Involvement of Defence Forces:**
  - Defence personnel are empowered to act as police during the emergency period.
- **Judicial Oversight:**
  - A **tribunal** is being formed in collaboration with the judiciary to oversee detentions and ensure compliance with legal standards.
- **Parliamentary Review:**
  - Parliament will convene within **15 days** to determine whether the emergency should be extended.

### Impact on Daily Life

- No **curfews** or restrictions on **public gatherings** have been imposed.
- Celebrations such as **New Year's fireworks** and Trinidad's famed **Carnival** (scheduled for 30–31 December) remain unaffected.

### Historical Context

- **2014 Emergency:** Declared due to a similar wave of violence.
- **2011 Limited Emergency:** Focused on drug-related crime spikes.
- **2021 Emergency:** Enacted to enforce COVID-19 restrictions.

### What's at Stake?

- **Regional Stability:**
  - Trinidad and Tobago's violence mirrors broader issues in the Caribbean, where murder rates are **three times the global average**.
- **International Attention:**
  - The surge in gang-related violence and illicit arms trade underscores the need for international collaboration to curb firearms trafficking.
- **Carnival:**
  - The state of emergency's continuation into **Carnival season** could impact this globally renowned cultural event, a critical economic and tourism driver for the country.

## Russian gas exports to Europe halted

### News Excerpt

The halting of Russian natural gas exports to Europe via Ukraine on 1 January 2025, marks a significant turning point in Europe's energy landscape and the fallout from the ongoing conflict between Moscow and Kyiv.

Figure 1: Ukrainian gas transit



### Key Points of the Halt

- **End of Transit Deal:**
  - The five-year gas transit agreement between Russia and Ukraine expired on 1 January 2025.
  - Ukraine refused to extend the deal, citing national security concerns amidst the war.
- **Impact on Gas Transit:**
  - Ukraine's pipelines accounted for half of Russia's total gas exports to Europe.

- The stoppage comes amid Europe's broader efforts to reduce reliance on Russian energy following the military conflict in Ukraine.
- **Statements from Stakeholders:**
  - **Ukraine's Energy Minister, German Galushchenko:** Called the halt a "historic event" and emphasized Russia's loss of market share.
  - **Gazprom:** Stated it lacked technical and legal means to continue transit due to Ukraine's refusal to renew agreements.

#### Broader Impacts

- **Financial Losses:**
  - Ukraine faces an estimated \$800 million annual loss in transit fees.
  - Gazprom could lose approximately \$5 billion in annual gas sales.
- **Europe's Transition:**
  - Europe's gas market has shifted since 2022, with efforts to diversify energy sources.
  - Alternative pipelines like **TurkStream** remain operational, supplying Turkey, Hungary, and Serbia.
- **Affected Regions:**
  - **Moldova**, heavily reliant on Russian gas, may cut its usage by one-third.
  - Countries like Slovakia and Austria have secured alternative supplies.
- **Strategic Setback for Russia:**
  - Russia's dominance in the European gas market has dwindled from a peak of 35% to significantly lower levels post-2022.
  - Other pipelines, such as **Yamal-Europe** and **Nord Stream**, are no longer operational, further isolating Russian energy exports.

#### Historical Context

- At its height, Russian gas exports to Europe reached a record 201 billion cubic meters (bcm) in 2018.
- By 2023, volumes through Ukraine had dropped to 15 bcm, down from 65 bcm in 2020 when the previous transit deal began.

#### Future Outlook

- **Energy Independence:**
  - The halt underscores Europe's determination to reduce dependency on Russian energy, accelerating transitions to renewable and alternative sources.
- **Geopolitical Ramifications:**
  - The shutdown exacerbates tensions between Russia and Ukraine, with economic and strategic losses on both sides.
- **Regional Energy Security:**
  - Countries like Moldova face immediate challenges, while others in Central Europe may adapt better due to diversified supply lines.

## Indonesia Becomes Full Member of BRICS

### News Excerpt

Indonesia has officially joined **BRICS**, marking a significant milestone for the global coalition of major emerging economies. The group, which now comprises **Brazil, Russia, India, China, South Africa, Egypt, Ethiopia, Iran, UAE, and Indonesia**, represents a growing force in international diplomacy and economic cooperation.

### Key Developments

- **Membership Announcement:**
  - Brazil's government confirmed Indonesia's full membership on Monday.
  - Indonesia finalized its membership following its **2024 presidential election**, which brought **President Prabowo Subianto** into office in October.
- **Strategic Importance:**
  - Indonesia, the **world's fourth most populous country**, has sought BRICS membership to strengthen alliances within the **Global South** and reform global governance institutions.
  - The Indonesian Foreign Ministry described the move as a "strategic way to enhance collaboration and partnerships with other developing nations."
- **BRICS Expansion:**
  - Indonesia's entry follows a trend of expanding BRICS membership. Other new members include **Egypt, Ethiopia, Iran, and the UAE**, reflecting the bloc's growing geopolitical influence.
- **Consensus Decision:**
  - Indonesia's membership was unanimously approved during the **2023 BRICS Summit** in Johannesburg. However, the country opted to finalize its inclusion after its national elections.
- **Brazil's Role:**
  - Brazil, set to hold the BRICS presidency in 2025, emphasized the bloc's collective commitment to reforming global institutions and strengthening cooperation among emerging economies.

### Significance of Indonesia's Membership

- **Economic Clout:**
  - Indonesia's inclusion enhances BRICS' representation in Southeast Asia, adding a key player with a robust economy and significant trade networks.
- **Global Governance Reform:**
  - Like other BRICS nations, Indonesia advocates for reforming institutions such as the **United Nations** and **IMF**, ensuring greater representation for developing countries.
- **Strengthening the Global South:**
  - Indonesia's membership reinforces BRICS' role as a platform for promoting the interests of the **Global South** in global economic and political forums.

- **BRICS Influence:**

- With Indonesia on board, BRICS now represents a larger share of the global population and economic output, bolstering its negotiating power in international affairs.

### Looking Ahead

- **Indonesia's BRICS membership** is expected to deepen its engagement with other emerging economies, facilitating trade, investment, and policy alignment on global issues.
- **As BRICS continues to expand**, its role in shaping the global order and championing the interests of the **Global South** is likely to grow.

## Counterattacks in Russia's Kursk Region

### News Excerpt

Ukraine has intensified its military operations in Russia's **Kursk region**, marking a significant escalation in the ongoing conflict. Ukrainian officials have described the operation as a **counterattack**, targeting Russian positions in a strategically vital area close to the border.

### Key Events and Statements

- **Ukrainian Counteroffensive:**
  - Ukrainian forces launched **surprise attacks** on Russian positions in Kursk.
  - Andrii Kovalenko, head of Ukraine's Center for Countering Disinformation, confirmed the operation, describing it as a response to Russia's actions.
  - Andriy Yermak, head of Ukraine's Presidential Office, referred to the operation as a measure of justice, stating, "Russia is getting what it deserves."
- **Russian Response:**
  - Russia's **Defense Ministry** claimed it repelled Ukrainian assaults near **Berdin village**, involving tanks and armored vehicles.
  - Russian military blogs reported **active hostilities** in the **Sudzha district**, with Ukrainian forces using mobile groups and advanced electronic warfare systems.
  - Artillery, tanks, and airpower have been deployed by Russian forces to counter the offensive.
- **Fighting Details:**
  - Reports indicate **small arms battles** and **drone swarms** targeting Russian positions.
  - Ukraine continues to hold much of the territory it took in its **August incursion** despite Russian and allied reinforcements, including **North Korean troops**.
- **Humanitarian Concerns:**
  - Russian bombardments have intensified in areas like **Sudzha town**, where Ukrainian forces are entrenched.

- Over **2,000 civilians** remain trapped, with **39 reported deaths** and more than **100 injuries** due to airstrikes and artillery.

### Strategic and Political Implications

- **Territorial Stakes:**
  - Kursk is a critical region due to its proximity to the Ukraine-Russia border, and its control has strategic value for both sides.
- **Role of North Korean Troops:**
  - Reports suggest that **11,000 North Korean soldiers** have been deployed to aid Russian forces, signaling growing international involvement in the conflict.
- **Military Tactics:**
  - Ukraine's use of electronic warfare systems has disrupted Russian drone operations, while its mobile units aim to exploit weaknesses in Russian defenses.
- **Civilian Impact:**
  - Civilians trapped in conflict zones face worsening humanitarian conditions as bombardments escalate.

### Conclusion

- The counteroffensive in the Kursk region underscores Ukraine's determination to expand its operations beyond its borders, directly challenging Russian territorial security.
- Both sides are leveraging advanced military strategies, but the involvement of international forces like **North Korean troops** and the ongoing civilian toll add layers of complexity to the conflict.

## Russia Declares Emergency in Crimea

### News Excerpt

Russia has declared a **regional state of emergency** in **Crimea**, following a catastrophic oil spill in the **Black Sea** last month that has wreaked havoc on the local environment. The spill, caused by the storm-induced damage to two aging tankers, has led to the contamination of beaches and marine life.

### Incident Overview

- **Date of Spill:** December 15, 2024
- **Cause:**
  - A storm damaged two tankers transporting **heavy M100-grade fuel oil**.
  - One tanker sank, while the other ran aground in the **Kerch Strait**, a critical waterway connecting the Black Sea and the Sea of Azov.
- **Extent of Damage:**
  - Approximately **2,400 metric tons** of oil products were spilled into the sea.
  - **Heavy M100-grade fuel oil**, known for sinking or remaining suspended in water, complicates cleanup efforts.

## Impact

- **Environmental Damage:**
  - The spill has affected marine life, with reports of **dead dolphins, porpoises, and seabirds**.
  - Contamination of beaches and coastal areas, including the summer resort town of **Anapa**.
- **Cleanup Operations:**
  - Over **86,000 metric tons** of contaminated sand and soil have been removed.
  - **10,000 workers** are engaged in cleanup efforts, using shovels and diggers to remove oil-tainted sand.
  - The use of protective suits and manual cleanup highlights the severity of the contamination.

## Declared State of Emergency

- **Sevastopol Governor Mikhail Razvozhayev** announced the emergency to expedite decision-making, including potential evacuations.
- The Russian Emergencies Ministry has coordinated extensive cleanup operations in **Crimea** and the **Kuban region**.

## Concerns Over Aging Tankers

- The tankers involved were over **50 years old**, raising concerns about the safety and maintenance of such vessels.

## Global and Regional Context

- Crimea, annexed by Russia in **2014**, remains internationally disputed, with most nations not recognizing Russian control.
- The spill has drawn criticism from environmental groups over its **long-term ecological impact** and the risk posed by outdated infrastructure.

## Key Challenges

- **Environmental Recovery:** The properties of M100-grade oil make it difficult to clean, as it solidifies and sinks rather than floating on the surface.
- **Marine Life Impact:** The spill has likely disrupted marine ecosystems, with significant loss of marine species.
- **Infrastructure Safety:** The incident underscores the dangers posed by aging oil transport infrastructure in environmentally sensitive regions.

## US imposes sanctions on entities in Iran, Russia

### News Excerpt

The **United States** has imposed sanctions on entities in **Iran** and **Russia** accused of **interfering in the 2024 US elections**, reflecting ongoing concerns about foreign meddling in the **country's democratic processes**.

### Key Details of the Sanctions

- **Entities Targeted:**

- **Cognitive Design Production Center (Iran):** Allegedly planned influence operations since 2023, linked to Iran's **Revolutionary Guards Corps**.
- **Center for Geopolitical Expertise (CGE) (Russia):**
  - Affiliated with Russia's **military intelligence agency (GRU)**.
  - Circulated disinformation about candidates and created **deepfakes**.
  - Manipulated a video with "baseless accusations" targeting a 2024 vice-presidential candidate.
- **Objective of the Campaigns:**
- **Iran and Russia** sought to:
  - Stoke socio-political tensions within the US.
  - Influence voter perceptions and behavior.
  - Undermine trust in the election process.
- **US Treasury's Response:**
  - The sanctions are part of broader efforts to address election interference.
  - **Bradley Smith**, Acting Under Secretary for Terrorism and Financial Intelligence, emphasized vigilance against attempts to undermine US democracy.

## Context of the 2024 Election

- **Election Outcome:** Republican **Donald Trump** defeated Democratic candidate **Kamala Harris**, securing his return to the presidency after being voted out in 2020.
- **Targeted Disinformation:** Russia's CGE reportedly disseminated manipulated content, including a deepfake video with accusations against a vice-presidential candidate, though the Treasury did not disclose which candidate was targeted.

## Broader Implications

- **US-Iran and US-Russia Relations:**
  - The sanctions are likely to further strain relations with Iran and Russia, both of whom have been accused of election interference in past cycles.
- **Election Security Concerns:**
  - This marks another instance of foreign powers attempting to influence US elections, highlighting the need for stronger safeguards against disinformation and cyber operations.
- **Global Dynamics of Disinformation:**
  - The use of **deepfakes** and sophisticated influence operations underscores the evolving nature of election interference tactics.
  - The **sanctions aim to send a clear message** that the **US will not tolerate foreign meddling in its democratic processes**, reinforcing its commitment to safeguarding election integrity.

## ENVIRONMENT

### Green Energy Open Access Rules 2022

#### News Excerpt:

The Karnataka High Court has invalidated key green energy regulations, including the **Electricity (Promoting Renewable Energy Through Green Energy Open Access) Rules, 2022**, asserting that the **Central Government lacked the authority** under the Electricity Act to frame such rules. The judgment, also struck down related state-level regulations.

#### Key Details

- **Central and State Rules Overturned:**
  - The court invalidated the **Green Energy Open Access Rules, 2022** framed by the Central Government.
  - It also struck down the **Karnataka Regulatory Commission (Terms and Conditions for Green Energy Open Access) Regulations, 2022**, which were based on the central rules.
- **Reasoning:**
  - The **Electricity Act** confers exclusive authority over **transmission, determination, and open access** to the relevant **State Commission**, not the Centre.
  - Justice Gowda cited the Supreme Court's judgment in **Naresh Chandra Agarwal**, stating that rule-making bodies must operate within the powers explicitly granted to them.
  - Reliance on **residuary powers** by the Centre to justify its rule-making was deemed inappropriate, as the Act specifically assigns open-access powers to the **State Commission**.
- **Petitioners' Argument:**
  - Several hydropower companies challenged the rules, arguing that the Central Government overstepped its jurisdiction under the Electricity Act.
  - The state regulations, being aligned with the central rules, were also challenged as lacking independent authority.
- **Court's Observations:**
  - The Electricity Act limits the Central Government's role in administering open access.
  - Open-access regulation is a substantive provision exclusively reserved for the **State Commissions**.
  - Rules framed by the Centre usurped the State's authority, violating the legislative framework established by the Act.

#### Implications

- **For State Commissions:**
  - The judgment reinforces the autonomy of **State Commissions** in regulating electricity matters within their jurisdiction, including green energy access.

- **For Renewable Energy Sector:**

- The ruling may delay the implementation of streamlined open-access mechanisms for renewable energy developers and consumers, potentially affecting investment and operational timelines.

- **For the Central Government:**

- The judgment limits the Centre's ability to enforce uniform regulations across states under its residuary powers, emphasizing a decentralized approach as per the Electricity Act.

#### Conclusion

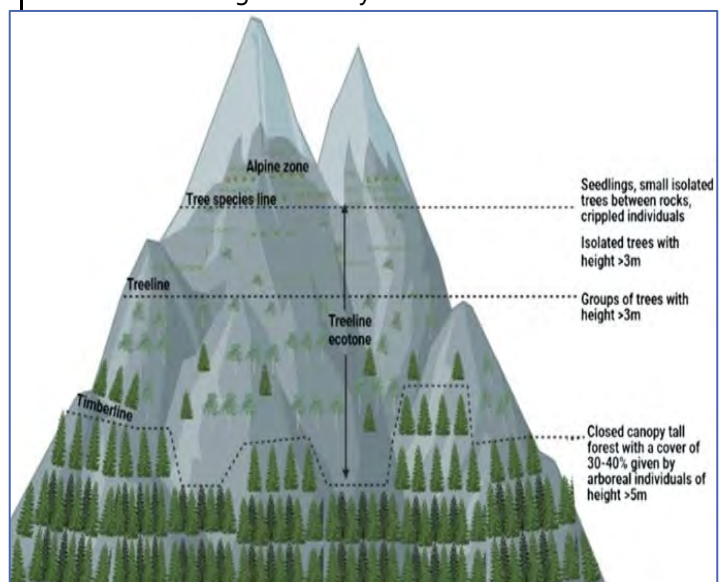
The Karnataka High Court's decision underscores the **federal structure** of governance under the Electricity Act, reaffirming that powers related to **open access** and **green energy regulation** lie with the **State Commissions**.

While this judgment upholds state autonomy, it may necessitate a re-evaluation of national policies aimed at promoting renewable energy, ensuring they align with the legislative boundaries set by the Act.

### Transformation of Himalayan Tree Lines

#### News Excerpt

New research reveals that climate change is driving a significant transformation in the **tree line landscape of the central Himalayas**, with **drought-resistant fir trees (*Abies spectabilis*)** replacing the historically dominant **Himalayan birch (*Betula utilis*)**. This ecological shift, detailed in a study published in *Nature Plants*, is poised to have profound effects on the region's ecosystems.



#### Key Findings:

- **Tree Line Dynamics:**
  - **Fir trees**, traditionally found at lower altitudes, are now climbing higher, at an average rate of **11 cm per year**.

- **Birch trees**, though also moving upslope, lag behind at **6 cm per year**.
- The faster migration of fir trees suggests they may outcompete birch trees, eventually becoming the dominant species.
- **Climate Impacts:**
  - The **warming climate** favors fir trees, which are better adapted to higher temperatures and drier conditions.
  - Birch trees, reliant on moisture and cooler temperatures, are struggling due to **heat-related dryness** and reduced water availability.
- **Ecological Shifts:**
  - Fir trees' dominance is likely to change the region's **ecosystem functions**, including carbon and nitrogen cycling, litter decomposition rates, and water-use efficiency.
  - Deciduous broadleaves (like birch) are being replaced by evergreens, impacting **plant-animal interactions** and the composition of alpine plant communities.
- **Study Region and Methods:**
  - The research was conducted in Nepal's **Sagarmatha National Park** and the **Annapurna Conservation Area**, known for their extensive alpine tree lines.
  - Scientists analyzed **tree growth rings** to understand long-term trends and projected future changes under warming scenarios.

#### Projected Future Scenarios:

Under global warming scenarios predicting temperature rises of **2°C to 5°C by 2100**, fir trees are expected to dominate, benefiting from:

- **Accelerated snowmelt**, improving early spring soil moisture.
- **Resistance to hotter droughts**, unlike birch, which depends on snowmelt for seedling survival.

#### Broader Implications:

- The findings highlight the need for urgent attention to the impacts of climate change on **biodiversity and ecosystem stability** in the Himalayas.
- As the **world's most rapidly warming mountain ecosystem**, the region serves as a critical indicator of global climate trends.
- This transformation underscores the interconnectedness of climate dynamics, vegetation changes, and ecosystem functions, emphasizing the importance of targeted conservation efforts to mitigate further ecological disruptions.

## From Waste to Energy to Pollution

### News Excerpt

Delhi remains India's most polluted city, with air pollution exceeding **17 times the WHO-prescribed limits** as of December 20. Despite government interventions and

Supreme Court directives, the capital's air quality continues to deteriorate, posing severe health risks such as respiratory illnesses, increased cancer rates, and miscarriages.

### Sources of Pollution

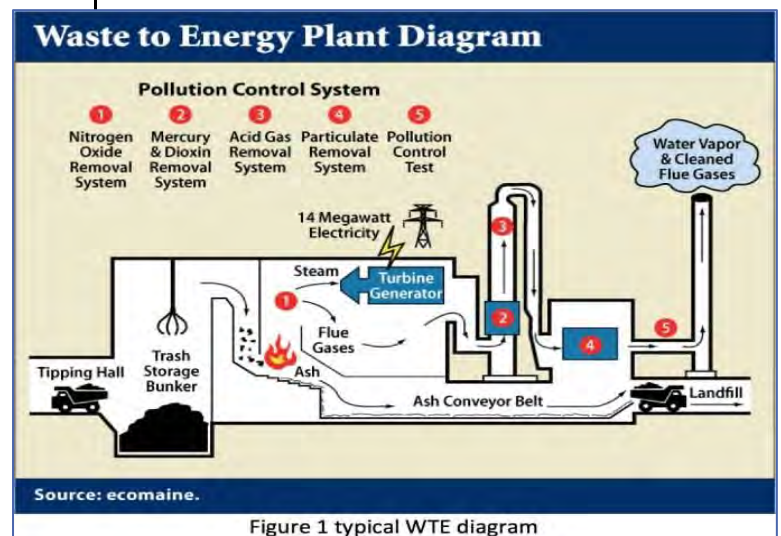


Figure 1 typical WtE diagram

- **Primary Contributors:**
    - **Coal and Biomass Burning:** Industrial processes and coal-fired power plants emit high levels of particulate matter and sulphur dioxide (SO<sub>2</sub>).
    - **Vehicular Emissions:** Delhi's massive vehicular population significantly contributes to pollution.
    - **Stubble Burning:** Although seasonal, it exacerbates winter air quality issues.
    - **Construction Dust and Firecrackers:** Activities like large-scale construction and festive firecrackers worsen the situation.
  - **Thermal Plants:**
    - Coal-fired power plants emit **240 times more SO<sub>2</sub>** than stubble burning.
    - Despite Ministry of Environment guidelines mandating **flue-gas desulfurization systems**, compliance deadlines have been extended to 2035.
  - **Waste-to-Energy (WtE) Plants:**
    - Delhi's **four WtE plants** (Ghazipur, Narela, Okhla, and Tehkhand) are major contributors to pollution.
    - These plants incinerate garbage to produce electricity, releasing **toxic particulate matter, cadmium, and dioxins**.
- ### The Role of Waste-to-Energy Plants
- **Fly Ash Toxicity:** Fly ash from WtE plants contains **cadmium levels four times higher** and dioxin levels **10 times above permissible limits**, leading to **air and water contamination**.
  - **Technological Deficiency:** Delhi's WtE plants lack advanced technologies like **stoker technology, oxygen enrichment, or direct smelting** to minimize emissions.
  - **Impact on Marginalised Communities:** WtE plants disproportionately harm nearby marginalized communities, raising concerns about **environmental justice**.

### Climate and Policy Challenges

- **Temperature Inversion in Winter:** Pollutants become trapped near the ground due to heavier, colder air during temperature inversion, worsening air quality.
- **Policy Inefficiencies:**
  - The **Graded Response Action Plan (GRAP)** does not adequately address emissions from WtE plants.
  - Extensions for compliance with emission control guidelines highlight regulatory delays.

### Recommendations

- **Regulation of WtE Plants:**
  - Suspend WtE operations until **advanced pollution control technologies** are implemented.
  - Introduce strict emission standards and monitoring protocols.
- **Thermal Plant Reforms:**
  - Expedite the installation of **flue-gas desulfurization systems** in coal-fired plants.
  - Encourage a transition to **renewable energy sources**.
- **Holistic Measures:**
  - Invest in cleaner public transport systems to reduce vehicular emissions.
  - Promote **crop diversification** to reduce dependence on stubble burning.
  - Implement stricter construction dust control measures.
- **Community-Centric Solutions:**
  - Ensure WtE plants are located away from marginalized communities.
  - Increase public awareness and community involvement in air quality management.

### Conclusion

- **Delhi's air pollution crisis** underscores the urgent need for a comprehensive and enforceable strategy that integrates cleaner technologies, stricter regulations, and community-focused solutions.
- While WtE plants offer a potential solution to the garbage crisis, their current operation exacerbates the pollution problem.
- Only through systemic changes can Delhi hope to mitigate its air quality challenges and ensure environmental justice for its citizens.

## Global Freshwater Fauna at Risk: Western Ghats as a Critical Hotspot

### News Excerpt:

A groundbreaking **multi-taxon global assessment led by the International Union for Conservation of Nature (IUCN)** has identified the Western Ghats as a significant

hotspot for threatened freshwater species. Published in the prestigious journal **Nature**, this study provides a stark warning about the alarming state of freshwater biodiversity worldwide.

### Key Findings of the Assessment

This pioneering assessment explored the conservation status of 23,496 species of freshwater fauna, including decapod crustaceans, fishes, and odonates. With contributions from over 1,000 species experts, the study revealed that nearly one-quarter of these species are threatened with extinction.

This rigorous evaluation, which has been in progress for over two decades, marks a critical effort to highlight and mitigate the threats facing freshwater species.

### Western Ghats: A Biodiversity Hotspot

The Western Ghats, a biodiversity hotspot in India, emerged as a crucial area with a high concentration of threatened freshwater species. **Over 300 freshwater fish species inhabit the region, with more than one-third facing extinction threats.** Notably, this area hosts the iconic Humpbacked Mahseer, a critically endangered fish that exemplifies the unique aquatic life of the Ghats. Among Indian states, Kerala leads with the highest number of threatened freshwater species.

### Threats to Freshwater Biodiversity

The study underscores several factors contributing to the declining health of freshwater ecosystems:

- **Pollution:** Impacting 54% of threatened species, pollution from industrial runoffs, untreated sewage, and agricultural chemicals poses a severe risk.
- **Water Resources Management:** Dams and water extraction projects disrupt natural water flow, affecting 39% of threatened species.
- **Agricultural Practices:** Land-use changes due to agriculture threaten 37% of freshwater species.
- **Invasive Species and Disease:** These factors affect 28% of threatened species, complicating conservation efforts.
- **Climate Change:** Affecting nearly 20% of species, climate change alters temperature and water flow while increasing the frequency of extreme weather events. These changes exacerbate existing threats, such as invasive species proliferation and heightened competition for water resources.

### Conservation Priorities and Strategies

- The assessment calls for distinct management strategies tailored to the unique needs of freshwater ecosystems. Historically overlooked in environmental governance, freshwater ecosystems require targeted conservation efforts to address the diverse threats they face.
- The study **emphasizes the need to protect critical areas such as the Periyar River in Kerala**, which harbors a high density of endemic and threatened species. Furthermore, urgent attention is required to mitigate



pollution, regulate water extraction, and control invasive species to safeguard freshwater biodiversity.

### Global Implications and Future Directions

- The report's findings highlight the urgent need for international cooperation and policy changes to protect freshwater ecosystems effectively. Integrating these ecosystems into global environmental governance can help in implementing effective conservation measures and reversing biodiversity loss.
- As climate change continues to challenge conservation efforts, adaptive management practices that consider the complex interactions between environmental factors will be crucial for sustaining the health of freshwater ecosystems and the species they support.

### Conclusion:

This groundbreaking assessment emphasizes the critical status of freshwater biodiversity in the Western Ghats and globally. With a significant proportion of species at risk of extinction, immediate action is necessary to protect these vital ecosystems. The findings serve as a call to action for policymakers, conservationists, and communities to prioritize the preservation of freshwater habitats and their inhabitants.

## India's Fourth Biennial Update Report: A Commitment to Climate Action

### News Excerpt:

India has recently submitted its Fourth Biennial Update Report (BUR-4) to the United Nations Framework Convention on Climate Change (UNFCCC), detailing the country's greenhouse gas (GHG) emissions inventory and progress in climate action. This report is part of India's commitments under the Paris Agreement and provides a comprehensive overview of its efforts to mitigate climate change.

### Overview of the Biennial Update Report (BUR)

The **Biennial Update Report is a mandatory submission for developing countries under the UNFCCC**, aimed at detailing their climate actions, emissions reductions, and progress toward achieving climate commitments. The BUR includes:

- A national greenhouse gas emissions inventory.
- An overview of national circumstances related to climate and socio-economic factors.
- Updates on mitigation actions and national action plans.
- Information on financial, technological, and capacity-building support received.

### Highlights from India's BUR-4

- **Reduction in Emission Intensity**
  - **36% Reduction:** Between 2005 and 2020, India achieved a **36% reduction** in the emissions

intensity of its GDP, indicating improved energy efficiency in economic activities.

- **Commitment to Further Reductions:** India aims to reduce its GDP emission intensity by **45%** compared to 2005 levels by 2030.
- **Greenhouse Gas Emissions Inventory**
  - In 2020, India's total GHG emissions were reported at **2,959 million tonnes of CO<sub>2</sub> equivalent**. After accounting for absorption by forestry and land resources, net emissions stood at **2,437 million tonnes**.
  - The report indicates a **7.93% decrease** in total national emissions compared to 2019, although emissions have increased by **98.34% since 1994**.
- **Sectoral Contributions to Emissions**
  - The energy sector was the largest contributor to GHG emissions at **75.66%**, followed by agriculture (**13.72%**), industrial processes (**8.06%**), and waste management (**2.56%**).
  - Electricity production alone accounted for **39%** of emissions within the energy sector.
- **Climate Commitments and Progress**
  - India has updated its Nationally Determined Contributions (NDCs) with key targets including:
    - Achieving **50% cumulative electric power installed capacity** from non-fossil fuel resources by 2030.
    - Creating an additional carbon sink of **2.5 to 3 billion tonnes of CO<sub>2</sub> equivalent** through forest and tree cover by 2030.
  - As of October 2024, non-fossil fuel-based power generation capacity reached **46.52%**.
- **Technological Needs for Climate Action**

The report emphasizes the need for advanced technology to support low-carbon growth and adaptation strategies. **Key areas identified include:**

- **Energy sector:** Ultra-efficient photovoltaic cells and floating wind turbines.
- **Industrial sector:** Carbon capture, utilization, and storage technologies.
- **Water sector:** Solar-powered desalination technology for arid regions.

### Conclusion:

India's BUR-4 underscores its commitment to addressing climate change while pursuing sustainable development goals. The report highlights significant strides made in reducing GHG emissions and improving energy efficiency, positioning India as a proactive participant in global climate governance. As the country continues to work towards its climate targets, it sets an example for other nations in balancing economic growth with environmental sustainability.

## One Plate, One Bag' campaign launched for plastic-free Maha Kumbh

### News Excerpt:

The "One Plate, One Bag" campaign has been launched as part of the efforts to make the Maha Kumbh Mela 2025 a plastic-free event. This initiative, spearheaded by the Rashtriya Swayamsevak Sangh (RSS), aims to significantly reduce plastic waste during one of the world's largest religious gatherings.

### Overview of the Campaign

The campaign was inaugurated along the Old GT Road in Prayagraj. The need was felt for collective action to eliminate plastic use and encouraged pilgrims to adopt sustainable practices by using cloth bags and reusable utensils.

### Goals and Objectives

The primary goal of the "One Plate, One Bag" initiative is to replace single-use plastics with eco-friendly alternatives. The campaign aims to:

- Promote environmental sustainability during the Maha Kumbh.
- Reduce plastic waste generated by millions of pilgrims attending the event.
- Encourage a cultural shift towards using reusable items in daily life.

### Key Components of the Initiative

Distribution of Eco-Friendly Alternatives

- **Cloth Bags:** Approximately 70,000 cloth bags have already been distributed from six centers across Prayagraj. These bags are intended to replace plastic bags commonly used by visitors.
- **Steel Utensils:** The initiative includes the distribution of around 2 million steel plates and glasses collected from various parts of India. These reusable items will be provided to langars (community kitchens) and food stalls within the Maha Kumbh area, replacing disposable plastic and thermocol utensils.

### Community Involvement

Local authorities and organizations have joined forces to ensure the success of this campaign. Uttar Pradesh Chief Minister Yogi Adityanath has publicly supported the initiative, urging pilgrims to avoid single-use plastics and embrace sustainable alternatives.

### Broader Environmental Efforts

#### City-Wide Campaigns

In addition to the "One Plate, One Bag" initiative, Prayagraj Municipal Corporation has implemented strict measures against single-use plastics. Enforcement teams are actively promoting alternatives like earthen cups (kulhads) and leaf plates (dona and pattal). Public awareness campaigns are also underway to educate attendees about the importance of maintaining a plastic-free environment during the event.

### Long-Term Vision

The "One Plate, One Bag" campaign is part of a broader vision for sustainability at large-scale events like Maha Kumbh. By setting an example for future gatherings, organizers hope to instill a sense of responsibility towards environmental conservation among millions of attendees. The initiative aims not only for immediate impact but also for lasting change in behavior regarding waste management and sustainability practices.

### Conclusion

The "One Plate, One Bag" campaign represents a significant step towards **making Maha Kumbh Mela 2025 an eco-friendly event**. By promoting the use of cloth bags and steel utensils, this initiative seeks to minimize plastic waste while encouraging pilgrims to adopt environmentally conscious habits. As millions gather for this spiritual occasion, the hope is that these efforts will resonate beyond the event itself, inspiring future generations to prioritize sustainability in their daily lives.

## First-ever satellite tagging of a Ganges dolphin

### News Excerpt:

**Ganges river dolphin** was satellite-tagged in Assam, marking a milestone in India's efforts to conserve its **National Aquatic Animal**. This achievement under **Project Dolphin** provides valuable opportunities to gather critical data about the species' behavior and habitat, which will enhance conservation strategies.

### Why Satellite Tagging Matters

Satellite tagging is a first for the Ganges river dolphin, a species known for its elusive behavior and vulnerability to environmental changes.

### Key Objectives of the Tagging Exercise:

1. **Understanding Migration Patterns:** Tracking seasonal and migratory behaviors across fragmented river systems.
2. **Habitat Utilization:** Studying how dolphins use and adapt to habitats in disturbed ecosystems.
3. **Conservation Insights:** Gathering evidence for crafting data-driven conservation policies.

The tags emit signals when dolphins surface, allowing scientists to monitor their movements and environmental interactions in real time.

### About the Ganges River Dolphin

- **Scientific Name:** Platanista gangetica.
- **Family:** Platanistidae, which includes the Indus river dolphin (Platanista minor).
- **Size & Diet:**
  - Females grow up to 2.6 meters, males up to 2.2 meters.
  - Diet includes fish and invertebrates.

- **Cultural Significance:** Revered as a **vahana** (vehicle) of Goddess Ganga in Indian mythology.
- **Current Status:**
  - Classified as **Endangered** by the **IUCN Red List** since the 1990s.
  - Estimated population: **3,500 to 5,000 individuals**.

### Threats to the Ganges River Dolphin

- **Dams and Barrages:**
  - Obstruct migration and disrupt breeding.
  - Impact food supply and habitat continuity.
- **Pollution:**
  - Chemical and plastic pollutants degrade river ecosystems.
- **Poaching:**
  - Dolphins are hunted for their blubber, which is used as bait or for oil.
- **Habitat Loss:**
  - Shrinking and drying of rivers due to climate change and human activity.
- **Fishing Nets:**
  - Accidental entanglement leads to injury or death.

### Conservation Efforts So Far

- **Inclusion in Wildlife Protection Act (1986):**
  - Listed under **Schedule I** to ensure maximum protection.
  - Establishment of the **Vikramshila Ganges Dolphin Sanctuary** in Bihar.
- **Conservation Action Plan (2010-2020):**
  - Focused on mitigating river traffic, prey depletion, and habitat fragmentation.
- **National Aquatic Animal Status (2009):**
  - Boosted public awareness and encouraged community participation.
- **Project Dolphin (2020):**
  - Aimed at holistic conservation, similar to the successful **Project Tiger**.

### Role of Satellite Tagging in Conservation

Satellite tagging introduces modern technology into conservation practices.

#### Key Benefits:

- **Real-Time Monitoring:** Enables tracking movements across borders and seasons.
- **Threat Identification:** Helps detect potential dangers such as polluted zones or high boat traffic areas.
- **Data-Driven Strategies:** Supports evidence-based policymaking and resource allocation.
- **Ecosystem Insights:** Contributes to broader ecosystem management by focusing on this **umbrella species**.

### Umbrella Species Concept

- The **Ganges river dolphin** is considered an **umbrella species**, meaning its conservation benefits the entire ecosystem.

- Protecting the dolphin ensures the **health of riverine habitats**, supporting diverse flora, fauna, and human communities dependent on these waterways.

### Looking Ahead

- The first-ever satellite tagging of a Ganges dolphin is a significant step toward understanding and reversing the decline of this iconic species.
- As part of **Project Dolphin**, it underscores India's commitment to blending scientific innovation with conservation efforts to protect its natural heritage.

## Arctic tundra is emitting more carbon

### News Excerpt:

For the first time in thousands of years, the Arctic tundra—a critical carbon sink—is releasing more carbon dioxide (CO<sub>2</sub>) and methane (CH<sub>4</sub>) than it absorbs. This shift, highlighted in the **2024 Arctic Report Card** by the National Oceanic and Atmospheric Administration (NOAA), poses severe implications for global climate change. Here's a detailed look at the factors driving this transformation and its potential consequences:

### How Does the Arctic Tundra Store Carbon?

- The Arctic tundra's **permafrost**, a frozen layer of soil and organic material, acts as a natural carbon repository.
- **Cold climate slows decomposition:** Dead plants and animals remain frozen, locking carbon in the soil for thousands of years.
- Arctic soils hold over **1.6 trillion metric tonnes of carbon**, roughly double the carbon currently in the atmosphere.

### Why Is the Tundra Now Emitting More Carbon?

#### Rising Temperatures

- The Arctic is warming **four times faster than the global average**.
- **Thawing permafrost** activates dormant microbes, breaking down organic matter and releasing CO<sub>2</sub> and CH<sub>4</sub> into the atmosphere.
- Methane, although less abundant than CO<sub>2</sub>, is a **25 times more potent greenhouse gas** over a 100-year period.

#### Increased Wildfires

- The Arctic has seen **record-breaking wildfire seasons** in recent years.
  - 2024 was the second-biggest year for wildfire emissions.
  - Fires release carbon directly into the atmosphere and accelerate permafrost thawing.
- Wildfire smoke adds GHGs and darkens snow and ice, reducing their reflective capacity, which further accelerates warming.

### What Are the Consequences?

- **Exacerbating Global Warming:** The Arctic's shift from a carbon sink to a carbon source could create a **feedback**

**loop**, where more emissions lead to faster warming and further thawing.

- **Impact on Global Climate Goals:** The additional GHG emissions make it harder to limit global warming to the 1.5°C threshold set by the Paris Agreement.
- **Rising Sea Levels:** Thawing permafrost contributes to melting glaciers, raising sea levels and threatening coastal areas worldwide.

### Can the Trend Be Reversed?

While the situation is dire, scientists suggest it is still possible to reverse the trend:

1. **Aggressive Emission Reductions:**
  - Lower GHG emissions would slow Arctic warming and permafrost thawing.
  - Reducing deforestation and adopting renewable energy are critical steps.
2. **Global Climate Cooperation:**
  - Nations must honor their commitments to cut emissions under agreements like the Paris Accord.
3. **Monitoring and Mitigation:**
  - Continued research and monitoring can help develop localized strategies to protect vulnerable Arctic ecosystems.

### The Outlook

- Despite these solutions, the reality remains challenging. The **Global Carbon Project** estimates that total CO<sub>2</sub> emissions in 2024 will reach **41.6 billion tonnes**, a slight increase from 2023. This continued rise in emissions underscores the urgent need for stronger international action.
- The Arctic tundra's transformation is not just an environmental issue but a global crisis. Mitigating its impact requires a **collective effort to curb greenhouse gas emissions** and prioritize sustainable practices worldwide.

## SCIENCE & TECHNOLOGY

### Jetson Orin Nano Super

#### News Excerpt

**Nvidia**, a leader in **graphics processing units (GPUs)**, unveiled the **Jetson Orin Nano Super**. This compact **generative AI supercomputer** aims to democratize AI development with its enhanced performance, affordable pricing, and extensive capabilities. The **developer kit**, priced at just **\$249**, is designed for a diverse range of users, from commercial developers to students.

#### What Is the Jetson Orin Nano Super?

The **Jetson Orin Nano Super** is a small yet powerful computer designed to run advanced AI models efficiently on edge devices.

### Key Features and Specifications

- **Performance:** Up to **67 TOPS** (Trillions of Operations Per Second), offering a **1.7x performance boost** compared to its predecessor.
- **AI Model Support:** Capable of running generative AI models, including vision transformers, large language models (LLMs), and vision-language models.
- **Memory & CPU:**
  - **102 GB/s** memory bandwidth.
  - **6-core ARM Cortex-A78 CPU** clocked at 1.7 GHz.
- **GPU:** Powered by Nvidia's **Ampere architecture** with 1,024 CUDA cores and 32 tensor cores.
- **Storage:** Requires an external microSD card for the operating system, akin to the Raspberry Pi setup.

### Jetson Orin Nano Super Developer Kit

The developer kit is a compact platform tailored for generative AI applications.

#### Hardware Features

- **Connectivity:**
  - Two camera connectors.
  - Four USB 3.2 ports.
  - M.2 slots.
  - Gigabit Ethernet for local network server connectivity.
- **Software:** Preloaded with the Nvidia AI software stack, supporting CUDA, CudNN, and TensorRT libraries for seamless AI development.

#### Design:

- Compact, efficient, and **developer-friendly**, making it accessible for a wide audience ranging from students to industry professionals

#### Use Cases of the Jetson Orin Nano Supercomputer

- The **Jetson Orin Nano Super** has applications across numerous industries, enhancing AI accessibility for businesses of all sizes.
- **Smart Surveillance Systems**
  - Real-time detection of anomalies, faces, and objects via connected cameras.
- **Robotics**
- Ideal for autonomous manufacturing and logistics systems with high-performance AI capabilities.
- **Smart Retail**
  - Deployment of predictive analytics and AI-driven customer support systems.
- **Healthcare**
  - Supports automation for tasks such as sorting medical supplies and delivering medication.
- **AI-Powered Smart Devices**
  - Integration into smart home devices, wearables, and IoT ecosystems.
- **Autonomous Vehicles**
  - Assists in navigation, object detection, and decision-making for self-driving systems.

- **Research and Education**
  - An affordable tool for universities and students to explore generative AI and machine learning.
- **Content Creation**
  - Powers generative AI models for video editing, image generation, and automated content production.

### Impact and Accessibility

- By offering cutting-edge AI performance at an entry-level price, **Nvidia's Jetson Orin Nano Super democratizes AI development.**
- It enables startups, small businesses, and academic institutions to harness generative AI technologies without significant capital investment.
- This innovation is poised to accelerate advancements in robotics, healthcare, education, and more, while making AI more inclusive and widespread.

## ISRO & ESA agree to mission implementation

### News Excerpt

The **Indian Space Research Organisation (ISRO)** and the **European Space Agency (ESA)** signed a pivotal agreement to advance collaboration in **astronaut training, mission implementation, and research experiments.**

### Key Highlights of the Agreement

- **Comprehensive Cooperation:**
  - Focused on **human space exploration and research.**
- Areas of collaboration include:
  - Astronaut training.
  - Experiment development and integration.
  - Utilizing **ESA's facilities** on the **International Space Station (ISS).**
  - Human and biomedical research experiments.
  - Joint education and outreach programs.
- **Axiom-4 Mission Collaboration:**
  - The **Axiom-4 mission** will feature ISRO's **Gaganyatri** and ESA's astronaut as part of the crew.
  - The agencies are working together to implement experiments proposed by Indian Principal Investigators on the ISS.
- **Broader Initiatives:**
  - Participation in ESA's **human physiological studies.**
  - Collaboration on **technology demonstration experiments.**
  - Joint educational outreach programs aimed at inspiring future generations.

### Remarks by Leaders

- **Dr. S Somanath** (ISRO Chairman):
  - Highlighted ISRO's roadmap for **human spaceflight activities**, including the recent approval of

the **Bharatiya Antariksh Station (BAS)**, India's proposed indigenous space station.

- Emphasized opportunities to develop interoperability between human spaceflight platforms.
- **Dr. Josef Aschbacher** (ESA Director General):
  - Thanked ISRO for its partnership and emphasized the agreement's potential to strengthen collaborative efforts.
  - Expressed satisfaction with the progress on joint activities, particularly for the **Axiom-4 mission.**

### Strategic Implications

1. **Advancing Human Spaceflight:**
  - Cooperation strengthens both ISRO's **Gaganyaan mission** and ESA's human spaceflight initiatives.
  - Shared use of resources like the ISS fosters cost-effective research and development.
2. **Technological Exchange:**
  - Mutual benefits in **technology demonstration** and physiological studies.
  - Opportunities to advance biomedical research critical for long-duration space missions.
3. **Future-Ready Collaboration:**
  - Joint efforts on BAS could position both agencies as leaders in **space station interoperability.**
  - Educational and outreach programs enhance global interest and participation in space exploration.

### Conclusion

- The ISRO-ESA agreement is a landmark step in fostering international collaboration in **human spaceflight and research.**
- With shared missions like **Axiom-4** and India's ambitious **Bharatiya Antariksh Station**, the partnership is set to accelerate advancements in space exploration while inspiring future generations of scientists and astronauts.

## India's first crewed deep-sea mission

### News Excerpt

**Ramesh Raju's New Year plans** involve spending two hours underwater in a **titanium-cased chamber** that's barely seven feet long. The scientist with the National Institute of Ocean Technology in Chennai is in line to be a pilot for India's first crewed underwater mission, **Samudrayaan.**

### Overview of Samudrayaan Mission

- **Objective:** India aims to send a three-member crew 6,000 meters deep into the Indian Ocean by 2026, placing it among an elite group of nations capable of such deep-sea exploration.
- **Vehicle: Matsya 6000**, a 28-tonne manned submersible designed in-house by the National Institute of Ocean

Technology (NIOT), Chennai, under the Ministry of Earth Sciences (MoES).

- **Purpose:** Exploring underwater polymetallic nodules (PMNs) containing valuable minerals such as nickel, copper, manganese, and cobalt in the Central Indian Ocean.

### Mission Highlights

- **Technological Milestone:**
  - First-time use of state-of-the-art **lithium polymer batteries** in a deep-sea submersible.
  - Safety-first design with three backup plans, remote control capability from the mother ship, and an innovative "digital twin" system for real-time tracking.
  - Collaboration with **ISRO** for the human cabin (personal sphere) to ensure it can withstand immense pressures at 6,000 meters.
- **Testing Phases:**
  - Initial **harbor tests** in the Bay of Bengal with and without crew, progressing from 15 meters to 500 meters in 2024.
  - Final testing in the **Central Indian Ocean region** by 2026.
- **Team Efforts:**
  - Led by experienced NIOT scientists like **Ramesh Raju** (electronics and navigation) and **Dr. Vedachalam N** (project director).
  - Cross-department collaboration ensures robustness in design and execution.
- **Historical Context:**
  - NIOT has over three decades of expertise in building submersibles, starting with projects like **ROSUB 6000** in 2010.
  - Samudrayaan aligns with India's broader **Deep Ocean Mission** and symbolizes indigenous technological advancement.

### Scientific & Strategic Implications

- **Scientific Contribution:**
  - Enables groundbreaking research in marine biodiversity, mineral resources, and deep-sea ecosystems.
  - Aids climate studies by providing access to unexplored parts of the ocean.
- **Strategic Impact:**
  - Enhances India's technological self-reliance and global standing in oceanic exploration.
  - Strengthens the understanding of polymetallic nodules, critical for future energy and material needs.

### Safety and Challenges

- **Safety Measures:**
  - Titanium construction ensures resistance to the 600x pressure at 6,000 meters.
  - Advanced life-support systems for oxygen and CO<sub>2</sub> management.

### Challenges:

- Coordinating complex systems, handling the human element, and ensuring seamless integration of all components under extreme conditions.
- The 2023 Titan submersible disaster prompted thorough reevaluation of safety protocols.

### Cultural and Emotional Significance

- NIOT scientists draw parallels between ocean exploration and space missions, highlighting their shared ambition and innovative spirit.
- The mission is not just a technological feat but a source of pride and inspiration, paving the way for interdisciplinary research and new discoveries.

## Firefly Sparkle discovered

### News Excerpt

The discovery of **Firefly Sparkle**, a distant galaxy observed by NASA's **James Webb Space Telescope (JWST)**, offers a rare and vivid glimpse into the early universe and the infancy of galaxies like our own **Milky Way**. Here's why this finding is significant:

### Key Highlights of Firefly Sparkle

- **Early Universe Insight:**
    - The galaxy is located **13 billion light-years away**, meaning we see it as it was just **100-400 million years after the Big Bang**.
    - It represents the early stages of galaxy formation in the universe.
  - **Similarity to Milky Way's Beginnings:**
    - Firefly Sparkle has a **stellar mass of about 10 million suns**, much smaller than the present Milky Way but typical of galaxies at that epoch.
    - It is composed of **10 densely packed star clusters** within a diffuse arc of stars, suggesting early structural assembly, much like how the Milky Way may have appeared in its formative years.
  - **Cosmic Neighbors:**
    - Firefly Sparkle is flanked by two smaller galaxies, nicknamed **Firefly-Best Friend** and **Firefly-New Best Friend**, likely early companions or contributors to its growth.
  - **Gravitational Lensing:**
    - The discovery was possible due to **gravitational lensing**, where a foreground galaxy cluster magnified the distant Firefly Sparkle by **16-26 times**, enabling the JWST to capture its faint light in extraordinary detail.
- ### What Does This Discovery Teach Us?
- **Milky Way's Evolution:**
    - The findings help reconstruct the **formation and evolution of galaxies** like the Milky Way.

- It shows how such galaxies began small and gradually grew through **mergers and star formation**, eventually becoming massive, structured systems.
- **Galaxy Formation in the Early Universe:**
  - Observing Firefly Sparkle gives astronomers direct evidence of **how galaxies assembled and evolved** shortly after the Big Bang.
  - Its compact clusters suggest rapid star formation in early galaxies.
- **Role of Gravitational Lensing:**
  - This phenomenon underscores the importance of cosmic coincidences in observing distant objects.
  - By magnifying the faint light of Firefly Sparkle, gravitational lensing allows scientists to study galaxies that are otherwise undetectable.

### Significance of JWST's Contribution

- **Powerful Telescope:**
  - JWST's advanced infrared imaging makes it possible to study distant, faint galaxies like Firefly Sparkle.
  - It extends humanity's ability to observe and understand the universe's infancy.
- **Pushing the Boundaries of Cosmology:**
  - By observing galaxies from such an early era, astronomers can refine models of **galaxy formation, dark matter, and cosmic evolution**.

### Conclusion

- The observation of **Firefly Sparkle by JWST** not only provides a window into the **infancy of galaxies** but also deepens our understanding of the **Milky Way's origins**.
- It highlights the **significance of cutting-edge technologies like JWST** and natural phenomena like **gravitational lensing** in unraveling the mysteries of the cosmos.

## 'Kisan Kavach' to Shield Farmers from Pesticide Sprays

### News Excerpt

Scientists affiliated with the **Department of Biotechnology (DBT)** have developed a unique **anti-pesticide suit** named **Kisan Kavach**, which is similar to PPE kits for healthcare workers.

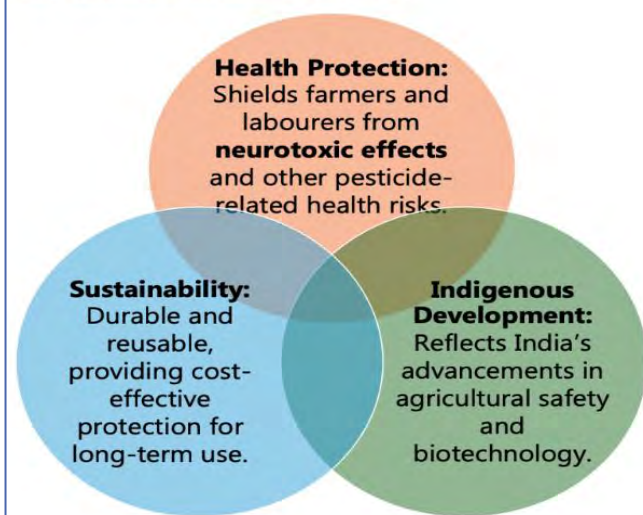
### About Kisan Kavach

- **Purpose:** The Kisan Kavach is India's first-of-its-kind **anti-pesticide bodysuit** designed to protect farmers from the toxic effects of pesticides.



- It prevents **pesticide-induced neurotoxicity** and other health hazards caused by prolonged exposure.
- **Development:** Created by the **Biotechnology Research and Innovation Council (BRIC-inStem)**, Bangalore, in collaboration with **Sepio Health Pvt. Ltd.**
- **Composition:** The kit includes **Trousers, a Pullover, and a Face Cover**. It is made of **oxime fabric**, a specialised material that chemically breaks down common pesticides upon contact.
- **Protective Mechanism:** The oxime fabric neutralises pesticides through **nucleophilic-mediated hydrolysis**, preventing chemicals from leaching into the skin. This reduces pesticide-induced toxicity and lethality.
- **Durability and Effectiveness:** It retains its protective potency under a wide range of **temperatures and UV light** exposure. It maintains effectiveness even after **150 washes**, ensuring long-term utility.
- **Affordable Innovation:** Each kit is priced at **₹4,000**, making it an accessible solution for farmers.

### Significance of Kisan Kavach



## Norovirus cases rising

### News Excerpt

The **stomach infection norovirus** is causing alarm in the **United States**, with the **first week of December** seeing **more than 90 cases recorded**. In **India**, norovirus has previously affected people in **Kerala**, although on a **much smaller scale** compared to the numbers in the US.

### What is norovirus and how does it spread?

- **Norovirus is a highly contagious virus** that is also sometimes referred to as the '**winter vomiting bug**'.
- It can be **transmitted through contaminated food, water, and surfaces**. The primary route is **oral-faecal**.
- It is similar to **diarrhoea-inducing rotavirus** and infects people **across age groups**. **Disease outbreaks** typically

occur aboard cruise ships, in nursing homes, dormitories, and other closed spaces.

- According to the WHO, emerging evidence suggests that “**norovirus infection** is associated with **intestinal inflammation, malnutrition** and **may cause long-term morbidity**”.
- It adds that **an estimated 685 million cases of norovirus** are seen annually, **including 200 million cases among children** under the age of five.
- The **US Centers for Disease Control and Prevention’s website** further states **norovirus is the leading cause of foodborne illness** in the United States, **causing 58% of all foodborne illnesses** in the country.

#### What are the symptoms of norovirus?

- The **initial symptoms of norovirus** are **vomiting and/or diarrhoea**, which show up **one or two days after exposure to the virus**.
- **Patients also feel nauseous** and **suffer from abdominal pain, fever, headaches** and **body aches**.
- In extreme cases, **loss of fluids could lead to dehydration**.

#### What precautions can one take against norovirus?

- One may **get infected multiple times** as the **virus has different strains**. **Norovirus is resistant to many disinfectants** – such as **hand sanitisers** – and can withstand heat up to **60°C**.
- Therefore, **merely steaming food or chlorinating water** does not **kill the virus**.
- The **basic precaution** is also the most obvious – **repeatedly washing hands with soap** after **using the lavatory or changing diapers**.
- It is **important to wash hands carefully** before eating or preparing food. During outbreaks, surfaces must be disinfected with a solution of **hypochlorite at 5,000 parts per million**.
- The **US Centre for Disease Control and Prevention** suggests that **those infected should avoid contact** with others and avoid preparing food for others while sick and for two days after symptoms stop.

#### What is the treatment for norovirus?

- The **disease is self-limiting**. The **infection**, even though **it takes a lot out of the patient**, **normally lasts only two or three days**, and **most individuals** who are not very young, very old, or malnourished can ride it out **with sufficient rest and hydration**.
- **Diagnosis is done** by **real-time reverse transcription-polymerase chain reaction**. **No vaccines are available** for the disease.
- It is important to **maintain hydration in the acute phase**. In **extreme cases**, patients have to be **administered rehydration fluids intravenously**.

## Blue Origin’s New Glenn rocket

### News Excerpt

The **US Federal Aviation Administration (FAA)** said that it has issued a **commercial space launch license for Blue Origin’s — Jeff Bezos’ rocket company — New Glenn launch**.

### What is the New Glenn Rocket?

- **Name Origin:** Named after John Glenn, the first American astronaut to orbit Earth in 1962.
- **Specifications:**
  - **Height:** ~320 feet (as tall as a 32-story building).
  - **Payload Fairing:** 7 meters in diameter.
  - **Stages:** Two-stage rocket.
- **Engines and Reusability:**
- **First Stage:**
  1. Powered by **seven BE-4 engines**, which are fueled by liquefied natural gas (LNG) and oxygen.
  2. Generates **3.8 million pounds of thrust**.
  3. Reusable for at least **25 flights**.
- **Second Stage:**
  1. Powered by **two BE-3U engines** using liquid hydrogen and liquid oxygen.
  2. Produces **320,000 pounds of vacuum thrust**.

### Significance for Blue Origin

- **Entering the Heavy-Lift Market:** The New Glenn is designed to handle large payloads, putting Blue Origin in direct competition with SpaceX’s **Falcon 9** and **Falcon Heavy**, which currently dominate the commercial launch industry.
- **Reusability and Cost-Effectiveness:** The partially reusable first stage is expected to reduce costs, aligning with industry trends pioneered by SpaceX.
- **Expanding Market Reach:**
  - The January 2025 mission will focus on the **Blue Ring program**, a line of maneuverable spacecraft aimed at military and government clients, including the Pentagon.
  - Successful missions could secure more contracts with NASA and other agencies.
- **Advancing Blue Origin’s Reputation:** Blue Origin, founded in 2000, has lagged behind SpaceX, which was established two years later. Its most notable achievement to date is the **New Shepard**, a suborbital rocket primarily used for space tourism. The New Glenn aims to establish Blue Origin as a major player in orbital and deep space missions.

### Challenges and Delays

- **Missed Deadlines:**
  - Originally slated for a late 2024 launch, the New Glenn’s first mission was delayed due to incomplete development. NASA even removed its Mars-bound orbiters from the mission.



- The current target is **6 January 2025**.
- **Bumpy Development Path:**
  - The BE-4 engines faced prolonged delays, affecting both the New Glenn and **United Launch Alliance's Vulcan Centaur** rocket, which uses the same engines.

### Upcoming Mission

The first mission will test technologies related to the **Blue Ring program**, marking a step forward in Blue Origin's goal to offer advanced spacecraft for defense and commercial purposes.

### Competition with SpaceX

- **Falcon 9:**
  - Over **400 successful missions** to date.
  - Known for reliability, cost-effectiveness, and partial reusability.
- **New Glenn's Position:** While Blue Origin has high hopes for New Glenn, it faces a steep challenge in matching SpaceX's record of success and market dominance.

The **New Glenn rocket** represents a **bold move by Blue Origin** to elevate its role in **space exploration and commercial launches**. If successful, it could mark a turning point for Bezos' company in the **space race**.

## India Achieves Titanium Milestone

### News Excerpt

PTC Industries' subsidiary, **Aerolloy Technologies**, has become the first **private Indian company** to commission a **Vacuum Arc Remelting (VAR) furnace**, a critical technology for producing **aerospace-grade titanium alloy ingots**.

### Significance of the VAR Facility

- **State-of-the-Art Technology:**
  - The German-made VAR furnace, located in Lucknow, can produce **1,500 metric tons annually** and manufacture ingots up to **1,000 mm in diameter**.
  - Operating under vacuum conditions, the furnace ensures **superior metallurgical quality** and **uniform alloy composition**, vital for jet engines and airframes.
- **Global Standards:**
  - The facility places India among an elite group of nations — the **US, Russia, China, France, and the UK** — with the ability to produce **high-grade titanium alloys** for aerospace applications.

### Impact on Indian Aerospace and Defence

- **Strategic Autonomy:**
  - This achievement reduces India's dependence on **imports** for critical aerospace materials.
- **Enhanced Manufacturing Ecosystem:**
  - The company's new facility in the **Uttar Pradesh Defence Industrial Corridor** will expand capabilities

to include titanium and **superalloy mills**, producing billets, bars, plates, and sheets.

### Global Competitiveness:

- By achieving self-reliance in producing these materials, India strengthens its position in the global aerospace and defence supply chain.

### Market Context

- PTC Industries Limited's shares were trading at **₹13,316.55**, down by **1.06%** at the time of this announcement.

### Future Outlook

- With the commissioning of this VAR furnace, **India strengthens its self-reliance in aerospace and defence manufacturing**, aligning with the government's **Make in India** initiative.
- This development also enhances India's ability to support **domestic and global aerospace projects**, boosting economic and strategic growth.

## India on Alert for HMPV Amid Outbreak

### News Excerpt

India has heightened surveillance for respiratory illnesses and seasonal influenza following reports of a **Human Metapneumovirus (HMPV)** outbreak in China. The National Centre for Disease Control (NCDC), under the Union Health Ministry, is closely monitoring the situation in coordination with international agencies.

### What is HMPV?

Human Metapneumovirus (HMPV) is a respiratory pathogen from the **Pneumoviridae family, Metapneumovirus genus**. It is an **enveloped, single-stranded RNA virus** known to cause mild to severe respiratory infections in people of all ages.

- **Incubation Period:** 3–5 days.
- **Transmission:** Spread occurs through respiratory secretions from coughing or sneezing and close personal contact, such as touching or shaking hands.
- **Symptoms:**
  - **Mild:** Cough, fever, nasal congestion.
  - **Severe:** Shortness of breath and lower respiratory tract infections, which may require medical attention.

### Global Concerns

- **China's Situation:**
  - Rising cases, particularly among children under 14 in Northern provinces, have prompted the Chinese CDC to enhance monitoring systems for pneumonia of unknown origins.
  - Cases of **HMPV and rhinovirus** are showing an upward trend.
- **US CDC's Warning:** The virus is known to cause upper and lower respiratory diseases globally, making it an

under-recognized contributor to seasonal respiratory illnesses.

### Precautions and Recommendations

- **Personal Hygiene:**
  - Wash hands frequently with soap.
  - Avoid touching eyes, nose, and mouth with unwashed hands.
  - Maintain distance from people showing symptoms of illness.
- **Public Health Measures:**
  - Early detection through **heightened surveillance** and improved monitoring systems.
  - Global collaboration to validate and share information on HMPV cases.

### India's Preparedness

- The NCDC is actively validating information and is in constant touch with international health agencies to adapt to the evolving situation.
- Increased focus on early detection and isolation measures to prevent the spread of respiratory infections.

### Outlook for Winter

- **As respiratory illnesses typically surge** during colder months, the **HMPV outbreak** in China underscores the importance of vigilance, not just for this specific virus but for other seasonal pathogens as well. India's proactive measures aim to minimize potential public health risks while keeping citizens informed.

## Rabbit fever

### News Excerpt

**Tularemia**, or rabbit fever, is a rare yet serious bacterial infection caused by *Francisella tularensis*. Recently, the disease has drawn attention due to a significant rise in cases in the United States. Between **2011 and 2022**, tularemia cases increased by 56%, according to the **CDC**, with vulnerable groups including children aged 5–9, older men, and individuals of American Indian or Alaska Native descent.

### How Is Rabbit Fever Transmitted?

Tularemia is transmitted through multiple pathways:

1. **Direct Contact with Infected Animals:** Rabbits, hares, or rodents carrying *Francisella tularensis* pose a risk, particularly for hunters or wildlife enthusiasts.
2. **Insect Bites:** Ticks and deer flies are common vectors, especially in tick-dense regions.
3. **Contaminated Food or Water:** Consumption of untreated water or undercooked meat from infected animals can cause infection.
4. **Inhalation:** Breathing contaminated dust or droplets, often in agricultural or laboratory settings, can result in **pulmonary tularemia**.

### Symptoms of Tularemia

The disease manifests in four forms: **ulceroglandular**, **glandular**, **pneumonic**, and **typhoidal**, with symptoms varying by infection route. Common early signs include:

- **High fever** (up to 104°F/40°C), chills, and body aches.
- **Swollen lymph nodes** near the infection site (e.g., underarms or groin).
- Skin ulcers at the site of bacterial entry.

Symptoms usually appear 3–5 days after exposure.

### Why Are Cases Increasing?

**Dr. Palleti Siva Karthik Reddy**, a consultant at Koshys Hospital, identifies the following factors:

1. **Climate Change:** Warmer temperatures increase tick activity and extend breeding seasons.
2. **Deforestation and Habitat Encroachment:** Greater human interaction with wildlife heightens exposure.
3. **Improved Diagnostic Capabilities:** Enhanced surveillance and testing reveal more cases.

### Differentiation and Diagnosis

Tularemia can resemble other illnesses like flu, pneumonia, or lymphadenitis. However, the presence of **skin ulcers** and swollen lymph nodes in individuals recently exposed to wildlife or ticks is a distinguishing feature.

### Treatment and Prognosis

Tularemia is highly treatable with **antibiotics**:

- **First-line options:** Streptomycin or gentamicin.
- **Milder cases:** Doxycycline or ciprofloxacin.

Treatment typically lasts **10–21 days**, offering high recovery rates if started promptly. Without treatment, severe cases can lead to complications like chronic infections, lung abscesses, pneumonia, or life-threatening sepsis. The **mortality rate** is 1–2% with treatment but can rise to **30–60%** in untreated severe cases.

### Is India at Risk?

- **Tularemia** remains extremely rare in India due to its **distinct ecological conditions** and limited interaction with the primary reservoirs of ***Francisella tularensis***.
- However, awareness is **critical for individuals** traveling to endemic regions or working with wildlife.
- With **climate change and habitat alterations** increasing global disease transmission risks, vigilance and preventive measures are crucial to mitigate outbreaks.

## Isro grows crops in space

### News Excerpt

The Indian Space Research Organisation (**ISRO**) has achieved a groundbreaking milestone by successfully germinating **cowpea seeds** in microgravity during the **PSLV-C60 POEM-4 mission**. This pioneering experiment, conducted using the **Compact Research**

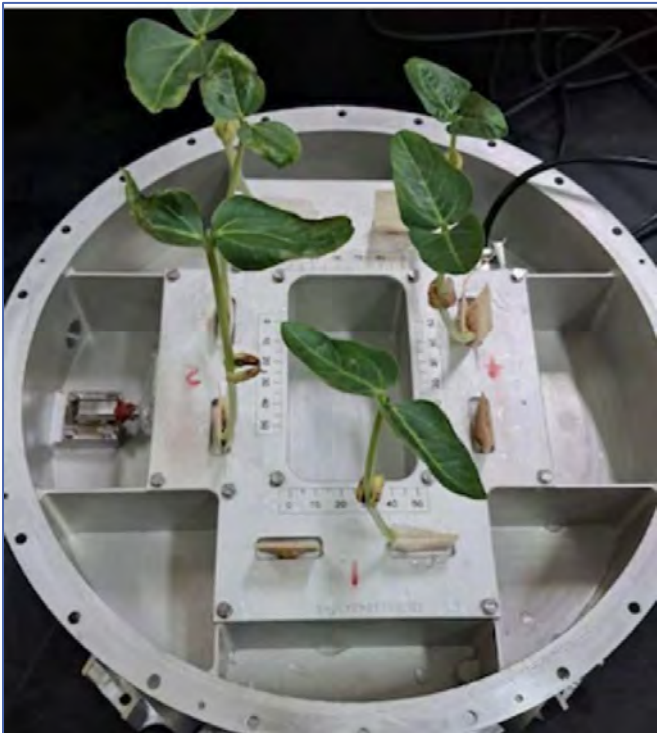
**Module for Orbital Plant Studies (CROPS)**, represents a significant leap in understanding plant growth under space conditions.

**About the CROPS Experiment**

The **CROPS payload**, developed by ISRO's **Vikram Sarabhai Space Centre (VSSC)**, is an **automated system** designed to investigate the germination and growth of plants in a microgravity environment.

**Key Features**

- **Seed Selection:** Eight **cowpea seeds** were used in this controlled study.
- **Environment:** A closed-box system with precise thermal regulation was implemented to simulate optimal growth conditions.
- **Monitoring Technologies:**
  - High-resolution cameras for real-time imaging.
  - Sensors to measure **oxygen and carbon dioxide levels, relative humidity, temperature, and soil moisture.**



**Results**

- The cowpea seeds germinated within **four days**.
- Leaves are expected to sprout shortly, marking the initial success of the experiment.

**Significance of the Experiment**

This success lays the groundwork for **extraterrestrial agricultural research**, addressing the challenges of sustaining life on long-duration space missions and potentially on other planets.

**Implications**

1. **Sustainability in Space:** Developing self-reliant food systems for astronauts during long-term missions.
2. **Space Colonization:** Aiding future plans to establish human presence on the Moon, Mars, and beyond.

3. **Scientific Advancement:** Enhancing understanding of how microgravity affects biological processes like germination and growth.

**The POEM-4 Mission**

- The **PSLV Orbital Experiment Module (POEM-4)** mission includes 24 advanced payloads, developed in collaboration between ISRO and academic institutions, demonstrating India's commitment to scientific innovation.

**A Step Closer to Thriving Beyond Earth**

- ISRO's success in germinating seeds in space is a vital step toward realizing the dream of **self-sustaining space habitats**.
- This breakthrough bolsters India's reputation as a leader in global space exploration and brings humanity closer to thriving in extraterrestrial environments.
- By proving the viability of **space agriculture**, ISRO has not only showcased its technological prowess but also taken a significant step toward making interplanetary living a reality.

**New Memories Do Not Overwrite Old Ones**

**News Excerpt**

A recent study by researchers at Cornell University provides fresh insights into how the brain prevents new memories from overwriting old ones. By studying mice, the researchers discovered that distinct phases of sleep play a critical role in separating and consolidating new and old memories.

**The Study**

- **Setup:**
  - Mice were taught various tasks over a month.
  - Brain electrodes and spy cameras tracked their neural activity and pupil dynamics during sleep.
- **Method:**
  - The researchers interrupted sleep at different times to assess the mice's ability to recall learned tasks.
- **Findings:**
  - Neural activity and pupil size changes revealed distinct memory processing during **non-REM sleep**:
    - **Small pupil sub-state:** New memories are replayed and consolidated.
    - **Large pupil sub-state:** Older memories are replayed, preserving them intact.

**Key Insight**

The brain separates memory processing into two sub-stages of non-REM sleep. This prevents interference between old and new memories, ensuring both can coexist without overwriting each other.

**Implications**

1. **Understanding Memory Retention:**
  - Explains how the brain incorporates new knowledge while maintaining old memories.

## 2. Future Research Directions:

- Investigating whether similar mechanisms exist in humans.
- Exploring potential applications in treating memory-related conditions such as **Alzheimer's** or **amnesia**.

## 3. Sleep and Cognitive Health:

- Reinforces the importance of quality sleep for learning and memory.

### Conclusion

This study sheds light on the intricate processes underlying memory consolidation. The discovery of a two-phase system during non-REM sleep offers a possible explanation for how the brain elegantly manages the balance between preserving the past and integrating the new.

## Proteus ONE Proton Therapy System

### News Excerpt

The **Proteus ONE Proton Therapy System** is a cutting-edge, compact proton therapy solution developed by IBA (Ion Beam Applications). It is designed to deliver precise and effective radiation treatment for cancer patients, utilizing the unique properties of protons to minimize damage to surrounding healthy tissues.



### Key Features of the Proteus ONE

- **Single-Room Design:** The Proteus ONE is a **single-room, compact-gantry system** that allows for efficient space utilization in clinical settings. Its design facilitates easy installation and integration into existing radiation oncology departments.
- **Pencil Beam Scanning:** This system employs **pencil beam scanning (PBS)** technology, which enables highly accurate targeting of tumors while sparing healthy tissues. Proton beams are modulated to deliver precise doses at specific depths, reducing side effects compared to traditional X-ray radiation therapies.

### Advanced Imaging and Positioning

- The Proteus ONE features advanced imaging capabilities, including **cone-beam computed tomography (CBCT)** and stereoscopic imaging, which provide detailed visualization of patient anatomy. A **6D robotic couch** allows for precise patient positioning, accommodating complex treatment plans.

### Patient Comfort and Experience

- The system incorporates the **Philips Ambient Experience**, which enhances patient comfort during treatment through customizable sounds, colors, and visuals. This approach aims to reduce anxiety and improve the overall experience for patients undergoing therapy.

### Clinical Flexibility and Scalability

- The Proteus ONE is designed for scalability, allowing clinics to expand their capabilities by adding additional systems as needed without disrupting ongoing treatments. This feature provides operational flexibility to adapt to growing patient needs.

### Clinical Applications

The Proteus ONE is particularly beneficial for treating tumors located near critical organs, such as those in the brain, spinal cord, and pelvis. It is especially advantageous for pediatric patients or those with complex tumor anatomies due to its precision and reduced risk of collateral damage to healthy tissues.

### Conclusion

The Proteus ONE Proton Therapy System exemplifies the future of cancer treatment through its innovative design, advanced technology, and focus on patient care. As more healthcare facilities adopt this system, it holds the potential to transform the landscape of cancer therapy by providing highly effective treatments with fewer side effects.

## INTERNAL SECURITY

### Pegasus Spyware Case

**WhatsApp** won a lawsuit against **NSO Group Technologies**, the company behind the notorious **Pegasus spyware**. To give you a quick recap, **back in 2019**, the **Israeli company was accused by Meta** of **infecting and surveilling phones** of around **1,400 people** for two weeks.

### What is Pegasus?

- **Pegasus**, also known as **Q Suite**, is a powerful spyware developed by the Israeli company NSO Group.
- It allows law enforcement and **intelligence agencies** to covertly extract data from virtually any mobile device, including WhatsApp chats, SMS, emails, call history, calendar events, browsing history, and stored files.

### How it Infects Devices

- Initially, Pegasus relied on malicious links sent via SMS or WhatsApp messages, requiring users to click to activate the spyware.
- Later, it adopted **network injection** and **zero-day vulnerabilities**, enabling infection without user interaction.
- By 2019, Pegasus could infect devices by simply calling the target's WhatsApp number, even if the call was not answered.

## Pegasus Spyware: How Does It Work?

The Pegasus spyware, which affects Android and iOS operating systems, can be installed without the phone owner ever knowing. It then has access to the phone's files, camera, and microphone, and it can also monitor the location.

### How can Pegasus spyware infect a phone?



### What can Pegasus spyware access?



### Who Can Use Pegasus?

- NSO Group claims Pegasus is sold exclusively to governments for counterterrorism and criminal investigations.
- Its reported clients include **countries like Saudi Arabia, Azerbaijan, India, the UAE**, and even the FBI (though a deal with the US fell apart after scrutiny).

### Why is Pegasus Controversial?

- Despite its intended purpose to combat crime and terrorism, Pegasus has been reportedly misused by governments to surveil journalists, activists, opposition leaders, and dissenters.
- Its ability to infect devices without any user action or leaving digital traces raises significant privacy and ethical concerns.

### Can You Detect Pegasus?

- Detecting Pegasus is extremely difficult. It leaves minimal digital footprints and requires advanced tools for detection.
- Methods like analysing system logs (e.g., Shutdown.log in iOS) or using tools from private security firms may help, but these are not foolproof.

### How to Protect Against Pegasus

- Security firms like **iVerify** offer tools and apps for detecting Pegasus infections.

- Regular scanning and updates, along with security awareness, can provide some protection, but there is no guaranteed method to stay immune from Pegasus.

### Conclusion:

While Pegasus remains one of the **most sophisticated and controversial spyware tools**, its misuse has highlighted the urgent need for stronger cybersecurity measures and accountability for its developers and users.

## GEOGRAPHY

### Tibet Earthquake and Himalayan Seismic Activity

#### News Excerpt

The **7.0 magnitude earthquake** that struck Tibet on January 7, 2025, underscores the seismic vulnerability of the Himalayan region. With 95 fatalities and extensive damage, the event reflects the geological processes that make the Himalayas one of the most earthquake-prone zones globally.

#### How Do Earthquakes Occur?

Earthquakes are caused by movements along faults, which are fractures in the Earth's crust created by tectonic plate interactions.

- The Earth's crust and upper mantle comprise **15 major and minor tectonic plates**.
- These plates constantly move, but friction at their edges causes stress to build up.
- When the stress overcomes friction, the plates slip, releasing energy in seismic waves that result in the ground shaking.

#### Why is the Himalayan Region So Active?

The **Himalayan seismic activity** results from the ongoing collision of the **Indian Plate** and the **Eurasian Plate**:

- **Formation of the Himalayas:**
  - Approximately **40-50 million years ago**, the Indian Plate collided with the Eurasian Plate.
  - Both plates, having similar densities, caused the uplift of land, forming the Himalayan mountain range.
- **Subduction of Plates:**
  - As the collision continues, the Indian Plate slides beneath the Eurasian Plate at a rate of **40-50 mm/year**.
  - This process creates immense stress along fault lines, including the **Main Himalayan Thrust (MHT)**, the primary fault system responsible for Himalayan earthquakes.
- **Complex Tectonic Interactions:**
  - The **Eurasian Plate** is also subducting beneath the **Pamir Mountains** to the northwest.
  - The region's **multiple fault lines** and convergence points amplify seismic risks.

### Past and Recent Earthquake Patterns

- The Himalayan region has experienced **five earthquakes of magnitude greater than 7** since 1950.
- Seismically active areas include the **Hindu Kush** and regions stretching from the western Himalayas to Arunachal Pradesh.

The **7.0 magnitude quake in Tibet** is part of a larger pattern:

- **Historical seismicity:** Over 10 magnitude-6+ earthquakes have occurred in the region over the last century.
- **Seismic gaps:** Certain fault segments have not ruptured in centuries, storing vast amounts of elastic energy.

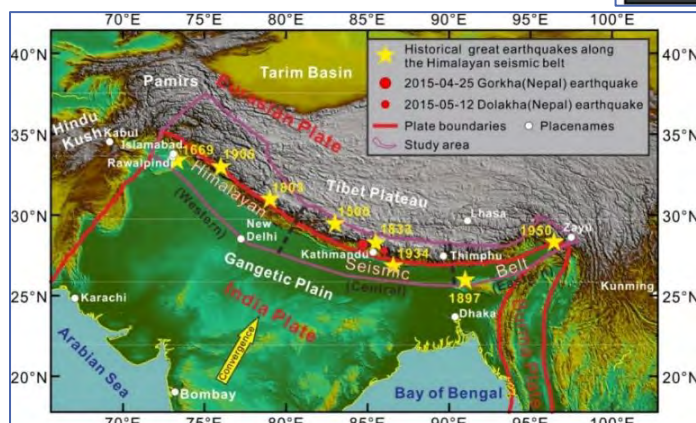
### Threat of a Future "Big One"

Scientists warn that the Himalayas are due for a **major earthquake** (magnitude 8+):

- **Elastic Energy Accumulation:**
  - A **2017 study** noted that most Himalayan earthquakes have not ruptured the surface.
  - Vast "reservoirs" of stored elastic energy are waiting to be released along the fault lines.
- **Potential Damage:**
  - A quake of magnitude 8+ could devastate regions across **2,500 km**, spanning from the **Hindu Kush to Arunachal Pradesh**.
  - The unpredictability of earthquakes and dense population centers increase the risk of catastrophic loss of life and infrastructure.

### Conclusion

- The earthquake in Tibet highlights the fragility of the Himalayan region and the need for preparedness.
- With its **complex tectonic interactions** and **continuous plate movements**, the region remains one of the most seismically active areas in the world.
- As scientists study the underlying processes, investments in **disaster preparedness, early warning systems, and resilient infrastructure** are crucial to mitigate the risks of the next inevitable "Big One."



### Water 'eruption' in Jaisalmer desert

#### News Excerpt

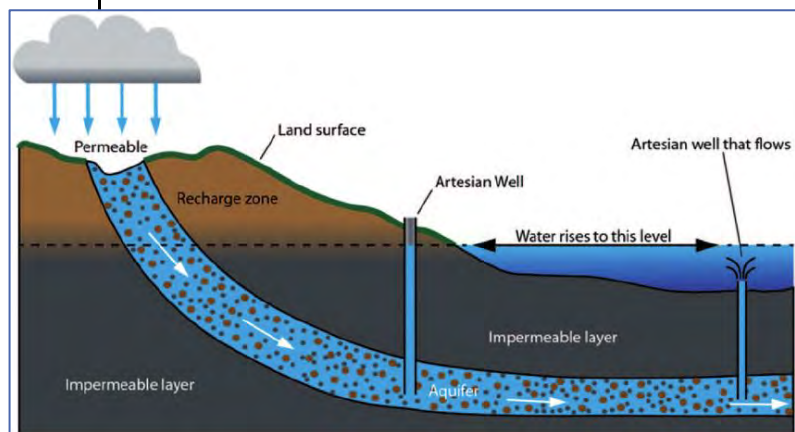
During a **tubewell drilling operation** in the **Mohangarh town in Rajasthan's Jaisalmer**, water started **gushing out of the desert**. However, scientists and senior state officials who have **examined the site** since the incident said **there is a scientific explanation** for **this sudden water spurt**. They pointed at the likely presence of an **"artesian well"**.

#### What is an Artesian Well?

- An **artesian well** is a type of water well where water flows to the surface naturally due to pressure in a confined aquifer.
- **Unlike regular wells** that require pumping, artesian wells rely on hydrostatic pressure created by an impermeable layer of rock or clay that traps water in an underground aquifer. When the aquifer is punctured, the pressure forces the water to the surface.



#### How it Might Have Caused the Jaisalmer Water Eruption



#### Geological Setup:

- **Jaisalmer's geology** is characterized by sandstone formations that can trap water in aquifers.
- The tubewell drilling operation in **Mohangarh town** likely penetrated one of these confined aquifers, breaching its sandstone barrier.

#### Pressure Release:

- At a depth of **850 meters**, drilling likely created an opening for water under pressure to rush out.
- The sudden release resulted in the water gushing to the surface, resembling an eruption.

- **Presence of Gases:**
  - The water eruption also released non-flammable gases, a phenomenon not uncommon in such events.
  - These gases are typically dissolved in the aquifer water and are released when the pressure changes.
- **Duration of Flow:**
  - The water flow continued for **three days**, indicating the size and pressure of the aquifer before it eventually subsided.

### Significance and Future Implications

- **Scientific Surveys:**
  - This event highlights the need for detailed surveys to map **aquifers** in Rajasthan, especially in arid areas like Jaisalmer.
  - The **CSIR NEIST** and other agencies plan to deploy **heliborne surveys** and advanced equipment to detect underground water reserves.
- **Potential for Water Resources:**
  - Artesian wells could provide valuable water sources for Rajasthan, where water scarcity is a perennial issue.
  - Mapping and managing these resources could help in sustainable water management in the region.
- **Safety and Precautions:**
  - While this eruption was not hazardous, similar incidents need careful monitoring, especially if gases are involved.
  - Future drilling operations may require pre-surveys to avoid unintended breaches of aquifers.

### Connection to Saraswati River Mythology

- The initial speculation about the **Saraswati River resurfacing** is unlikely based on scientific explanations. Instead, the event aligns with natural geological processes in the region.
- This incident serves as a **reminder of the hidden potential of underground aquifers** and the importance of scientific exploration to unlock sustainable resources in desert regions.

### Conclusion:

The unexpected water eruption in Jaisalmer underscores the significance of thorough geological surveys and the potential of artesian wells as a sustainable water source in arid regions. Scientifically explained by the region's aquifer dynamics, this event highlights both the natural resources available and the need for cautious management in future drilling endeavors.

## DISASTER MANAGEMENT

### Law to prevent borewell deaths

#### News Excerpt

The **Karnataka Groundwater (Regulation and Control of Development and Management) (Amendment) Bill, 2024**, was passed to address the growing problem of open borewells, which pose serious safety hazards, especially to children. This law introduces stringent measures to prevent accidents and ensure abandoned borewells are properly sealed.

#### What are Open Borewells?

Borewells are narrow shafts drilled into the ground to access underground water.

- **Introduced in the 1970s** to address water scarcity.
- **27 million borewells in India** (NDRF, 2019), many abandoned due to drying water sources.
- Abandoned borewells often become **death holes** — uncovered, they pose a serious risk to human life.

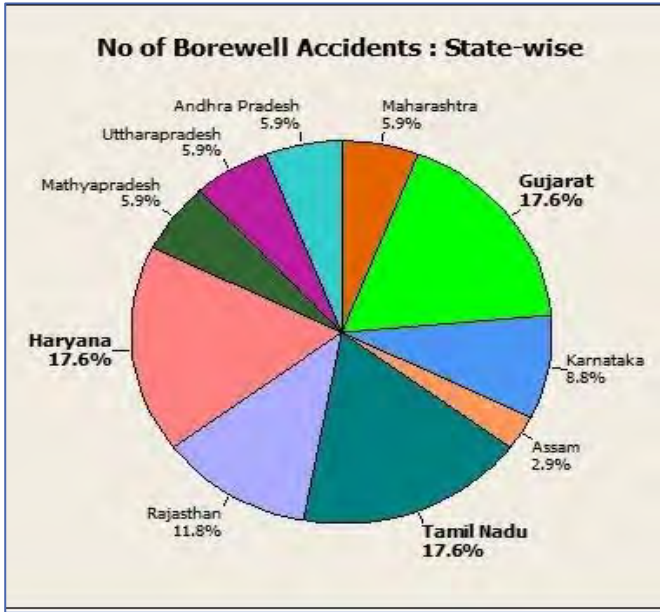
#### Why Are Open Borewells a Concern?

- **Frequent Accidents:**
  - From 2009 to 2019, over **40 children** fell into borewells in India.
  - Fatalities are high due to difficult and time-consuming rescue operations.
- **Karnataka's Situation:**
  - Karnataka reported **8.8% of India's borewell accidents** during this period.
  - High failure rate in rescue operations (70%) and expensive costs (**₹50 lakh–₹1 crore per operation**).
- **States with High Incidence:**
  - Haryana, Tamil Nadu, and Gujarat reported the highest number of accidents (17.6% each).

#### Key Provisions of Karnataka's New Law

- **Mandatory Sealing of Borewells:**
  - Abandoned borewells must be properly sealed.
  - Violations invite **₹25,000 penalty** and **one-year imprisonment**.
- **Signboards and Fencing:**
  - Drilling agencies must install signboards at borewell sites with their details.
  - Borewells must be fenced with barbed wire or thorny plants to prevent unauthorized access.
- **Immediate Capping:**
  - Newly drilled borewells must be capped using steel or threaded caps as soon as drilling is complete.
- **Closure of Failed Borewells:**
  - Failed or incomplete borewells must be closed within **24 hours** using locally available materials like stones and slurry.
  - A **2×2 feet mound** should be built over the closed borewell and fenced.
- **Reporting and Certification:**
  - Drilling agencies must report the closure to local authorities with photographic evidence.

- Authorities will inspect the site and issue a **closure certificate** to ensure compliance.



**Why This Law is Needed**

- **Preventing Tragic Deaths:**
  - Open borewells have caused numerous fatalities, particularly among children.
- **Addressing Negligence:**
  - Many borewells are left uncovered or improperly sealed due to a lack of enforcement.
- **Enhancing Accountability:**
  - Holding drilling agencies responsible for safety measures ensures better compliance.
- **Reducing Rescue Costs:**
  - Properly sealing borewells eliminates the need for expensive and often unsuccessful rescue operations.

**Conclusion**

- The **Karnataka government's new law** represents a significant step toward addressing the dangers posed by **open borewells**.
- By mandating strict safety measures, **penalizing negligence**, and involving local authorities in monitoring and certification, the law aims to save lives and reduce accidents.
- If effectively implemented, it could serve as a **model for other states** to ensure public safety around borewell sites.

**ART & CULTURE**

**Restoration of Jahaz Haveli**

**News Excerpt**

The Punjab government has pledged its support for restoring **Jahaz Haveli**, the historic residence of **Diwan Todar Mal**, in Sirhind, Fatehgarh Sahib district. This initiative highlights Todar Mal's extraordinary courage and sacrifice

for the Sikh community, particularly in connection with the martyrdom of the two younger sons of **Guru Gobind Singh**.

**Who Was Diwan Todar Mal?**

Diwan Todar Mal was a **wealthy merchant** and revenue official from Sirhind. Despite the oppressive rule of **Wazir Khan**, the Mughal governor of Sirhind, Todar Mal demonstrated exceptional bravery:

- **Claiming the Bodies:** After **Sahibzada Fateh Singh (9)** and **Sahibzada Zorawar Singh (7)** were **bricked alive** on Wazir Khan's orders, fear of retribution deterred others from performing their last rites.
  - Todar Mal stepped forward to claim the bodies of the Sahibzadas and their grandmother, **Mata Gujri**, who had died of shock after learning of their deaths.
- **Unprecedented Sacrifice:**
  - Wazir Khan demanded Todar Mal buy the cremation land by covering it with **gold coins placed vertically**.
  - Todar Mal agreed, spending a fortune in what is considered one of the costliest land purchases of the era.
  - He then cremated the bodies with full honors and buried their ashes on the purchased land.
- **Legacy:**
  - His selfless act has cemented his place in Sikh history as a symbol of courage, devotion, and humanity.

**The Martyrdom of Sahibzadas: A Tragic Chapter in Sikh History**

**Why Were the Sahibzadas Executed?**

- The two younger Sahibzadas, along with their grandmother Mata Gujri, were captured after being separated from **Guru Gobind Singh**.
- Wazir Khan pressured the boys to **convert to Islam** with offers of wealth and power.
- When they refused, they were sentenced to death and **bricked alive** on **13 December 1704**.

**Different Accounts of Their Capture:**

1. **Koer Singh's Gurbilas Patshahi Dasveen (1751):**
  - Mata Gujri and the Sahibzadas were found in Chamkaur Garhi and taken to Sirhind by Mughal soldiers.
2. **Rattan Singh Bhangu's Panth Prakash (1810):**
  - They were betrayed by a cook and handed over to Wazir Khan by local villagers.

**Aftermath:**

- The Sahibzadas' martyrdom caused widespread outrage.
- Six years later, **Baba Banda Singh Bahadur** avenged their deaths by defeating Wazir Khan in the **Battle of Chappar Chiri (1710)**.





### Jahaz Haveli: Historical and Cultural Significance

- **Architecture:**  
Built in the 17th century, Jahaz Haveli is constructed with **Nanakshahi bricks** and resembles a ship, hence the name.
- **Preservation Efforts:**
  - Over the years, the haveli fell into disrepair, despite its historic significance.
  - In **2009**, the Shiromani Gurdwara Parbandhak Committee (SGPC) took charge of the site.
  - The **Diwan Todar Mal Heritage Foundation Punjab** is now leading efforts to restore the haveli to its original grandeur, guided by a **1911 photograph from the British Library**.
- **Government Support:**
  - Punjab Assembly Speaker Kultar Singh Sandhwan announced collaboration between the state government, SGPC, and the **Tourism and Archaeology Department** for its restoration.
  - In 2021, the road connecting Jahaz Haveli to the main road was renamed **Diwan Todar Mal Marg**.

### Commemoration of Sahibzadas' Martyrdom

- **Shaheedi Jor Mela:** Held annually from **25 to 27 December**, this event in Fatehgarh Sahib honors the sacrifices of the Sahibzadas and Mata Gujri.
- **Veer Baal Diwas:** In **2022**, the Government of India declared **26 December** as "Veer Baal Diwas" to commemorate the bravery and martyrdom of the Sahibzadas.
- **Historical Calendar Confusion:**
  - The dates of their martyrdom vary in historical records due to differences between the **lunar calendar** used during their time and the **Gregorian calendar**.

### Conclusion

- The story of Diwan Todar Mal and the Sahibzadas embodies the values of **courage, sacrifice, and devotion**.

- The **restoration of Jahaz Haveli** is not just an architectural project but also a tribute to their enduring legacy.
- As Fatehgarh Sahib prepares for the annual **Shaheedi Jor Mela**, these efforts ensure that future generations remember this significant chapter in Sikh history.

## Katra Ropeway to Vaishno Devi

### News Excerpt

The proposed **Katra-Sanjichhat ropeway project**, intended to facilitate the journey to the Shri Mata Vaishno Devi shrine, has sparked protests in Katra, led by traders, workers, and local unions. These stakeholders argue that the project threatens their livelihoods and disrupts the region's socio-economic fabric.

### The Katra-Sanjichhat Ropeway Project

- **Purpose:**
  - To reduce the time required to traverse the 14-km trek to Vaishno Devi.
  - The ropeway will cut travel time from 6–7 hours on foot to about **6 minutes by ropeway** and a subsequent 30–45-minute walk to the shrine.
  - Aimed at enhancing accessibility, especially for senior citizens and those with medical conditions, and accommodating the ever-growing number of pilgrims.
- **Specifications:**
  - Cost: ₹300 crore, executed in a **Public-Private Partnership (PPP)** model.
  - Deadline: December 2026.
  - Capacity: 1,000 passengers per hour.
- **Current Footfall:**
  - Over **95 lakh pilgrims visited in 2023**, with projections exceeding one crore in 2024.

### Who is Opposing the Project?

- **Local Business Owners:**
  - Shopkeepers and hoteliers in **Katra** and **Ban Ganga** depend on the foot traffic of pilgrims for their livelihoods.
  - Concerns: Reduced footfall on the traditional trekking route may lead to a drop in sales.
- **Workers and Service Providers:**
  - Pony operators, porters (**pithus**), and palanquin providers rely on the trekking route for income.
  - They argue that the ropeway will directly displace their businesses.
- **Political Opposition:**
  - **Mehbooba Mufti**, leader of the J&K Peoples Democratic Party (PDP), met protesters and criticized the project for prioritizing tourism over religious sanctity and local livelihoods.

### Protesters' Demands

- Immediate shelving of the ropeway project.
- Comprehensive dialogue with local stakeholders before proceeding further.

### Arguments in Favor of the Ropeway

- **Enhanced Pilgrimage Experience:**
  - Provides stunning views of the Trikuta Hills and reduces physical strain on pilgrims.
- **Accessibility and Safety:**
  - Helps senior citizens, differently-abled persons, and those with health issues access the shrine more easily.
- **Economic Boost:**
  - Officials argue the ropeway will attract more pilgrims, indirectly increasing tourism revenue and creating new job opportunities.

### Shrine Board's Response to Protests

- The **Shri Mata Vaishno Devi Shrine Board** has assured that the concerns of local stakeholders will be addressed.
- The board emphasized the potential for increased visitor numbers and the subsequent rise in business opportunities.

### Broader Context of the Protests

- **Economic Dependence on Pilgrimage:**
  - Katra's economy revolves around pilgrimage-related activities, and any disruption to this ecosystem risks affecting over **60,000 families**.
- **Religious and Cultural Concerns:**
  - Critics argue that the project prioritizes tourism over the spiritual and cultural essence of the yatra.
- **Shrine Board's Modernization Efforts:**
  - Since the board's establishment in 1986, infrastructure improvements have boosted annual pilgrim numbers from **13 lakh to over one crore**.
  - However, these efforts have also led to commercialization, raising concerns about preserving traditional practices.

### Conclusion

- The proposed Katra ropeway project has ignited a conflict between modernization and the preservation of traditional livelihoods.
- While the ropeway promises greater accessibility and a streamlined pilgrimage, the economic and cultural concerns of local communities need careful consideration.
- The protests reflect the tension between development and safeguarding the socio-economic interests of stakeholders who rely on the pilgrimage ecosystem.

## Promoting winter Char Dham Yatra

### News Excerpt

The **Uttarakhand government** inaugurated the **winter Char Dham circuit**, aimed at **drawing tourists to the state** in the **off-season winter months**.

### What is the Winter Char Dham?

- The **Winter Char Dham** refers to the off-season pilgrimage to the winter abodes of the deities from Uttarakhand's revered Hindu shrines — Gangotri, Yamunotri, Kedarnath, and Badrinath.
- These shrines, collectively known as the **Char Dham**, are inaccessible in winter due to heavy snowfall. During this period, the presiding deities are ceremonially moved to **lower-altitude temples** where pilgrims can worship.
- **Winter Abodes of the Char Dham:**
  - **Gangotri:** Mukhba (Uttarkashi)
  - **Yamunotri:** Kharsali (Uttarkashi)
  - **Kedarnath:** Omkareshwar Temple (Ukhimath, Rudraprayag)
  - **Badrinath:** Pandukeshwar (Chamoli)



### Why is the Uttarakhand Government Promoting Winter Char Dham?

#### Economic Potential

- **Year-round tourism:** The Char Dham pilgrimage is a major contributor to Uttarakhand's economy, generating over **₹200 crore daily** during the main season. Promoting winter tourism can sustain economic activity during the off-season.
- **Tourism diversification:** With initiatives like "**sun tourism**", the state aims to attract visitors to experience clear skies, serene landscapes, and cultural heritage during the winter months.

#### Changing Perceptions

- Uttarakhand is traditionally seen as a summer destination. By promoting the winter Char Dham, the state seeks to establish itself as an **all-season tourism hub**.

#### Boosting Lesser-Known Destinations

- The initiative encourages exploration of areas around the winter abodes, which can benefit **local communities** and reduce over-reliance on summer tourism.

#### Concerns and Challenges

##### Environmental Impact

- **Fragile ecosystems:** Increased winter traffic may disturb wildlife like snow leopards and mountain sheep, which descend to lower altitudes for food during winter.

- **Infrastructure strain:** The growing footfall could lead to overcrowding and stress on local resources in fragile mountain environments.

**Safety and Accessibility**

- Harsh weather conditions in the Himalayas during winter pose risks to pilgrims. Adequate **safety measures** and infrastructure improvements are essential to ensure a secure experience.

**Sustainability**

- **Over-commercialization:** Environmentalists warn against excessive focus on record-breaking visitor numbers, which may degrade the sanctity and natural beauty of these sacred sites.

**Carrying Capacity Studies**

- The **National Green Tribunal (NGT)** has directed Uttarakhand to assess the carrying capacity of the Char Dham pilgrimage sites. A report by the **Wildlife Institute of India** on this matter is pending.

**Future Implications**

1. **Enhanced Pilgrim Experience:** Improved infrastructure and promotion of winter tourism can make the Char Dham accessible year-round while boosting local economies.
2. **Balancing Tourism and Ecology:** Sustainable tourism practices, such as capping visitor numbers and environmental management, can help preserve Uttarakhand's ecological balance.
3. **Cultural Preservation:** The winter Char Dham provides an opportunity to highlight Uttarakhand's **spiritual heritage**, fostering cultural pride and awareness.

**Landmarks of Manmohan Singh's Journey**

**News Excerpt**

Manmohan Singh's illustrious career spans diverse roles—economist, bureaucrat, finance minister, and **Prime Minister**. His journey is marked by **transformative events** that have left an indelible impact on India's trajectory. Here are **pivotal moments** from his career:

**The 1991 Liberalisation Efforts**

As Finance Minister under Prime Minister P.V. Narasimha Rao, Manmohan Singh spearheaded economic reforms to address India's severe balance of payments crisis. With foreign exchange reserves depleted, Singh implemented structural reforms through the 1991 Budget:

- **Key Measures:**
  - Ended the License Raj, reducing bureaucratic hurdles for businesses.

- Lowered tariffs and opened the economy to private and foreign investment.
- Introduced liberalisation, privatisation, and globalisation policies.
- **Impact:** These reforms transformed India's economy, setting it on a path of sustained growth despite criticism from the Left for embracing neoliberal policies.

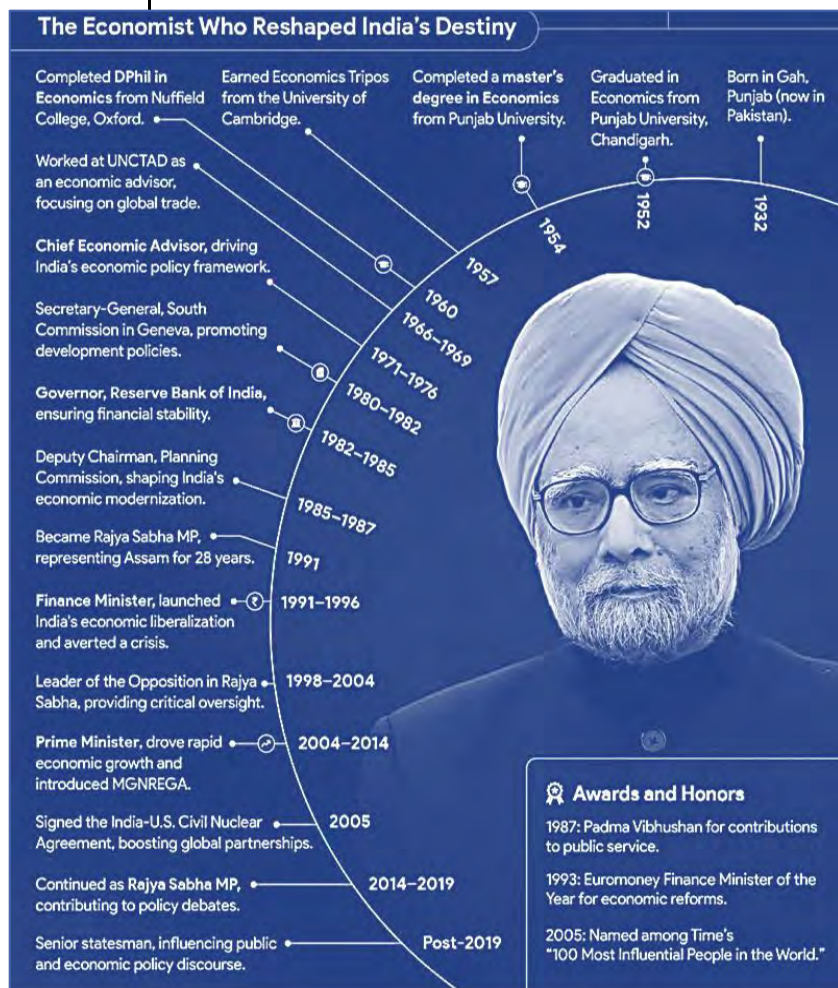
**The Indo-US Nuclear Deal**

During his first term as Prime Minister (2004–2009), Singh took a bold stand to secure the **Indo-US civil nuclear deal**, even risking his government's survival.

- **Challenges:**
  - Opposition from Left parties, who withdrew their support, and criticism from the BJP.
  - Survived a no-confidence motion in Parliament.
- **Outcomes:**
  - Gained approval from the International Atomic Energy Agency (IAEA) and an India-specific waiver from the Nuclear Suppliers Group (NSG).
  - Signed the deal on October 10, 2008, granting India access to civilian nuclear technology and fuel.

**Landmark Social Legislation**

Singh's tenure saw the passage of several laws aimed at empowering citizens:



- **Right to Information (RTI) Act (2005):** Ensured transparency and accountability by granting citizens the right to access information from public authorities.
- **Mahatma Gandhi National Rural Employment Guarantee Act (MNREGA) (2006):** Provided 100 days of guaranteed employment annually to rural households.
- **Right to Education (RTE) Act (2009):** Mandated free and compulsory education for children aged 6 to 14.
- **National Food Security Act (2013):** Ensured subsidised food grains for 75% of rural and 50% of urban populations.

### Steering India Through the 2008 Global Financial Crisis

Singh's leadership helped India navigate the global economic downturn of 2008:

- **Government Measures:**
  - Announced stimulus packages worth ₹1.86 lakh crore (3.5% of GDP).
  - Fiscal deficit rose to 6% of GDP (from 2.7% in the previous year).
- **RBI Interventions:**
  - Released ₹5.6 lakh crore (9% of GDP) in domestic and external liquidity.
- **Impact:**
  - Economy rebounded to 8.5% growth in 2009-10 after a dip to 6.7% in 2008-09.

### Advocacy for Minority Empowerment

Singh championed policies for the upliftment of minorities, particularly Muslims:

- **Committees:**
  - **Sachar Committee (2006):** Recommended developmental policies for Muslims.
  - **Ranganath Mishra Committee:** Advocated for SC status to be religion-neutral, allowing Dalit converts to Islam and Christianity access to reservation benefits.
- **Commitment:** Singh stated that minorities, especially Muslims, "must have the first claim on resources" to ensure equitable development.

### Legacy

- Manmohan Singh's contributions have been transformative, shaping India's economic policies, fostering transparency, and advocating for inclusive development.
- While his decisions were often met with resistance, they underscored his vision for a modern, equitable India.

## Preserving Heritage: The Art of Silver Nagra Craftsmanship

### News Excerpt

In the vibrant, historic lanes of old Lucknow, an ancient craft battles for survival amidst modern shifts and challenges. Mohammed Hussain, a dedicated craftsman of silver nagras, stands as one of the last torchbearers of a five-generational

legacy. This age-old artisanal tradition, once catering exclusively to the Nawabs and aristocrats, still finds life through Hussain's skilled hands and unwavering dedication.

### Historical Roots and Cultural Significance

**Silver nagras** are an intrinsic part of Lucknow's rich cultural and historical tapestry. These elegant, handcrafted shoes have been a symbol of sophistication and wealth in Mughal courtly life.

Hussain's (an artist) lineage traces back to Iran, with his ancestors settling first in Amroha before moving to Lucknow. "Our craft was exclusive to the royal and noble families in Lucknow," Hussain recalls, underlining the heritage that his family has carried through generations.

### The Artful Craft of Silver Nagra Making

Creating silver nagras is a detailed and meticulous process, encapsulating both artistic creativity and precision.

- **Material Procurement and Preparation:**
  - Silver is purchased and melted to form malleable sheets.
  - These sheets are then skillfully cut according to specific designs, an art form passed down through generations.
- **Design and Engraving:**
  - The craftsmanship involves intricate engravings, followed by assembly and final shaping.
  - Each pair takes approximately 8-10 days to complete, depending on the complexity of the design.
- **Flexibility and Customization:**
  - While the artisans create traditional designs, they also accommodate unique client requests, merging traditional essence with contemporary aesthetics.
- **Economic Aspects:**
  - The cost of silver nagras ranges from Rs 15,000 to over Rs 30,000, influenced by the fluctuating price of silver and the intricacy of the work.
  - Beyond footwear, the craftsmanship extends to engravings and sculptures, showcasing the versatility of these artisans.

### Challenges and Transformations

Over time, the market for silver nagras has faced significant transformations.

- **Inconsistency in Demand:** The irregularity of orders poses financial challenges. When work is plentiful, there are fewer issues, but during downtimes, sustaining livelihood becomes difficult.
- **Modern Market Dynamics:** With the advent of mass-produced alternatives and changing fashion trends, traditional crafts risk being overshadowed.

Despite these challenges, Hussain remains optimistic. He notes a renewed interest in artisanal crafts over the past decade, suggesting potential for reviving this heritage art through increased visibility and awareness.



### The Path to Revival: Education and Publicity

For traditional crafts like silver nagra making to thrive, increased public awareness and appreciation are crucial. Hussain emphatically advocates for:

- **Educational Initiatives:**
  - Promoting the craft through workshops and apprenticeships can inspire the younger generation to learn and preserve these skills.
- **Publicity and Social Media Engagement:**
  - Featuring crafts in media outlets and social platforms can enhance visibility, potentially leading to increased demand and preservation of the craft.

### A Personal and Cultural Mission

For Mohammed Hussain, silver nagra craftsmanship is a commitment beyond economic sustenance. It is **a tribute to his family's rich legacy and a vital part of India's tangible cultural heritage.**

He appeals to the younger generation, emphasizing the cultural loss occurring with vanishing crafts. "These arts must survive because they are part of India's heritage. Many of these crafts are disappearing. Those few of us who remain must work to keep them alive," he passionately insists.

### Conclusion

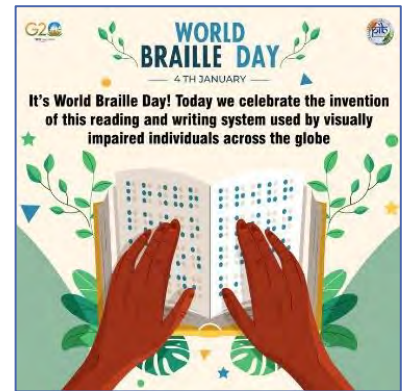
Mohammed Hussain's journey exemplifies the resilience needed to preserve traditional craftsmanship in a rapidly changing world. Silver nagras are not just footwear; they are a representation of cultural identity, history, and artistry. As we move forward, it becomes crucial to support and encourage such crafts, ensuring they continue to enrich the cultural fabric of India. Through concerted efforts in education, promotion, and community engagement, traditional arts can not only survive but flourish, maintaining their rightful place in the narrative of India's heritage.

## World Braille Day

### News Excerpt

**World Braille Day**, observed

on **4 January 2025**, celebrates the birth anniversary of **Louis Braille**, the inventor of the tactile reading and writing system that revolutionized access to education and communication for visually impaired individuals worldwide.



### What Is Braille?

Braille is a tactile **code system** that uses **raised dots** to represent letters, numbers, punctuation marks, and even entire words. It allows visually impaired individuals to read and write using their sense of touch.

- **Structure of Braille:** Braille is based on **braille cells**, each consisting of six raised dots arranged in two parallel columns of three dots each. This configuration allows for **64 unique combinations** of dots and spaces, enabling the representation of various characters.
- **Braille Across Languages:** Different languages and regions have their own **braille codes**, with adaptations to fit local scripts and phonetics. For instance, India uses the **Bharati Braille system**, developed in the 1950s to unify braille scripts across multiple Indian languages.
- **Extended Versions:** Some versions of braille use **eight-dot cells**, enabling up to **255 combinations**, which expands the range of symbols, especially for technical and computer-based applications.

### How Is Braille Written?

- **Traditional Methods:**
  - **Slate and Stylus:** A slate provides a grid of depressions for forming braille dots, while a stylus creates indentations, resulting in raised dots on the reverse side of the paper.
  - **Braillewriters:** Similar to typewriters, braillewriters have six keys corresponding to the six dots in a braille cell, along with a space bar and other functions.
- **Modern Technology:**
  - **Braille Embossers:** These function like printers but produce raised braille dots on paper.
  - **Digital Devices:** Portable devices allow users to type and read braille electronically, often translating standard text into braille.
  - **Adaptive Keyboards:** These enable typing in standard alphabets, which can then be converted into braille for printing.

### The Invention of Braille

The origins of braille trace back to **19th-century France**.

- **Charles Barbier's Night Writing:**
  - Barbier, a former artillery captain, created a **12-dot system** called "night writing" to help soldiers communicate silently at night.
  - However, the system was cumbersome as human fingers found it difficult to read 12 dots simultaneously.
- **Louis Braille's Adaptation:**
  - **Louis Braille**, born in 1809 near Paris, lost his vision at the age of three. Despite his disability, he excelled in academics and music.
  - At age 15, he adapted Barbier's system, simplifying it to a **six-dot configuration** that could be easily read by touch.
  - Braille's system was initially designed for **musical notation** but soon expanded to include letters, numbers, and punctuation.
- **Refinements and Global Adoption:**
  - In **1837**, Braille published a three-volume history textbook in his system, marking the first major success of the tactile script.
  - Over time, the braille code evolved to include **contractions** and **refinements**, making it adaptable to over **133 languages** as of the latest compilation in **2013**.

**Significance of Braille**

- **Educational Access:** Braille empowers visually impaired individuals to engage with literature, science, and the arts, opening up opportunities for education and employment.
- **Global Usage:** Braille continues to play a vital role in inclusivity, especially with technological advancements integrating tactile and auditory cues.

**Conclusion**

- **World Braille Day** honors Louis Braille's groundbreaking invention and underscores the importance of accessibility in creating an inclusive society.
- As technology advances, braille remains a cornerstone of empowerment for visually impaired individuals, ensuring they can read, write, and thrive in every aspect of life.

**GOVERNMENT SCHEMES**

**'BHARATPOL' Portal launched**

**News excerpt**

Union Home Minister **Amit Shah** unveiled the **BHARATPOL** portal, a cutting-edge platform developed by the **Central Bureau of Investigation (CBI)** to enhance coordination between Indian law enforcement agencies and Interpol. The portal aims to provide **real-time assistance** for tackling transnational crimes and locating fugitives.

### New platform for police assistance

Union home minister Amit Shah on Tuesday launched the Bharatpol portal to facilitate faster international assistance for agencies and speed up investigations

**BHARATPOL**  
Broadcast Hub for Assistance and Real-Time Action against Transnational Crimes via International Police Cooperation

**WHAT IS IT?**  
A platform which integrates CBI (which is the National Central Bureau or nodal agency of Interpol in India) with state law enforcement agencies and the Centre, for sharing information on fugitives, criminal matters and processing requests for Interpol notices

**WHAT CHANGES?**  
Earlier, states/UTs' police used to write to CBI and any queries were replied to through letters. The portal, available on CBI website, will allow frontline police officers to easily and promptly request international assistance from 195 Interpol member countries using standardised templates.

**THINGS OF NOTE**

- The entire process will become paperless and faster now
- It will enable easy drafting of Red Notice requests and other notices of Interpol
- It will provide access to documents, templates, and training resources, enhancing the capability of frontline officers to conduct probes

**FIVE MODULES**

**Connect:** Links CBI with all law enforcement authorities in India by including Interpol Liaison Officers and Unit officers

**Interpol notices:** Rapid, secure and structured transmission of requests for Interpol notices

**Interpol references:** Facilitates assistance to Indian agencies in criminal matters and investigation abroad through Interpol channels

**Broadcast:** Requests from 195 countries for assistance in criminal intelligence shared by them can be transmitted for action to Indian law enforcement agencies

**Resources:** Provides access to relevant documents and capacity building resources

**Key Features of BHARATPOL**

- **Real-Time Interface:**
  - Enables seamless communication between **central and state law enforcement agencies** and Interpol's **195 member nations**.
  - Facilitates faster exchange of information, expediting investigations and fugitive tracking.
- **Advanced International Collaboration:**
  - Supports sharing and obtaining information on fugitives, organized crimes, cybercrimes, financial crimes, human trafficking, and drug trafficking.
  - Allows law enforcement agencies to request Interpol's **Red Notices** and other color-coded notices more efficiently.
- **Streamlined Operations:**
  - Replaces traditional reliance on letters, emails, and faxes with a **unified online platform**.
  - Links Interpol Liaison Officers (ILOs) and Unit Officers (UOs) from various law enforcement agencies for coordinated action.

**Significance of the Initiative**

- **Modernizing Crime Investigation:**
  - Amit Shah emphasized the use of **modern technology** to combat transnational crimes and apprehend fugitives.
  - Highlights the **CBI's pivotal role** in capacity-building and training state-level agencies in utilizing the BHARATPOL platform.
- **Legal Framework:**
  - The **three new criminal laws**, enacted last year, permit trials in **absentia for fugitives**, enabling expedited justice.
  - BHARATPOL aligns with these laws, ensuring global coordination in criminal investigations.
- **Enhanced Efficiency:**

- Reduces avoidable delays in issuing notices and processing international assistance requests.
- Facilitates quicker extraditions and repatriations of fugitives.

### Impact of BHARATPOL

- Since 2021, **100 wanted criminals** have returned to India through Interpol coordination, including **26 in 2024**.
- BHARATPOL is expected to significantly increase this number, bolstering India's ability to combat transnational crimes.

### Event Highlights

- Amit Shah also presented **Police Medals** to **35 CBI officers**, recognizing their distinguished service and investigative excellence.
- The Home Minister reiterated the need for continuous training in utilizing Interpol's procedures and systems.

### Conclusion

- The launch of BHARATPOL underscores India's commitment to **modernizing law enforcement** and addressing global challenges in crime investigation.
- By enabling swift and efficient coordination with Interpol, the portal is set to become a cornerstone in tackling transnational crimes and ensuring justice.

## 'Jalvahak' Initiative for Inland Waterways in India

### News excerpt

On **December 15, 2024**, the Indian government unveiled a significant policy initiative named '**Jalvahak**' aimed at **promoting cargo transport via the country's extensive network of inland waterways**.

This initiative is expected to **enhance trade, reduce congestion on railways and roads**, and provide an economical and environmentally sustainable mode of transportation. The launch of this scheme marks a pivotal moment in India's efforts to **revitalize its waterways and unlock their potential for economic growth**.

### Background of Inland Waterways in India

India possesses a vast network of inland waterways, including rivers, canals, backwaters, and creeks, totaling approximately **20,236 km** of navigable routes. Among these, **17,980 km** are rivers suitable for mechanized craft.

- Despite this potential, freight transportation via waterways has historically been underutilized compared to global standards, particularly when compared to countries like the United States and China.
- The government recognizes that enhancing the use of these waterways can significantly contribute to the logistics sector and overall economic development. The '**Jalvahak**' initiative is part of a broader strategy to promote sustainable transport solutions while

addressing the challenges posed by over-reliance on road and rail networks.



### Key Features of the 'Jalvahak' Scheme

- **Incentives for Cargo Movement:** The 'Jalvahak' scheme incentivizes the movement of long-haul cargo on **National Waterways 1 (Ganga), National Waterways 2 (Brahmaputra), and National Waterways 16 (Barak)**. It aims to shift **800 million tonne-kilometers** of cargo transport from traditional modes to inland waterways through an investment of ₹95.4 crores.
- **Scheduled Cargo Services:** The initiative includes the commencement of fixed scheduled services for cargo vessels. For instance, vessels will operate between Kolkata and Patna, Varanasi, and Pandu (Guwahati), demonstrating the readiness of these waterways for efficient cargo transport.
- **Financial Incentives:** The scheme offers reimbursement of up to **35%** of total operating expenses incurred while transporting cargo over distances exceeding **300 km** via inland waterways. This financial support is designed to encourage businesses to opt for waterway transport.
- **Environmental Sustainability:** By promoting waterway transport, the government aims to reduce carbon emissions associated with road and rail transport, contributing to environmental sustainability goals.
- **Operational Efficiency:** The scheduled sailing service is expected to ensure timely delivery of goods, instilling confidence among users regarding the reliability of inland waterway transport.

### Government Statements and Vision

Union Minister for Ports, Shipping & Waterways, **Shri Sarbananda Sonowal**, emphasized the transformative potential of this initiative under Prime Minister **Narendra Modi's** leadership.

He highlighted that this initiative aligns with the Prime Minister's vision for a "**Viksit Bharat**" (**Developed India**) by **enhancing transportation infrastructure**.

Expected Impact on Trade and Economy

The 'Jalvahak' scheme is anticipated to have several positive impacts:

- **Decongestion of Roads and Railways:** By shifting cargo movement from roads and railways to waterways, the initiative aims to alleviate traffic congestion and reduce wear and tear on existing infrastructure.
- **Cost-Effective Transportation:** Waterway transport is generally more economical than road or rail transport due to lower fuel consumption per ton-kilometer. This cost-effectiveness can benefit businesses by reducing logistics costs.
- **Boosting Local Economies:** Improved connectivity through inland waterways can lead to enhanced trade opportunities for local businesses along these routes, fostering economic growth in rural areas.
- **Job Creation:** As cargo movement increases via waterways, there will be a corresponding demand for jobs in logistics, shipping, and related sectors.

#### Challenges Ahead:

Despite its potential benefits, several challenges must be addressed for successful implementation:

- **Infrastructure Development:** Significant investment in infrastructure such as terminals, loading/unloading facilities, and navigational aids will be necessary to support increased waterway traffic.
- **Awareness and Training:** There is a need for awareness campaigns among businesses regarding the benefits of waterway transport as well as training programs for personnel involved in logistics operations.
- **Regulatory Framework:** Establishing a robust regulatory framework that ensures safety standards and operational efficiency will be crucial for sustaining growth in this sector.

#### Conclusion:

The launch of the 'Jalvahak' initiative represents a significant step towards revitalizing India's inland waterways as a viable mode of transportation for cargo movement. By incentivizing this shift through financial support and operational enhancements, the Indian government aims not only to improve logistical efficiency but also to contribute positively towards environmental sustainability goals. With focused development strategies in place, India's national waterways could become a lifeline for trade and commerce in the years ahead.

## Credit Guarantee Scheme for e-NWR Based Pledge Financing (CGS-NPF)

### News excerpt

The Union Minister of Consumer Affairs, Food and Public Distribution, **Shri Pralhad Joshi**, launched the **Credit Guarantee Scheme for e-NWR based Pledge Financing (CGS-NPF)** in New Delhi.

This initiative aims to **enhance post-harvest financing for farmers by providing a financial safety net against electronic negotiable warehouse receipts (e-NWRs)**. With a corpus of ₹1,000 crores, the scheme is designed to **minimize distress selling** among farmers and promote food security in India.

#### Background of the Scheme

The agricultural sector in India faces numerous challenges, particularly during the post-harvest phase when farmers often resort to distress selling due to inadequate access to credit.

The CGS-NPF scheme addresses this issue by allowing farmers to obtain loans against e-NWRs after depositing their commodities in Warehousing Development and Regulatory Authority (WDRA) accredited warehouses. By offering a credit guarantee, the government aims to instill confidence in banks and encourage them to extend pledge financing to farmers.

#### Key Features of the CGS-NPF Scheme

- **Total Corpus:** The scheme has been allocated a corpus of ₹1,000 crores specifically for post-harvest financing.
- **Loan Coverage:**
  1. Loans up to ₹75 lakhs for agricultural purposes.
  2. Loans up to ₹200 lakhs for non-agricultural purposes.
- **Eligible Institutions:** All scheduled banks and cooperative banks can participate in this scheme.
- **Eligible Borrowers:** The scheme primarily targets:
  1. Small and Marginal Farmers (SMFs)
  2. Women farmers
  3. SC/ST/PwD farmers
  4. Other farmers
  5. Micro, Small, and Medium Enterprises (MSMEs)
  6. Traders
  7. Farmer Producer Organizations (FPOs)
- **Risks Covered:** The scheme covers both credit risk and warehouseman risk, providing a comprehensive safety net for lenders.
- **Guarantee Fee:**
  1. 0.4% per annum for farmers.
  2. 1% per annum for non-farmers.
- **Guarantee Coverage:**
  1. 85% coverage for loans up to ₹3 lakhs.
  2. 80% coverage for loans between ₹3 lakhs and ₹75 lakhs for small and marginal farmers/women/SC/ST/PwD.
  3. 75% coverage for other borrowers.
- **Claim Settlement:** Claims are settled in two installments based on the default amount:
  1. For loans up to ₹75 lakhs: 75% in the first installment and 25% in the second.
  2. For loans above ₹75 lakhs and up to ₹2 crores: 60% in the first installment and 40% in the second.



## Objectives of the CGS-NPF Scheme

The primary objectives of the CGS-NPF scheme include:

- **Minimizing Distress Selling:** By providing timely access to finance, the scheme aims to reduce the pressure on farmers to sell their produce at lower prices during harvest seasons.
- **Enhancing Food Security:** Improved access to credit will enable farmers to manage their produce better, contributing positively to food security in India.
- **Encouraging Bank Participation:** The credit guarantee is designed to encourage banks to adopt a more liberal approach towards lending against e-NWRs, thereby increasing financial inclusion among farmers.
- **Supporting Vulnerable Groups:** The scheme specifically focuses on empowering small and marginal farmers, women, SC/ST communities, and differently-abled farmers by providing them with easier access to finance.

## Government Statements

During the launch event, Minister Pralhad Joshi emphasized the importance of this initiative in promoting farmer welfare. He urged banks to adopt a more supportive stance towards farmers when settling loan amounts related to e-NWR receipts.

## Expected Impact

The CGS-NPF scheme is expected to have several positive impacts:

- **Increased Access to Finance:** By reducing risks associated with lending, more banks are likely to provide loans against e-NWRs, enhancing financial access for farmers.
- **Boosting Post-Harvest Lending:** The government anticipates that this initiative will significantly increase post-harvest lending over the next decade, projecting a growth from current levels towards ₹5.5 lakh crores.
- **Empowering Farmers:** With better access to finance, farmers can make informed decisions regarding storage and sale of their produce rather than succumbing to distress selling.

## Challenges Ahead

While the CGS-NPF scheme holds great promise, several challenges need addressing:

1. **Awareness and Implementation:** Creating awareness among farmers about how to utilize e-NWRs effectively is crucial for success.
2. **Warehouse Registration:** A significant challenge lies in registering all warehouses with WDRA; increasing warehouse registration numbers will be essential for operational success.
3. **Banking Sector Adaptation:** Banks must adapt their processes and training programs to accommodate this new lending approach effectively.

## Conclusion:

By minimizing distress selling and enhancing post-harvest financing options through a structured guarantee system, this initiative aligns with broader goals of food security and

economic empowerment within rural communities. As implementation progresses, continuous efforts will be needed from all stakeholders—government agencies, banking institutions, and farmer organizations—to ensure that this scheme achieves its intended objectives and contributes meaningfully to India's agricultural landscape.

## New courses on 'Viksit Bharat'

### News Excerpt

**Delhi University (DU)** has proposed **five new Value-Added Courses (VACs)** for undergraduate students under its four-year program, four of which are centered on the **Bhagavad Gita**, and one focuses on the vision of a "**Viksit Bharat**" (Developed India). While these courses aim to integrate ethical, cultural, and leadership values into education, they have sparked debate among faculty members regarding inclusivity, academic focus, and practical relevance.

### The Proposed Courses

- **Courses Based on the Bhagavad Gita:**
  - The Gita for Holistic Life.
  - Leadership Excellence through the Gita.
  - The Gita for a Sustainable Universe.
  - The Gita: Navigating Life's Challenges.

### Topics Include:

- Arjuna's dilemma and Krishna's guidance.
- Swadharma (personal duty) and equanimity in success and failure.
- Management of the three gunas (Sattvika, Rajasika, Tamasika).
- Practical components:
  1. SWOC (Strengths, Weaknesses, Opportunities, Challenges) analysis.
  2. Pranayama exercises.
  3. Role-play of Krishna and Arjuna.
- **Envisaging Viksit Bharat:**
  - Covers themes like the vision of a developed India, digital transformation, e-governance, and renewable energy.
  - Focuses on government initiatives, such as the PM Gati-Shakti National Master Plan.

### Objectives of the Courses

- To promote values such as **equanimity, self-awareness, compassion, and leadership.**
- To expose students to **Indian knowledge systems** while fostering holistic development.
- To bridge the gap between traditional wisdom and modern challenges, such as sustainability and leadership ethics.

### Value-Added Courses (VACs) Overview

- Introduced under the **National Education Policy (NEP), 2020.**

- Aimed at enhancing ethical, cultural, and constitutional values while promoting critical thinking and teamwork.
- Students must earn **eight credits** through VACs within their first two years.
- Currently, DU offers **33 VACs**, including courses on Ayurveda, Yoga, Vedic Mathematics, Gandhi and Education, Indigenous Sports, and Science and Society.

#### Support for the Courses

- Advocates highlight the importance of integrating **Indic civilizational heritage** into education.
- Proponents argue that the **Bhagavad Gita** offers timeless lessons on leadership, ethics, and resilience that are valuable across disciplines and professions.
- The course on **Viksit Bharat** aims to align students with India's developmental goals, promoting a sense of national pride and responsibility.

#### Broader Context

- The proposed courses reflect the NEP 2020's emphasis on embedding **Indian knowledge systems** in education.
- However, they also raise questions about balancing tradition with inclusivity and maintaining the academic rigor of undergraduate programs.
- The discussion surrounding these courses highlights the challenge of designing curricula that respect cultural heritage while fostering critical thinking and preparing students for modern career demands.

## Grameen Bharat Mahotsav 2025

### News Excerpt

Prime Minister **Narendra Modi** inaugurated the **Grameen Bharat Mahotsav 2025** at Bharat Mandapam, New Delhi, on Saturday. The event aims to promote the development



of rural India, aligning with the vision of building a resilient and self-reliant rural economy by **2047**, marking India's centenary of independence.

#### About Grameen Bharat Mahotsav 2025

- **Dates:** January 4–9, 2025
- **Theme:** Building a Resilient Rural India for a Viksit Bharat 2047

#### Objectives:

- **Enhancing Rural Infrastructure:** Develop robust infrastructure to foster rural growth.
- **Financial Inclusion:** Promote economic stability, particularly in **North-East India**, by addressing financial inclusion and supporting sustainable agricultural practices.
- **Empowering Rural Women:** Foster entrepreneurship among women to enable self-reliance.
- **Technology and Innovation:** Encourage discussions on leveraging technology to improve rural livelihoods.
- **Cultural Heritage and Innovation:** The Mahotsav celebrates India's rich cultural diversity and entrepreneurship by bringing together artisans, rural entrepreneurs, and government officials to foster discussions around leveraging technology in agriculture and crafts.
- The exhibition features over 50 Geographical Indication (GI) tagged products, showcasing the unique heritage and craftsmanship of rural regions.

#### Key Initiatives Highlighted

- **Swachh Bharat Mission:**
  - The effort to provide toilets in every household has successfully transformed sanitation facilities in rural areas.
- **PM Awaas Yojana:**
  - Millions of rural families have been provided with **pucca houses**, significantly improving living conditions.
- **Jal Jeevan Mission:**
  - This initiative aims to ensure safe and potable drinking water supply to every household, with lakhs of homes benefitting from this program.
- **Health Facilities:**
  - Over **1.5 lakh Ayushman Arogya Mandirs** have been set up, providing essential healthcare services, including telemedicine options, to rural populations.
- **Financial Assistance Programs:**
  - The **Emergency Credit Line Guarantee Scheme (ECLGS)** and the **Credit Link Guarantee Scheme** have collectively benefited **over one crore rural MSMEs**, bolstering local economies.
- **Activities:**
  - **Workshops, Masterclasses, and Discussions:** Engage stakeholders, including government officials, rural entrepreneurs, and thought leaders, to create actionable strategies for rural transformation.

- o **Cultural Exhibitions:** Showcase India's rich cultural heritage through performances and exhibitions.

### PM Modi's Recent Initiatives

- A day before the Mahotsav, PM Modi inaugurated **1,675 newly constructed flats** at **Swabhiman Apartments** in Ashok Vihar, Delhi.
- These flats were built for residents of **JJ clusters**, providing eligible beneficiaries with keys to new homes.
- The **Grameen Bharat Mahotsav 2025** underscores the government's commitment to inclusive development by bridging urban-rural gaps, empowering rural communities, and contributing to the broader goal of a **"Viksit Bharat" (Developed India) by 2047**.

### Conclusion

The Grameen Bharat Mahotsav 2025 represents a pivotal moment in India's journey towards rural empowerment and development. By focusing on collaboration, innovation, and sustainability, this initiative aims to create resilient rural economies that contribute significantly to national growth. As articulated by Prime Minister Modi, the commitment to uplifting rural India is not just a policy goal but a moral imperative that will shape the future of the nation. Through continuous efforts and community involvement, a developed India can indeed emerge from its vibrant villages.

## PHILOSOPHY OF THE MONTH

### Stepping Out of the Comfort Zone: A Philosophical Perspective on Building Viksit Bharat by 2047

The call to action articulated by Prime Minister Narendra Modi during the Viksit Bharat Young Leaders Dialogue presents a significant philosophical moment. When he urges the youth to step out of their "comfort zone," he invites deeper reflection on progress, responsibility, and the spirit of collective action necessary for achieving national goals. This idea resonates with various philosophical traditions that emphasize the importance of striving for greater ideals and participating in the common good.

#### The Nature of Comfort Zones

To understand the call to step outside the comfort zone, we must first explore the concept itself. A "comfort zone" refers to a psychological state where individuals feel safe and at ease, avoiding risks or challenges. While comfort provides stability, it can also lead to



complacency. Philosophical thinkers like **Søren Kierkegaard**, the Danish existentialist, argued that true self-discovery requires stepping into the unknown. In his work "Fear and Trembling," Kierkegaard suggests that genuine faith and personal growth often occur at the intersections of anxiety and risk.

To illustrate, **Kierkegaard describes the story of Abraham**, who was called to sacrifice his son Isaac. This sacrifice required Abraham to step out of his comfort zone and confront profound existential dilemmas. In doing so, he exemplifies how true commitment and transformation are frequently rooted in discomfort.

#### The Role of Big Goals in Society

Prime Minister Modi emphasizes the importance of setting "big goals" for a nation's development. This notion aligns with **Immanuel Kant**, particularly in his "**Groundwork for the Metaphysics of Morals**." Kant suggests that moral perfection and progress are achievable through the collective will of individuals pursuing shared ideals. Setting significant objectives—such as **transforming India into a \$5 trillion economy**—creates a framework for collective ambition and purpose.

A historical example is the **New Deal** enacted by President Franklin D. Roosevelt in the United States during the 1930s. Facing an economic crisis, Roosevelt's administration established a series of ambitious programs aimed at revitalizing the economy, which not only addressed immediate needs but also reshaped societal values regarding governance and civic responsibility. **Youth as Catalysts for Change**

PM Modi is explicit in his assertion that the youth will be the driving force behind India's transformation into a "Viksit Bharat" by 2047. This idea echoes **John Dewey's** democratic and educational philosophies, particularly in "Democracy and Education." Dewey advocated for active participation and experiential learning, positing that youth engagement is vital for societal evolution.

#### Collective Responsibility and Ownership

The Prime Minister's message highlights collective responsibility. Building a developed nation requires the contributions of all citizens, an idea connected with **Jean-Jacques Rousseau's** social contract theory in "The Social Contract." Rousseau argued that individuals unite to form a society through mutual consent

for the common good. This contrasts starkly with the notion of individualism, emphasizing that social good outweighs personal interests.

For instance, during times of national crisis, communities have historically come together to support one another, such as in the aftermath of natural disasters. This collective resilience reinforces Rousseau’s idea that civic engagement is at the heart of societal progress. It’s a reminder that significant societal transformations arise from unified actions driven by shared values and objectives.

**The Future: A Collective Vision**

PM Modi’s vision of "Viksit Bharat" and a "golden period" for India in the next 25 years hinges on collective action fueled by ambition. **Aristotle’s** famous assertion in "Nicomachean Ethics" that “we are what we repeatedly do. Excellence, then, is not an act, but a habit,” reflects this mindset. Consistent efforts toward achieving collective goals can instill a culture of excellence and shared purpose in society.

When considering India’s growth trajectory, we can look to **historical leaders** like **Mahatma Gandhi**, who mobilized a nation through non-violent resistance and collective action to challenge injustice and achieve independence. Gandhi’s campaigns demonstrated that a vision for change—rooted in the values of integrity, courage, and communal effort—has the power to galvanize and inspire a nation.

**Conclusion**

As we reflect on the Prime Minister’s call to action, we are reminded of the profound philosophical foundations that support such aspirations. The journey toward a developed India requires stepping beyond individual comfort zones, embracing ambitious goals, and fostering youth participation.

By engaging with these philosophical principles and historical examples, we cultivate a society that not only dreams of an ideal

**ESSAY**

1. Rather than love, than money, than fame, give me truth
2. "We make a living by what we get, but we make a life by what we give."

**CONTEMPORARY ETHICS CASE STUDY**

A devastating fire broke out at the TWP Game Zone located in Haryana, resulting in the tragic deaths of 27 individuals, including four children under the age of 12. The incident occurred during a busy weekend at the temporary structure, which was reportedly overcrowded and lacked adequate fire safety measures such as fire extinguishers, emergency exits, and trained personnel for evacuation.

The game zone was found to be operating without essential fire safety infrastructure, exacerbating the severity of the fire and hindering rescue efforts. The Chief Minister announced compensation for the victims’ families and ordered inspections of all similar establishments statewide.

Following the tragedy, joint teams comprising officials from various departments such as municipal corporations, police, fire, and health departments conducted thorough inspections of game zones, water parks, and other entertainment venues across Haryana. As a result of the inspections, over 20 game zones and other fun zones were scrutinized, leading to the closure and sealing of 10 such game zones, four melas, and other venues for violations related to fire safety norms, entry-exit routes, and necessary clearances.

The state government swiftly formed a Special Investigation Team (SIT) to probe the incident. You are the chief of Haryana Disaster Response Force, you get a call from the office of the CM and are informed about your appointment as the chief of this SIT to investigate the entire incident and give a subsequent report.

Your close relative Manoj Gehlot is the current District Magistrate (DM) of the district in which this incident happened. On investigation, you find that it was due to negligence of the top brass that this incident occurred. Your relative did not sign the files due to which the required inspection couldn’t be carried out on time. Even though clearance was given for the operation of some of these game zones, large sums of bribes were received by the authorities. You have personally known Manoj and guided him during his struggling years. You have a soft corner for him and treat him like your own son.

- (a) Discuss the key stakeholders and the ethical issues involved in this case.
- (b) What measures would you take to manage the conflict of interest arising from your relative’s role in the negligence along with maintaining integrity and objectivity in the investigation process?
- (c) Suggest some regulatory measures so that such incidents could be prevented in the future.



**(Answer in 250 words) 20**

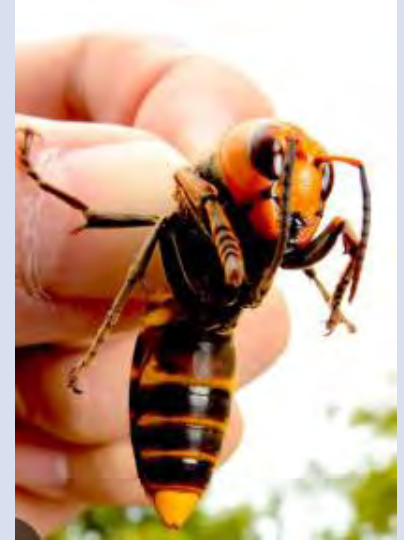
## SPECIES IN NEWS

United States  
eradicate 'murder  
hornets'  
GS Paper - III

**The Northern giant hornet** nicknamed the "**murder hornet**", has been **eradicated in the United States**, the **Department of Agriculture** said. **The insect was first spotted in Washington state** near the **Canadian border in 2019**. Efforts quickly began to track down and **get rid of the invasive species** which poses a threat to **bees and agriculture**. Washington was the only state in the US that has had confirmed sightings of the **northern giant hornets**.

#### Why Were 'Murder Hornets' a Threat?

- **Physical Characteristics:** These hornets, measuring up to 2 inches long, are invasive and highly aggressive. They can sting multiple times, penetrating most beekeeper suits and delivering venom seven times stronger than a honeybee's.
- **Threat to Honeybees:** Known to decimate honeybee colonies in under 90 minutes, the hornets enter a "slaughter phase," killing bees by decapitation and using the hives' brood to feed their young.
- **Agricultural Impact:** Honeybees are critical pollinators for crops, and their loss could disrupt ecosystems and agriculture.
- **Human Danger:** While rare, the hornets can fatally sting humans, as evidenced by their role in 42 deaths and 1,675 injuries in China in 2013.



#### Origins and Spread in the U.S.

- The species, native to Asia, was first spotted in Washington state near the Canadian border in 2019. Washington became the sole state with confirmed sightings.

#### Eradication Efforts

- **Collaboration:** Local, state, federal, and international agencies worked together to combat the hornets, emphasizing coordinated surveillance and removal.

#### Tracking Nests:

- Entomologists captured live hornets, attached radio tags to them, and tracked them to their underground or tree-based nests.
- Public participation was encouraged, with residents setting traps at their homes and reporting sightings.

#### Neutralizing Nests:

- After locating a nest, it was plugged with foam, wrapped in plastic, and the hornets were vacuumed out.
- Remaining hornets were eliminated using carbon dioxide gas.
- **Community Involvement:** Public awareness campaigns and cooperation were vital, helping locate nests faster and ensuring widespread trap deployment.

#### Outcome and Impact

- The Department of Agriculture declared the northern giant hornet eradicated from the U.S. in December 2024.
- This success protected pollinators, agriculture, and ecosystems dependent on honeybees.
- Dr. Mark Davidson, a USDA official, emphasized that the effort preserved industries, communities, and biodiversity.

#### Potential for Reemergence

- While the hornet is eradicated for now, there remains a risk of reintroduction, requiring continued vigilance and monitoring.

#### Conclusion

- The U.S. successfully eradicated the "**murder hornet**" by leveraging cutting-edge entomological techniques, community engagement, and inter-agency collaboration.
- This effort underscores the importance of **rapid response and public cooperation** in addressing invasive species.

### Discovery of *Stellaria bengalensis* in West Bengal

- On December 31, 2024, researchers announced the identification of a new species of the genus ***Stellaria***, named ***Stellaria bengalensis***, in the Kalimpong district of West Bengal. This discovery follows the earlier identification of ***Stellaria mcclintockiae*** in Kerala, marking a significant addition to the biodiversity of the region.

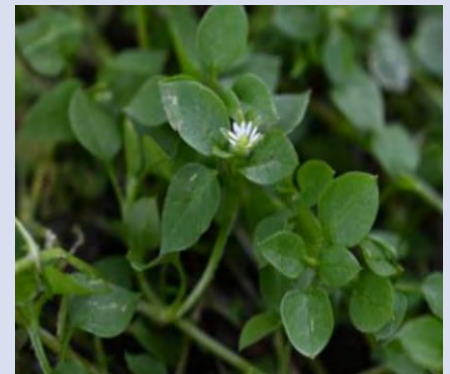
#### Discovery Details

- The discovery was made by Arya S. from the PG and Research Department of Botany at PSG College of Arts and Science, Coimbatore, and Harsh Singh from the Centre for Advanced Studies in Botany, North-Eastern Hill University, Shillong. Their findings were published in the journal ***Phytotaxa***. ***Stellaria bengalensis*** is noted as the second *Stellaria* species reported from India within the year.

#### Habitat and Characteristics

*Stellaria bengalensis* was found growing on muddy soil slopes at altitudes ranging from **2,245 to 2,450 meters** in the Sangser forest area of Kalimpong. The plant was initially discovered two years ago during a revision of the Caryophyllaceae family, but it took nearly two years to confirm its status as a distinct species. **Key Characteristics:**

- Type:** Annual herb
- Height:** 8 to 10.5 cm
- Flowers:** White flowers with shorter petals that are often included within the sepal.
- Seeds:** Sharp and pointed.
- Flowering Period:** May to September.



#### Ecological Significance

India is home to around **22 *Stellaria* species**, primarily distributed across the Himalayan region. The discovery of *Stellaria bengalensis* adds to this diversity and raises the possibility of more populations existing in the western Himalayas. For now, researchers have classified this new species as "data deficient" according to International Union for Conservation of Nature (IUCN) criteria, indicating that more information is needed regarding its distribution and conservation status.

#### Conclusion

The identification of *Stellaria bengalensis* not only enriches our understanding of plant biodiversity in India but also highlights the importance of continued research in natural habitats. As scientists explore these unique ecosystems, they uncover vital information that can contribute to conservation efforts and enhance our knowledge of regional flora. The discovery reinforces West Bengal's significance as a biodiversity hotspot and emphasizes the need for ongoing ecological studies to protect these valuable natural resources.

### Banded Royal Butterfly

#### Banded Royal Butterfly: A Comprehensive Overview

The Banded Royal Butterfly (*Tajuria cippus*) is a striking species known for its vibrant colors and unique patterns. This butterfly belongs to the family Lycaenidae and is predominantly found in various regions across Asia. This article provides an in-depth look at the Banded Royal Butterfly, covering its taxonomy, habitat, behavior, life cycle, conservation status, and significance in ecosystems.

- Habitat:**
  - Found in forests, particularly near the **Western Ghats, Northeast India, Sri Lanka, Myanmar, Thailand, and Malaysia.**

#### Physical Description

The Banded Royal Butterfly is characterized by its distinctive coloration and wing patterns:

- Wingspan:** Approximately 30 to 40 mm.
- Coloration:** The upper side of the wings is typically dark blue or purple with black bands. The underside features a more muted brown color with orange and white markings, which helps in camouflage against predators.
- Sexual Dimorphism:** Males and females exhibit slight differences in coloration, with males generally having brighter hues.

#### Habitat

Banded Royal Butterflies inhabit a variety of environments, including:

- **Forests:** They are commonly found in tropical and subtropical forests where host plants are abundant.
- **Grasslands:** Open areas with flowering plants also serve as suitable habitats.
- **Urban Gardens:** These butterflies can adapt to urban settings where nectar-rich flowers are present.

**Behavior**

Banded Royal Butterflies exhibit several interesting behaviors:

- **Feeding:** They primarily feed on nectar from flowers, showing a preference for plants like Lantana and various legumes.
- **Mating Rituals:** Males often engage in territorial displays to attract females. They may also engage in "puddling," where they gather on damp soil to extract minerals.
- **Flight Patterns:** Their flight is characterized by quick, erratic movements, making them agile fliers.



**Conservation Status**

While there is no specific conservation status listed for the Banded Royal Butterfly by organizations such as the IUCN, habitat loss due to deforestation and urbanization poses a threat to its populations. Conservation efforts focusing on habitat preservation and restoration are essential to ensure the survival of this species.

- It is legally protected under **Schedule II of the Indian Wildlife (Protected) Act, 1972.**

**Ecological Significance**

Banded Royal Butterflies play a critical role in their ecosystems:

- **Pollination:** As nectar feeders, they contribute significantly to pollinating various flowering plants, aiding in plant reproduction.
- **Food Source:** They serve as prey for birds and other predators, thus maintaining ecological balance.

**Conclusion**

- The Banded Royal Butterfly is not only a beautiful addition to the biodiversity of its habitats but also an important species contributing to ecological health through pollination and serving as part of the food web. Protecting their habitats and

**ZSI Scientists Discover New Species of Indo-Burmese Pangolin**

On January 11, 2025, scientists from the **Zoological Survey of India (ZSI)** announced a significant discovery: a new species of Indo-Burmese pangolin, named **Manis indoburmanica**. This finding was based on genetic analyses confirming that this species diverged from the Chinese pangolin (*Manis pentadactyla*) approximately **3.4 million years ago**. The discovery adds to the biodiversity of the Indo-Burma region, recognized as one of the world's biodiversity hotspots.

**Key Findings**

- **Genetic Analysis:** The research utilized advanced genomic tools to analyze mitochondrial genomes, revealing a significant genetic distance of **0.038** and a barcode gap of **3.8%**, reinforcing its classification as a distinct species.
- **Evolutionary Background:** The study suggests that the Indo-Burmese pangolin evolved in isolation during the Pliocene and Pleistocene epochs, influenced by significant climatic and geological shifts in the region.
- **Geographical Distribution:** This species is believed to inhabit parts of **Arunachal Pradesh, Assam**, and possibly extend to neighboring countries such as **Nepal, Bhutan, and Myanmar**.



### Implications for Conservation

The identification of *Manis indoburmanica* underscores the urgent need for conservation efforts tailored to this newly recognized species. Dr. Mukesh Thakur, who led the research team, emphasized that **pangolins are among the most trafficked mammals globally**. Recognizing this species as distinct highlights its vulnerability and necessitates collaborative conservation measures across its range.

### Research Publication

The findings were published in an international peer-reviewed journal, **Mammalian Biology**, under the title "**Indo-Burmese pangolin (*Manis indoburmanica*): a novel phylogenetic species of pangolin evolved in Asia.**" The paper advocates for recognizing this lineage as a distinct phylogenetic species due to its unique evolutionary history and genetic distinctiveness.

### Conclusion

The discovery of the Indo-Burmese pangolin not only enriches our understanding of pangolin diversity in Asia but also emphasizes the critical need for targeted conservation efforts. As scientists continue to uncover hidden biodiversity through modern genetic tools, it becomes increasingly clear that protecting these unique species is essential for maintaining ecological integrity in their native habitats.

### Wroughton's Free-Tailed Bat Spotted in Delhi's Yamuna Biodiversity Park

A remarkable sighting of the **Wroughton's free-tailed bat** (*Otomops wroughtoni*), a **highly rare species of molossus bat, was reported at the Delhi Development Authority's (DDA) Yamuna Biodiversity Park**. This sighting is significant as the species is primarily found in the **Western Ghats**, where only one known breeding colony exists, alongside smaller colonies in **Jaintia Hills, Meghalaya**, and a solitary individual recorded in **Cambodia**.

### Unique Sighting and Characteristics

The discovery was made during a routine visit to the biodiversity park by Faiyaz A Khudsar, a **biodiversity expert** and in-charge scientist under the Biodiversity Parks Programme. He noted that this sighting is unique for Delhi, where bat diversity has been previously limited.

**The Wroughton's free-tailed bat is easily recognizable due to its large size, prominent ears that extend beyond its muzzle, and distinctive bicolored velvet fur.** Typically, these bats roost in caves or dark, damp places within moderate colonies.

### Ecological Importance

Wroughton's free-tailed bat plays a crucial role in ecosystems:

- **Insect Regulation:** As an insectivore, this bat helps control insect populations, contributing to ecological balance.
- **Pollination:** The species is also known to assist in pollination, further enhancing its ecological significance.

### Conservation Status

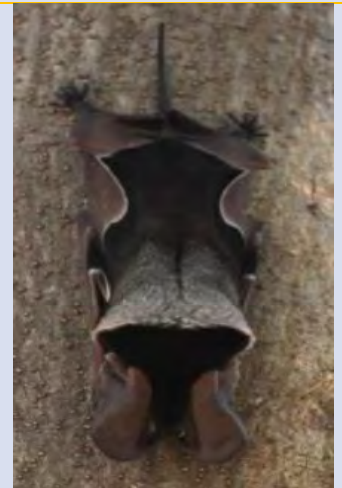
Historically, Wroughton's free-tailed bat was considered **critically endangered until 2000** due to its limited known population. However, with recent discoveries across different localities, it has been classified as **data deficient** on the **International Union for Conservation of Nature (IUCN) Red List**. Despite being discovered over a century ago, much remains unknown about its feeding ecology and behavior.

### Habitat Restoration Efforts

The sighting of this rare bat species highlights the success of two decades of ecological restoration efforts at Yamuna Biodiversity Park. These initiatives have created specialized niches that support diverse wildlife. Notably, the restored forest of the **Aravali Biodiversity Park**, managed by the DDA, has become the only known roosting site for the **Blyth's horseshoe bat** in Delhi.

### Conclusion

The detection of Wroughton's free-tailed bat in Delhi underscores the importance of ongoing conservation efforts and habitat restoration programs. As urban areas continue to expand, protecting these unique species and their habitats becomes increasingly critical. The presence of such rare wildlife not only enriches local biodiversity but also serves as an indicator of the ecological health of urban ecosystems like the Yamuna Biodiversity Park.





## New Parasitic Wasp Species in Nagaland

Zoological Survey of India (ZSI) announced the discovery of a new species of **parasitic wasp**, named **Ceraphron initium**, during a field survey funded by the Science and Engineering Research Board (SERB) in Nagaland. This finding highlights the rich biodiversity of the region and underscores the importance of ongoing research in understanding and conserving insect species.

Characteristics of *Ceraphron initium*

**The newly identified species, *Ceraphron initium*, is distinguished by several unique features:**

- **Morphology:** The wasp exhibits exceptional wing patterns, body structure, and pigmentation. Notably, its male genitalia display peculiar characteristics that set it apart from other members of the **Ceraphronidae** family.
- **Size:** Like many ceraphronids, *Ceraphron initium* is small, measuring between **0.8 mm and 1.5 mm**, which often leads to these species being overlooked in taxonomic studies.

### Importance of Discovery

Dr. Dhriti Banerjee, Director of ZSI, emphasized that this discovery reflects the remarkable variety of insect species in India and their essential roles in ecosystems. Parasitic wasps like *Ceraphron initium* are crucial for **regulating insect populations and contribute to ecological balance.**

This finding also serves as a reminder of the need for continuous exploration and conservation efforts to protect India's rich natural heritage. Tyagi noted that such discoveries underscore the abundant biodiversity present in India and highlight the necessity for ongoing investigations in natural habitats.

### Related Discoveries

In addition to *Ceraphron initium*, a team from ZSI led by Rajmohana K has identified four new species of Hymenopteran wasps: ***Calotelea acuta*, *C. chitraka*, *C. foveata*, and *C. fulva*.**

These species further contribute to ecosystem health by regulating various insect populations.

### Future Research Directions

Dr. Banerjee mentioned that ZSI plans to focus on molecular and bioecological studies of these newly discovered groups. **There is a recognized need for extensive taxonomical research on lesser-known insect groups**, as they can have significant implications for **sustainable agriculture and biodiversity conservation.**

### Conclusion

**The discovery of *Ceraphron initium* is a significant addition to the biodiversity knowledge base in India, particularly within the context of Nagaland's rich ecological landscape. As researchers continue to uncover new species, it becomes increasingly clear that protecting these insects is vital for maintaining ecological integrity and promoting sustainable practices in agriculture and conservation efforts across the country.**



## PLACES IN NEWS - INDIA

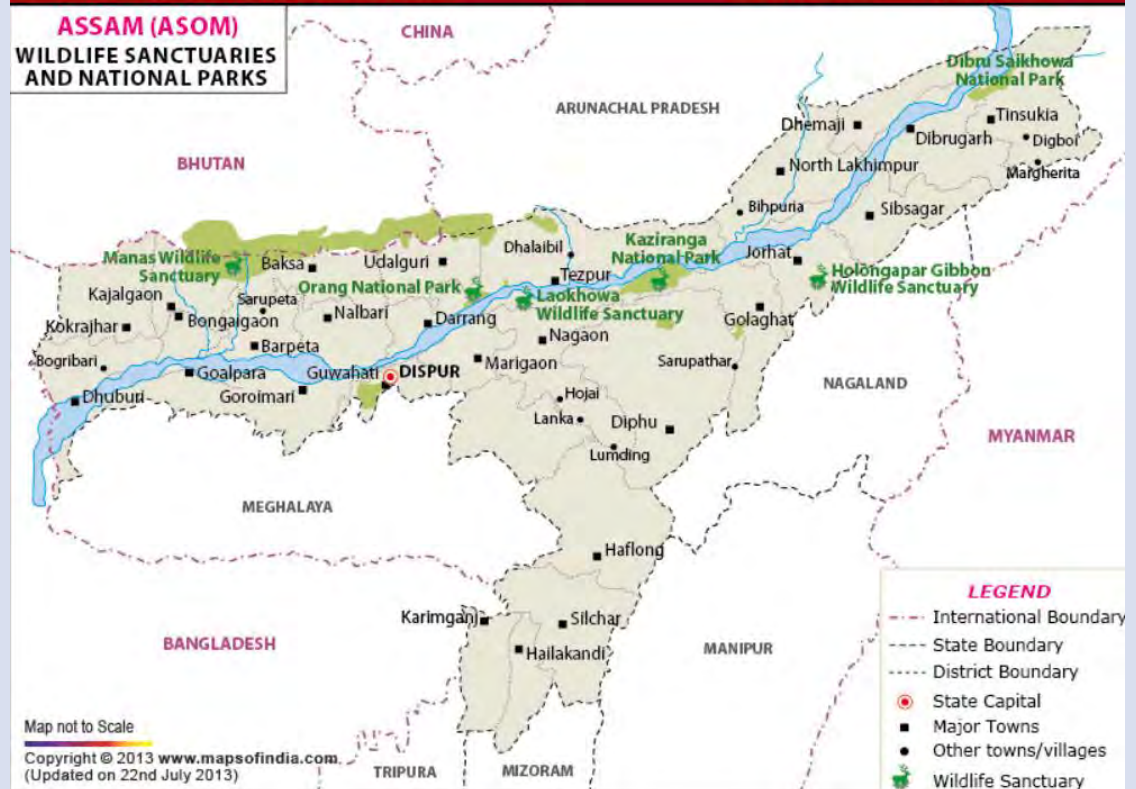
**Assam's  
Hoollongapar  
Gibbon Wildlife  
Sanctuary.**

The recent approval for oil and gas exploratory drilling in the eco-sensitive zone (ESZ) of Assam's Hoollongapar Gibbon Wildlife Sanctuary.

**Decision by Wildlife Panel:** The Standing Committee of the National Board for Wildlife (NBWL) approved the drilling proposal during a meeting. This decision allows Cairn Oil & Gas, a subsidiary of Vedanta Group, to conduct exploratory drilling in a designated area of approximately 4.5 hectares, located about 13 kilometers from the sanctuary itself.

**Sanctuaries and National Parks of Assam**

[Click here for Customized Maps](#)



**Environmental Concerns**

**Sanctuary Significance:** The **Hoollongapar Gibbon Wildlife Sanctuary** is crucial for biodiversity, particularly as it is home to the endangered Hoolock gibbon and other primate species. The sanctuary spans 20.98 square kilometers, with an ESZ extending over 264.92 square kilometers to maintain habitat connectivity.

**Impact Assessment:** A site inspection conducted by representatives from the Ministry of Environment and Forests, along with the Wildlife Institute of India, concluded that while exploratory drilling would have limited immediate environmental impact, commercial extraction activities would be strictly prohibited within the ESZ.

**Local and Regional Issues**

**Community Concerns:** There are significant local objections regarding drilling activities, especially since the proposed site lies within a disputed area along the Assam-Nagaland border. Local communities have insisted that drilling cannot proceed without their consent.

**Ongoing Threats:** The sanctuary is already under stress due to human activities, including plans for railway electrification that could further fragment habitats and threaten wildlife.

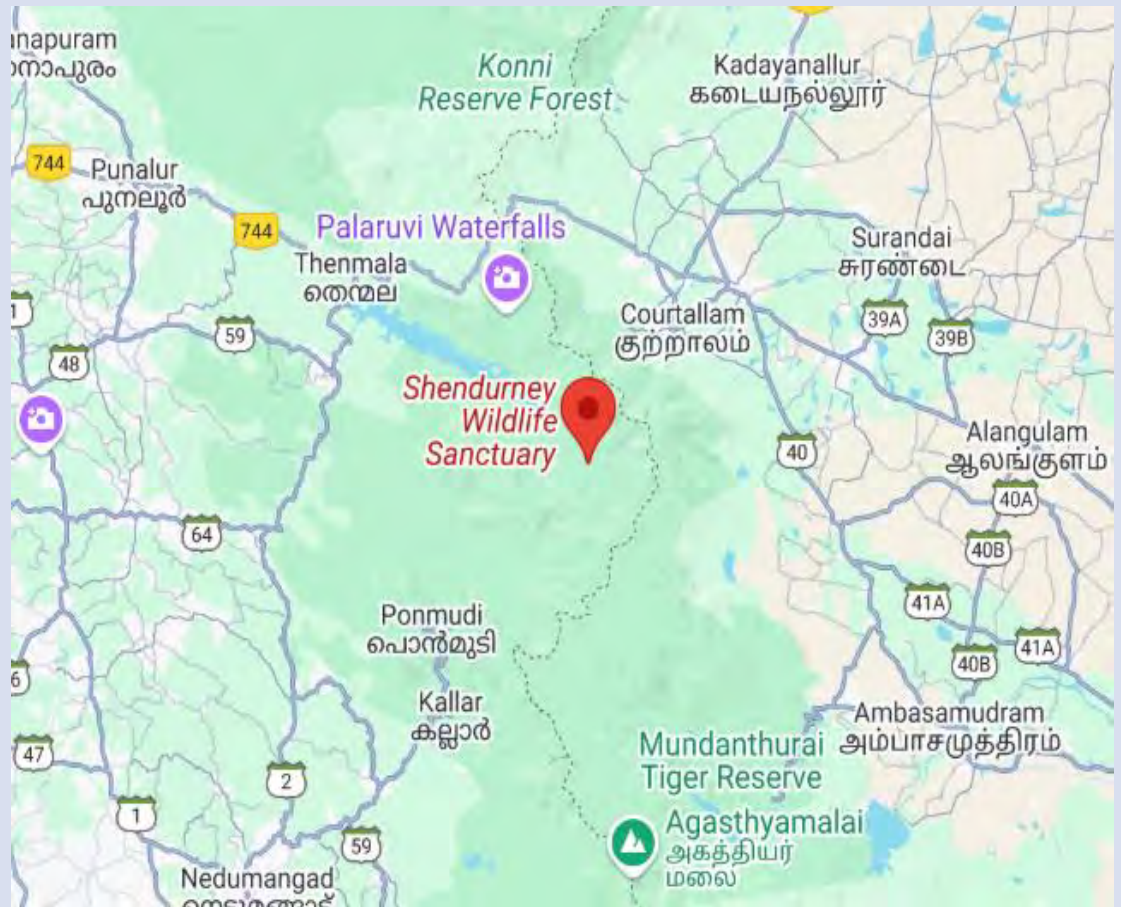
**Conditions Imposed:** The NBWL has mandated several safeguards for the exploratory drilling process, including real-time monitoring systems and strict pollution control measures. Any future extraction would need to occur outside the ESZ, ensuring minimal disruption to the sanctuary's ecology.

This approval has sparked debate about balancing energy development needs with wildlife conservation imperatives in sensitive ecological zones.

**Shendurney  
Wildlife Sanctuary**

**Overview:**

A four-day faunal survey conducted at the **Shendurney Wildlife Sanctuary** has added significant findings to the sanctuary’s biodiversity records.



**About Shendurney Wildlife Sanctuary:**

It is located in the southern part of the **Western Ghats in the Kollam district of Kerala. It spans an area of approximately 172 sq.km. and forms part of the Agasthyamala Biosphere Reserve.**

Most of the Sanctuary area is hilly and interspersed with ravines.

Drainage: The major rivers are Shendurney, Kazhuthuruthy, and Kulathupuzha, which join together to form the Kallada River.

**Flora:**

The vegetation primarily consists of tropical evergreen forests, semi-evergreen forests, and moist deciduous forests.

The name "Shendurney" is derived from the name of a tree species, *Gluta travancorica*, locally known as ‘Chenkurunji’, which is endemic to this region and found in abundance within the sanctuary.

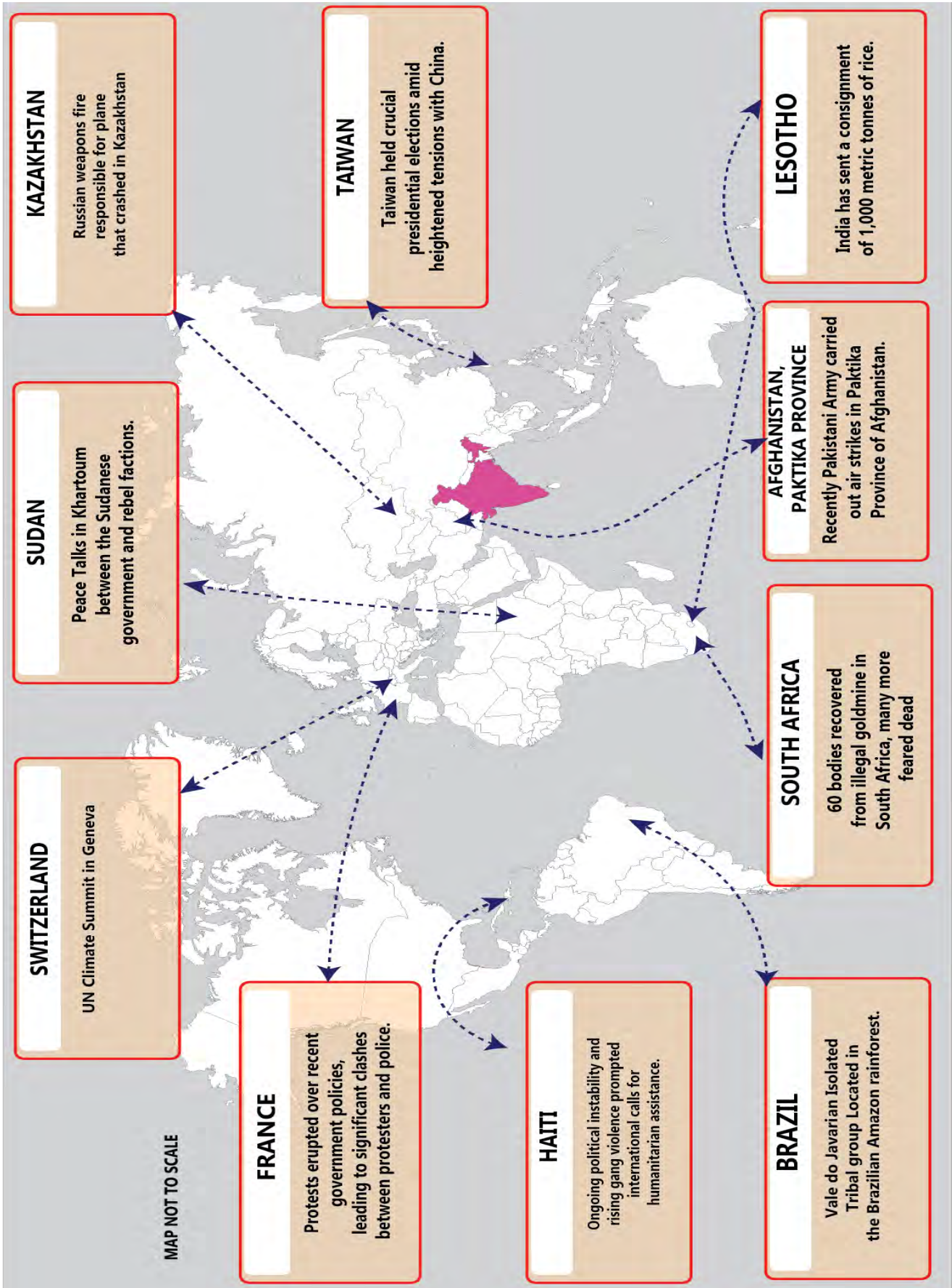
**Fauna:**

Notable mammals include elephants, tigers, leopards, gaurs (Indian bison), sambar deer, barking deer, wild boars, and bonnet macaques.

The sanctuary also supports a significant population of Nilgiri langurs and lion-tailed macaques, both of which are endemic to the Western Ghats.

Over 200 species of birds are recorded in the sanctuary. Some of the notable species include the great Indian hornbill, Malabar pied hornbill, grey-headed bulbul, white-bellied treepie, and various species of woodpeckers, flycatchers, and raptors.

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