

PRAGNYA BHARATHI: Detailed News Analysis (DNA)

Topic : National Green Tribunal's National Conference on Environment 2025

Relevance : GS Paper 3 Environmental studies

Source : Hindustan Times

Context :

The National Green Tribunal (NGT), in collaboration with the Ministry of Environment, Forest, and Climate Change (MoEFCC), organized a two-day National Conference on Environment 2025 at Vigyan Bhawan, New Delhi. The event saw the participation of distinguished dignitaries, including Hon'ble Vice President of India, Shri Jagdeep Dhankhar, Hon'ble Justice P. S. Narsimha, Judge of the Supreme Court of India, Hon'ble Justice Prakash Shrivastava, Chairperson of NGT, Shri Tushar Mehta, Solicitor General of India, and Shri Tanmay Kumar, Secretary, MoEFCC. This conference was a major platform for policymakers, legal experts, and environmentalists to deliberate on critical environmental concerns and policy advancements.



Understanding the National Green Tribunal (NGT)

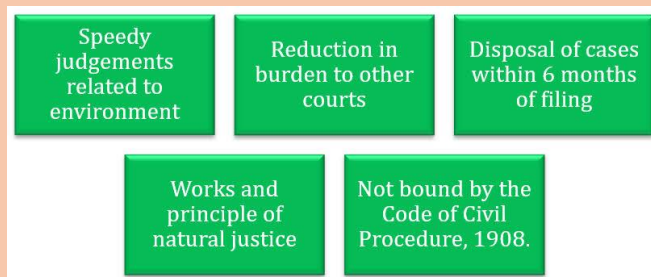
The National Green Tribunal (NGT) was established under the National Green Tribunal Act, 2010, to ensure the expeditious disposal of cases related to environmental protection and conservation. As a specialized judicial body, it functions independently to address environmental disputes while ensuring adherence to constitutional provisions and environmental laws.

National Green Tribunal

- ▶ The National Green Tribunal was established under Section 3 of the National Green Tribunal Act, 2010;
- ▶ It was established on 18th Oct. 2010 under the National Green Tribunal Act, 2010;
- ▶ It has been established to provide speedy environmental justice and help reduce the burden of litigation in the higher courts.

Significance of NGT

- **Swift Environmental Justice:** NGT operates with a mandate to provide **quick and effective resolutions** to cases involving environmental degradation and pollution.
- **Binding Judgments:** The tribunal's decisions hold legal authority, ensuring that they are effectively enforced by state and central agencies.
- **Public Interest Litigation (PIL):** Citizens, activists, and organizations can approach the NGT with grievances related to environmental issues, making it an accessible platform for justice.
- **Sector-Specific Jurisdiction:** The tribunal deals with cases concerning **water pollution, air pollution, forest conservation, biodiversity, and hazardous waste management.**



PRAGNYA BHARATHI: Detailed News Analysis (DNA)

Landmark Judgments by NGT

- **The Art of Living Case (2017):** NGT imposed a fine on the Art of Living Foundation for environmental damages caused during its World Culture Festival on the Yamuna floodplains.
- **Sterlite Copper Plant Case (2018):** NGT ruled for the closure of the controversial Sterlite Copper plant in Tamil Nadu due to environmental violations.
- **Ban on 10-Year-Old Diesel Vehicles (2015):** The tribunal played a pivotal role in curbing vehicular pollution by ordering a ban on diesel vehicles older than 10 years in Delhi-NCR.



Significance of the Conference

The discussions during the conference underscored the pressing need for judicial and policy-driven interventions in addressing environmental challenges. A common theme that resonated throughout the event was the necessity of shifting the focus from mere **human rights to planetary rights**, ensuring that nature itself is given a voice in governance and conservation.

Vice President's Address: A Call for Global Environmental Responsibility

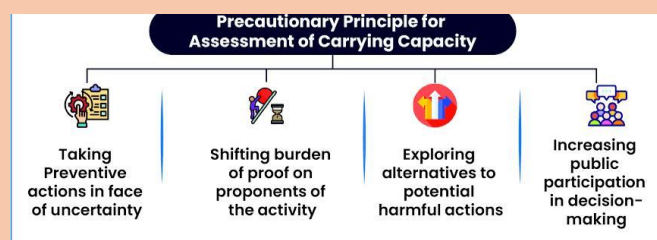
During his valedictory speech, **Hon'ble Vice President Shri Jagdeep Dhankhar** emphasized

the fact that the planet does not belong solely to humans, and we are merely its custodians.



He urged developed nations to move beyond **political boundaries** and work collectively towards **environmental conservation**. According to him, economic growth should not come at the cost of **irreversible ecological damage**, and international cooperation is essential to ensure **sustainable development**.

Deliberations and Key Takeaways from the Technical Sessions

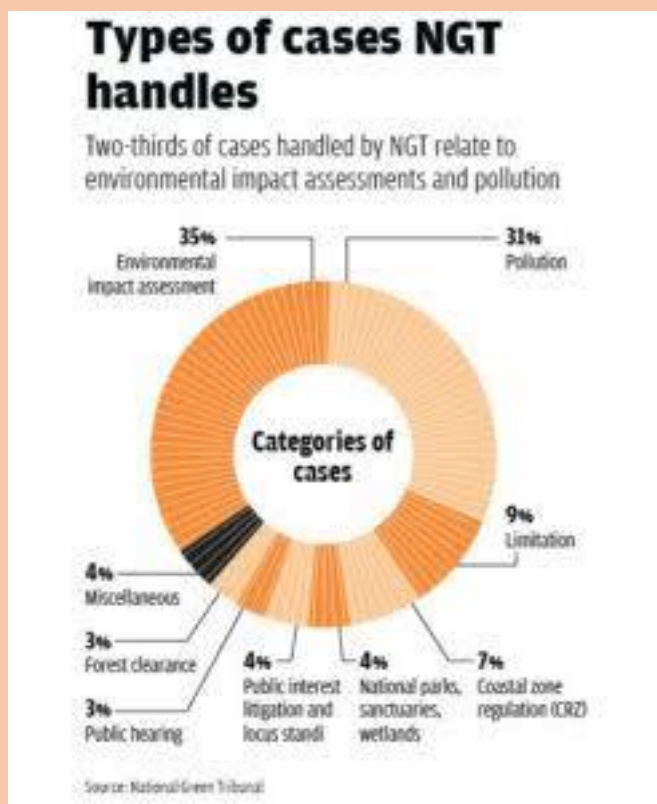


The conference featured multiple technical sessions where experts, policymakers, and judicial members engaged in in-depth discussions on various aspects of environmental conservation and governance.

PRAGNYA BHARATHI: Detailed News Analysis (DNA)

Technical Session I: Climate Change and Sustainable Development

The first technical session of the conference focused on **Climate Change and Sustainable Development**, emphasizing the need for a **multi-sectoral approach** to combat climate change. Experts and policymakers discussed the **impact of rising global temperatures, extreme weather events, and the role of renewable energy** in mitigating climate risks.



Key discussions included:

- The need to **reduce carbon footprints** through policy interventions and lifestyle changes.
- The role of **climate finance** in supporting developing nations to transition to clean energy.
- The importance of **sustainable urban planning** to accommodate increasing populations without damaging natural ecosystems.

- Strengthening the **Paris Agreement commitments** through domestic legislative measures.

Technical Session II: Pollution and Waste Management

The second session was centered around **Pollution and Waste Management**, addressing the alarming levels of **air, water, and soil pollution** in India. It was chaired by environmental scientists and legal experts who examined the effectiveness of existing **pollution control measures** and proposed enhanced strategies for a cleaner environment.

Key points discussed:

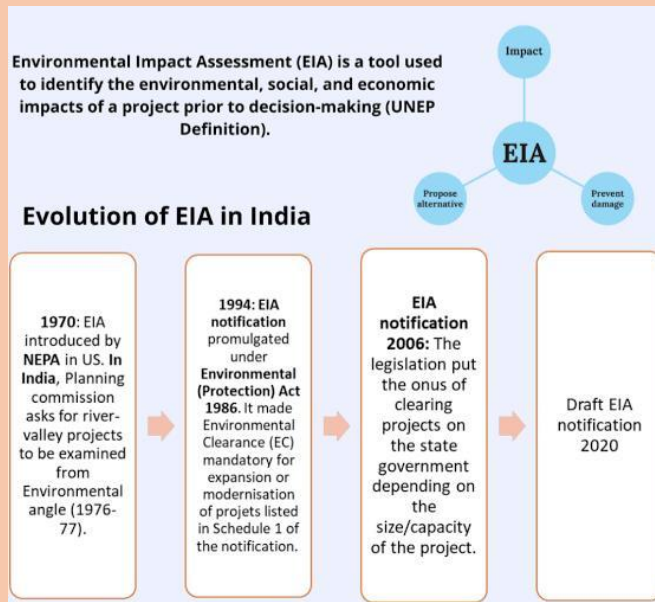
- **Air pollution control:** Implementing stricter vehicular emission norms and industrial regulations.
- **Plastic waste management:** Strengthening enforcement of the ban on single-use plastics and promoting biodegradable alternatives.
- **E-waste management:** Encouraging proper disposal and recycling of electronic waste.
- **Municipal waste disposal:** Improving waste segregation at the source and expanding waste-to-energy plants.
- **Role of industries in pollution reduction:** Encouraging industries to adopt green technologies and reduce their carbon footprint.

Technical Session III: Forest and Biodiversity Conservation

Chaired by **Hon'ble Justice Anand Pathak, Judge, Madhya Pradesh High Court**, this session focused on the impact of human interventions on forests and biodiversity. Experts elaborated on how deforestation, industrial expansion, and urbanization have led to a rapid decline in biodiversity. Justice

PRAGNYA BHARATHI: Detailed News Analysis (DNA)

Anand Pathak highlighted the role of individual responsibility in conservation and stressed that citizens must plant trees in appropriate locations to ensure a balanced ecosystem.



Technical Session IV: Institutional Strengthening for Environmental Governance

Chaired by Hon'ble Justice P. S. Narsimha, Judge, Supreme Court of India, and co-chaired by Hon'ble Justice Arun Kumar Tyagi, Judicial Member, NGT, this session focused on reviewing the conference's discussions and identifying actionable steps for future policy advancements.

Honoring Contributions and Launching Key Publications

A key highlight of the event was the release of the NGT Souvenir book, 'Voice of Nature', which provides a detailed account of NGT's history, activities, and achievements. Additionally, the NGT e-Journal, containing landmark environmental case rulings, was launched to serve as a reference for legal practitioners and researchers.

The Road Ahead: Strengthening India's Environmental Governance

WHAT NGT WANTS

Category I (Average)
When PM10 is more than 100µg/m3 but below 300µg/m3 and PM2.5 is more than 60µg/m3 but below 180µg/m3

- Increase green cover
- Ban burning of garbage, biomass or any kind of waste anywhere; violation to invite a penalty of Rs 5,000
- Regularly inspect thermal plants
- Mechanised sweeping of roads
- Regular check of vehicles for emissions
- Don't allow more than 10-year-old diesel and 15-year-old petrol vehicles on roads
- Ban on crop residue burning
- Identify alternative routes for heavy vehicles outside cities
- Enhance public transport facilities; deploy more electric vehicles
- Put a cap on number of vehicles of all kinds that can ply in Delhi
- Formulate policy of higher registration fee and road tax on purchase of second vehicle
- No parking on metalled roads
- All builders must comply with green rules
- Ensure increase of green belt in schools within a month

Category II (Severe)
When PM10 is more than 300 µg/m3 but below 700 µg/m3 and PM2.5 is more than 180 µg/m3 but below 400 µg/m3

- All steps under Category I
- Segregate office time for various offices
- Provide destination buses
- No entry for heavy transport vehicles whose final destination is not Delhi; higher ECC to be charged

Category III (Critical)
When PM10 is more than 700 µg/m3 but below 1000 µg/m3 and PM2.5 is more than 400 µg/m3 but less than 600 µg/m3

- All directions under Category I and II
- Stop all construction activity
- Implement odd and even scheme

Category IV (Environmental Emergency)
When PM10 is above 1000 µg/m3 and PM2.5 is above 600 µg/m3

- All directions under Category I, II and III
- Ban construction activity and transportation of construction material; Violation to incur fine of up to Rs 1 lakh
- Complete ban on use of DG set, crop residue burning, shut thermal power plants in Delhi
- Sprinkle water from highrise buildings or helicopters
- Consider closure of schools

The National Conference on Environment 2025 reinforced the urgent need for:

- Stronger laws and stricter enforcement mechanisms for environmental protection.
- Public participation in conservation efforts, encouraging individuals to take responsibility.
- Enhanced collaboration between the judiciary, government agencies, and environmental experts, ensuring a unified approach to tackling environmental challenges.
- Further institutional strengthening of NGT and regulatory bodies to ensure efficient execution of policies.

Prelims Practice Question

Q. Consider the following statements regarding the National Green Tribunal (NGT):

1. The NGT was established under the Environment Protection Act, 1986.
2. The tribunal has the authority to hear cases related to environmental

PRAGNYA BHARATHI: Detailed News Analysis (DNA)

protection and conservation of forests and natural resources.

3. The judgments passed by NGT are advisory in nature and are not legally binding.

Which of the statements given above is/are correct?

- (A) 1 and 2 only
(B) 2 only
(C) 1 and 3 only
(D) 2 and 3 only

Answer:

Correct Option: (B) 2 only

Explanation:

- **Statement 1 is incorrect:** The NGT was established under the **National Green Tribunal Act, 2010**, not the Environment Protection Act, 1986.
- **Statement 2 is correct:** The NGT has jurisdiction over cases related to **environmental protection, conservation of forests, and natural resources**, making it a crucial institution for environmental governance.
- **Statement 3 is incorrect:** The judgments passed by NGT are **legally binding** and have the same authority as those of a court. The tribunal ensures strict enforcement of environmental laws.

Thus, the correct answer is (B) 2 only.

Mains Model Question


Discuss the role of the National Green Tribunal (NGT) in strengthening environmental governance in India. How has it contributed to balancing economic development with ecological sustainability?

The National Green Tribunal (NGT), established under the NGT Act, 2010, has played a

transformative role in strengthening environmental governance in India. As a specialized judicial body, it provides an effective and expeditious resolution to environmental disputes, ensuring strict adherence to environmental laws and policies. With its wide jurisdiction covering cases related to pollution, biodiversity conservation, deforestation, and hazardous waste management, the NGT has emerged as a crucial institution in India's legal framework for environmental protection.

National Green Tribunal (NGT)

TDS (total dissolved solids) is a measure of all organic and inorganic substances in a water sample



WHAT TDS VALUES MEAN	
<300mg/litre	Excellent to drink
300-500mg/l	Good
600-900 mg/l	Fair
900-1200mg/l	Poor
>1200mg/l	Unacceptable

WHAT NGT SAID Centre must ban ROs in areas where TDS is below 500mg/l, set conditions for recovery of water and reuse in RO purifiers. ROs waste nearly 75% of water

- ⊙ **National Green Tribunal (NGT)** that banned the use of reverse osmosis (RO) systems where drinking water supply had total dissolved solids (TDS) less than 500 mg per litre
- ⊙ Osmosis involves 'a solvent (such as water) naturally moving from an area of low solute concentration, through a membrane, to an area of high solute concentration.
- ⊙ A reverse osmosis system applies an external pressure to reverse the natural flow of solvent and so seawater or brackish water is pressurised against one surface of the membrane, causing salt-depleted water to move across the membrane, releasing clean water from the low-pressure side'.

One of its key contributions lies in enforcing the principle of sustainable development. The tribunal has balanced economic growth with ecological sustainability by ensuring that industrial and infrastructural projects comply with environmental regulations. Through landmark judgments, such as the ban on 10-year-old diesel vehicles in Delhi-NCR and the penalization of polluting industries, the NGT has set strong precedents for environmental responsibility. Its proactive stance in holding both governmental and private entities

PRAGNYA BHARATHI: Detailed News Analysis (DNA)

accountable has made environmental clearance processes more transparent and legally robust.

Moreover, the NGT's emphasis on the 'polluter pays' principle and precautionary measures has significantly enhanced environmental governance. By fast-tracking cases and ensuring the implementation of existing laws, it has reduced bureaucratic delays in environmental litigation. However, challenges persist, including limited jurisdiction and the lack of direct enforcement mechanisms, which sometimes hinder the effective execution of its orders.

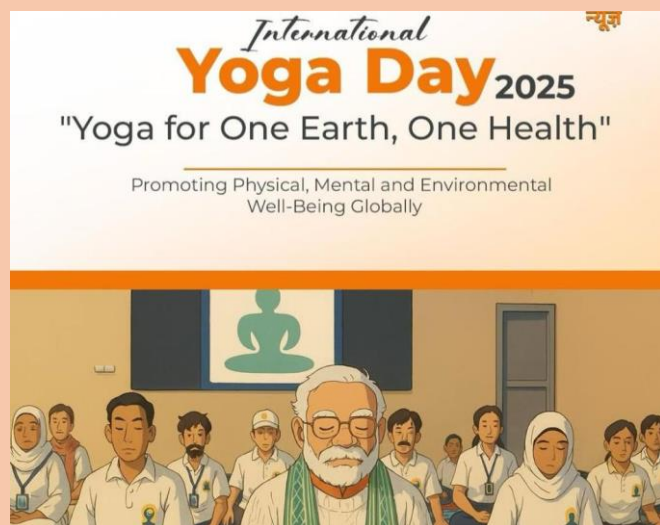
Despite these challenges, the NGT remains a cornerstone of India's environmental governance. Its ability to integrate legal, scientific, and policy-based perspectives ensures that development does not come at the cost of irreversible environmental damage. Strengthening its institutional capacity and expanding its jurisdiction can further enhance its role in achieving a sustainable and ecologically responsible developmental model for India.

Topic : Yoga for One Earth, One Health: International Day of Yoga (IDY) 2025

Relevance : GS Paper 3 Sustainable Health

Source : PIB

The Prime Minister of India, Shri Narendra Modi, in his latest Mann Ki Baat address, emphasized the growing global curiosity about Yoga and traditional Indian medicine. He announced that the theme for International Day of Yoga (IDY) 2025 would be '**Yoga for One Earth, One Health**', reflecting India's commitment to promoting health and sustainability through Yoga. This theme underlines the holistic impact of Yoga on physical, mental, and environmental well-being and aligns with India's broader vision of a healthier and more sustainable world.

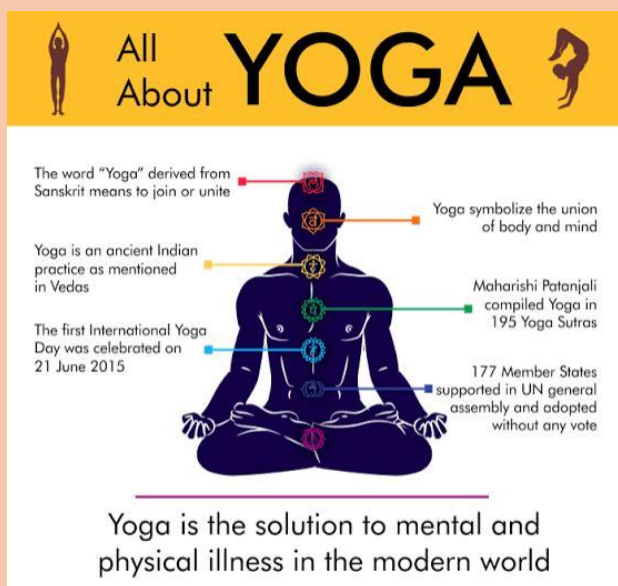
**India's Global Leadership in Yoga Promotion**

The International Day of Yoga has grown exponentially since its inception in 2015, following India's proposal to the United Nations in 2014. Over the past decade, IDY has transformed into a global wellness movement, uniting millions across the world. The Prime Minister reiterated how Yoga and Ayurveda are gaining widespread popularity internationally, particularly in South America, where Ayurveda is witnessing a surge in acceptance. He highlighted the efforts of 'Somos India,' a team that has been promoting Yoga and Ayurveda in Spanish-speaking countries through treatment programs and educational initiatives.

The 100-Day Countdown and Preparations for IDY 2025

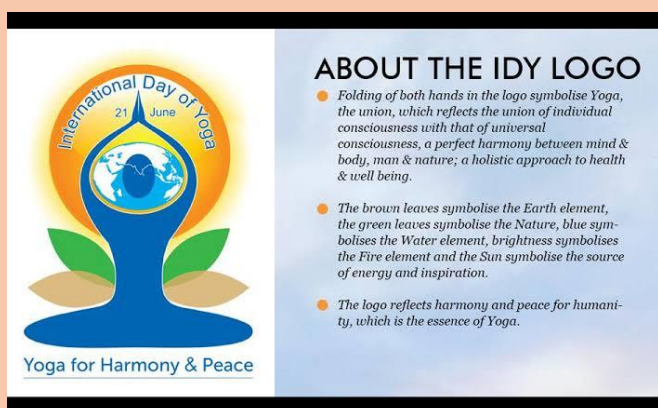
The Morarji Desai National Institute of Yoga (MDNIY), under the Ministry of Ayush, has been entrusted with organizing the 11th edition of IDY. The 100-day countdown to IDY 2025 began with a grand Yogamahotsav event in New Delhi on March 13, 2025. During the countdown, various activities are being held to encourage people to incorporate Yoga into their daily routines. The Prime Minister urged individuals to begin their Yoga journey now, reinforcing that it is never too late to start embracing this ancient practice.

PRAGNYA BHARATHI: Detailed News Analysis (DNA)



Signature Events for IDY 2025

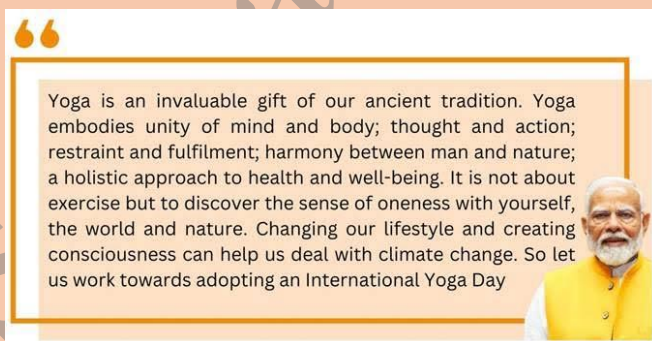
This year's celebration will feature **ten unique signature events** to ensure a more inclusive and far-reaching impact:



- **Yoga Sangama** – A synchronized Yoga demonstration at 10,000 locations, aiming for a world record.
- **Yoga Bandhan** – Global partnerships with 10 countries to host Yoga sessions at iconic landmarks.
- **Yoga Parks** – Development of 1,000 Yoga Parks for long-term community engagement.
- **Yoga Samavesh** – Special Yoga programs for Divyangjan (persons with

disabilities), senior citizens, children, and marginalized groups.

- **Yoga Prabhava** – A decadal impact assessment on Yoga's role in public health.
- **Yoga Connect** – A Virtual Global Yoga Summit featuring renowned Yoga experts and healthcare professionals.
- **Harit Yoga** – A sustainability-driven initiative combining Yoga with tree planting and clean-up drives.
- **Yoga Unplugged** – An event to attract young people to Yoga through innovative formats.



- **Yoga Maha Kumbh** – A week-long festival across 10 locations, culminating in a central celebration led by the Prime Minister.
- **Samyogam** – A 100-day initiative integrating Yoga with modern healthcare for holistic wellness.

The Journey of International Day of Yoga: Key Milestones

Over the years, IDY has witnessed remarkable milestones, shaping it into a global movement:

- **2015 (New Delhi):** The first IDY at Rajpath set two Guinness World Records with 35,985 participants performing Yoga.
- **2016 (Chandigarh):** Yoga for Divyangjan was introduced, and the

PRAGNYA BHARATHI: Detailed News Analysis (DNA)

event emphasized managing diabetes through Yoga.

- **2017 (Lucknow):** PM Modi practiced Yoga with 51,000 participants, highlighting its affordability as 'health insurance.'
- **2018 (Dehradun):** ISRO launched BHUVAN-YOGA and Yoga Locator apps, expanding the digital outreach of Yoga.
- **2019 (Ranchi):** IDY focused on 'Yoga for Heart Care,' promoting eco-friendly Yoga accessories benefiting Khadi artisans.

pledging to Yoga, with 24.53 crore global participants.

The Growing Global Impact of Yoga



- **2020 (Virtual Edition):** Due to COVID-19, 12.06 crore people participated online. The 'My Life, My Yoga' contest engaged participants from 130 countries.
- **2021 (Virtual Edition):** Themed 'Yoga for Wellness,' with iconic celebrations at Times Square, the Eiffel Tower, and Tokyo Skytree.
- **2022 (Mysuru):** Introduced the 'Guardian Ring' Yoga relay and a VR-powered digital exhibition.
- **2023 (Jabalpur & UN HQ, New York):** The 'Ocean Ring of Yoga' was introduced, covering 35,000 km, with 23.44 crore participants worldwide.
- **2024 (Srinagar):** Guinness World Record set with 25.93 lakh people

Yoga has become a symbol of India's soft power and a tool for diplomacy, fostering international collaboration. Countries worldwide have embraced Yoga as an integral part of their wellness strategies. The UN's adoption of June 21 as IDY highlights Yoga's universal appeal and effectiveness in promoting health and inner peace. Yoga's growing acceptance in the West and developing nations is a testament to its scientific and holistic benefits. Its inclusion in public health policies, corporate wellness programs, and school curricula signifies its expanding role beyond traditional settings.

Future Prospects

As the world gears up for International Yoga Day 2025, the theme 'Yoga for One Earth, One Health' encapsulates India's vision for a sustainable and healthy future. Yoga transcends geographical and cultural boundaries, serving as a bridge between traditional wisdom and modern healthcare. With extensive preparations underway, IDY

PRAGNYA BHARATHI: Detailed News Analysis (DNA)

2025 promises to be the most inclusive and expansive edition yet, reinforcing Yoga's profound impact on individual and global well-being. The Prime Minister's call to embrace Yoga not only reflects India's cultural heritage but also offers a pathway to achieving harmony between humans and nature, making Yoga a true global movement for holistic health.

Prelims Practice Question:

Consider the following statements regarding the International Day of Yoga (IDY) 2025:

1. The theme for IDY 2025 is "Yoga for One Earth, One Health."
2. The Morarji Desai National Institute of Yoga (MDNIY) is responsible for organizing IDY 2025.
3. IDY was first celebrated in 2014 after the United Nations adopted India's proposal.
4. The **Yoga Maha Kumbh** event under IDY 2025 is a week-long festival held in a single location.

Which of the statements given above is/are correct?

- A) 1 and 2 only
- B) 1, 2, and 4 only
- C) 3 and 4 only
- D) 1, 2, 3, and 4

Answer:

B) 1, 2, and 4 only

Explanation:

- **Statement 1 is correct:** The theme for IDY 2025 is "Yoga for One Earth, One Health."
- **Statement 2 is correct:** The Morarji Desai National Institute of Yoga (MDNIY), under the Ministry of Ayush, is organizing the event.

- **Statement 3 is incorrect:** IDY was first celebrated in 2015, after the UN adopted India's proposal in 2014.
- **Statement 4 is correct:** The **Yoga Maha Kumbh** is a week-long festival across 10 locations, culminating in a central event.

Mains Model Question:

"The International Day of Yoga (IDY) has evolved into a global movement promoting health, wellness, and sustainability. Discuss the significance of IDY, India's role in its promotion, and its impact on global well-being."

The International Day of Yoga (IDY) has emerged as a significant global initiative, highlighting the importance of holistic well-being. Recognized by the United Nations in 2014 following India's proposal, IDY is celebrated on June 21 each year. Over the past decade, it has grown into a worldwide movement, with millions participating across countries. The theme for IDY 2025, "Yoga for One Earth, One Health," underscores the connection between human health and planetary well-being.

India has played a pivotal role in the promotion of Yoga, positioning it as a scientific, cultural, and spiritual practice. Under the leadership of Prime Minister Narendra Modi, Yoga has gained prominence in global health discussions. The Morarji Desai National Institute of Yoga (MDNIY) has been entrusted with organizing large-scale events, including synchronized Yoga demonstrations, partnerships with international organizations, and research initiatives. The establishment of *Yoga Parks*, *Harit Yoga*, and *Yoga Maha Kumbh* are efforts to integrate Yoga into daily life and public health frameworks.

The impact of IDY extends beyond physical fitness, influencing mental health, stress reduction, and lifestyle diseases. The practice

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of Yoga has been integrated into modern healthcare, with hospitals and wellness centers adopting it as a complementary therapy. The rise of Ayurveda and traditional medicine in different parts of the world, especially in South America and Europe, further signifies its acceptance.

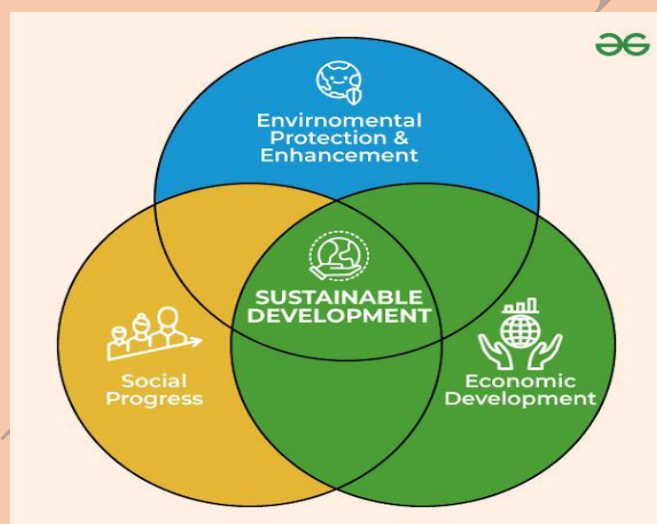
IDY also contributes to sustainability through eco-friendly initiatives like tree planting and awareness campaigns. As a soft power tool, Yoga has strengthened India's diplomatic outreach, fostering cultural ties with numerous countries. The growing participation in IDY reflects a shift towards preventive healthcare, emphasizing a holistic approach to well-being. By aligning traditional knowledge with modern scientific validation, Yoga continues to inspire a healthier and more balanced global society.

Topic : Environmental Protection and Sustainability

Relevance : GS Paper 3 Environmental science

Source : PIB

Context :



The Vice President of India, in his valedictory address at the National Conference on Environment 2025, emphasized the urgency

of addressing environmental challenges, particularly climate change. He underscored the role of institutions like the National Green Tribunal (NGT) in ensuring sustainable environmental governance. The speech highlighted India's ancient cultural ethos, which inherently supports environmental conservation, and called for a global collaborative approach to environmental sustainability.

Key Themes from the Speech

1. **Existential Nature of Climate Change**
 - The Vice President described climate change as an unprecedented existential challenge requiring immediate and collective action.
 - He highlighted the misconception that someone else will fix environmental problems, stressing that every individual and institution must contribute.
2. **India's Cultural and Civilizational Legacy**
 - India has historically lived in harmony with nature, where trees were revered, rivers worshipped, and waste was minimal.
 - Vedic literature and Gandhian philosophy emphasize minimal consumption and sustainable living.
3. **Role of the National Green Tribunal (NGT)**
 - India was among the first three countries globally to establish an environmental tribunal like the NGT.
 - The NGT has been instrumental in catalyzing environmental awareness and legal action to address ecological concerns.

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- India has pioneered major environmental initiatives that set an example for the world.



4. The Need for Sustainable Practices

- The Vice President called for optimal utilization of natural resources and sustainable economic practices.
- He emphasized that environmental protection should not be an afterthought but a proactive priority.

5. Global Responsibility and Cooperation

- Developed nations must integrate planetary health into their policies rather than isolate themselves with temporary solutions.
- Environmental security should also be a factor in nuclear policy, given the ecological risks associated with weapons systems.

6. India's Role as a Global Leader

- The Vice President highlighted India's proactive approach to meeting the Paris Agreement commitments ahead of schedule.

Indian Government Initiatives in Environmental Protection and Sustainability National Green Tribunal (NGT)

The establishment of the **National Green Tribunal (NGT)** is a landmark initiative in India's environmental governance. The NGT was set up to provide a specialized forum for handling environmental disputes and issues. The Tribunal plays a pivotal role in ensuring environmental justice and has accelerated the process of addressing environmental violations through scientific expertise. It holds individuals and corporations accountable, ensures timely restoration of ecological damage, and promotes sustainable resolutions in environmental matters.

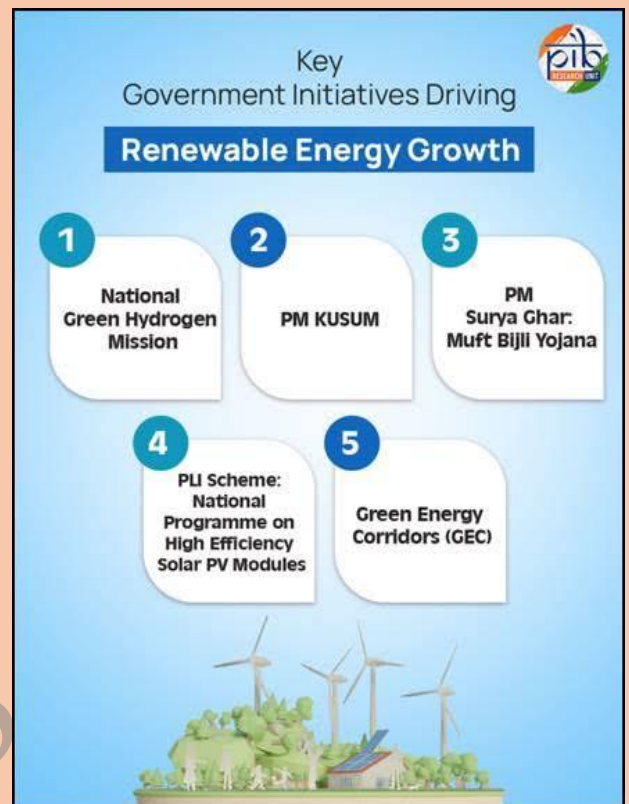
India's Contribution to Climate Change Mitigation

India has committed itself to being a global leader in combating climate change. At the **UNFCCC Paris Climate Change Conference (COP21)**, India pledged to reduce its **carbon intensity** (emissions per unit of GDP) by 33–35% by 2030 compared to 2005 levels. The government has also set ambitious **renewable energy targets**, with an aim to reach **175 GW**

PRAGNYA BHARATHI: Detailed News Analysis (DNA)

of renewable energy capacity by 2022 and 500 GW by 2030.

practices are climate-resilient and sustainable.



National Action Plan on Climate Change (NAPCC)

India's National Action Plan on Climate Change (NAPCC) is a comprehensive policy framework to address climate change. It consists of eight national missions, each focused on a different aspect of sustainability:

- **National Solar Mission:** Promotes the use of solar energy to reduce dependence on fossil fuels.
- **National Mission for Enhanced Energy Efficiency:** Encourages energy efficiency and conservation across industries.
- **National Mission on Sustainable Agriculture:** Ensures that agricultural

- **National Water Mission:** Focuses on the sustainable management of water resources.
- **National Mission for Sustainable Habitat:** Aims to promote urban sustainability by reducing dependence on fossil fuels and creating green spaces.
- **National Mission for a Green India:** Seeks to increase the forest cover and protect biodiversity.
- **National Mission for Sustainable Transport:** Focuses on promoting public transport and non-motorized transport.
- **National Mission on Strategic Knowledge for Climate Change:** Encourages research and data collection on climate change impacts.

PRAGNYA BHARATHI: Detailed News Analysis (DNA)

Clean Energy Initiatives

The Indian government has actively promoted **clean energy** to reduce reliance on fossil fuels. These initiatives include:



- **Solar Power:** India is one of the world's fastest-growing markets for solar power. In recent years, solar power capacity has expanded significantly, from a few gigawatts in 2010 to over **100 GW** by 2025. India also launched the **International Solar Alliance (ISA)**, an initiative aimed at facilitating the global transition to solar energy.
- **Wind Power:** India is a global leader in wind power, with over **38 GW** of installed capacity, primarily along its coastal regions.
- **Biofuels and Electric Vehicles:** The government has promoted the use of biofuels and electric vehicles as part of its energy diversification strategy. The **National Biofuels Policy** aims to integrate biofuels into the energy mix, while the **Faster Adoption and Manufacturing of Hybrid and Electric Vehicles (FAME)** initiative has provided subsidies to encourage EV adoption.

Swachh Bharat Mission

The **Swachh Bharat Mission (Clean India Mission)** is one of the largest cleanliness and sanitation campaigns globally. It aims to

eliminate open defecation, improve solid waste management, and promote cleanliness and hygiene in both rural and urban areas. Under this mission, millions of toilets have been built across the country, significantly improving sanitation levels and reducing the environmental impact of untreated waste.

Afforestation and Biodiversity Conservation

India has invested heavily in **afforestation** and **biodiversity conservation** through initiatives like the **National Afforestation Programme** and the **Biodiversity Action Plan**. The government has been actively working to increase forest cover, with projects aimed at restoring degraded forests and protecting national parks and wildlife sanctuaries. Furthermore, India has committed to increasing its forest cover to mitigate the effects of climate change.

Water Management and Conservation

Water conservation is a critical issue in India, and the government has launched several initiatives to tackle water scarcity:

- **Namami Gange Programme:** A comprehensive initiative to clean and rejuvenate the **Ganges River**, ensuring the preservation of this vital water resource.
- **Jal Jeevan Mission:** Aiming to provide **safe drinking water** to every rural household, this initiative focuses on sustainable water management and conservation practices.
- **Pradhan Mantri Krishi Sinchayee Yojana (PMKSY):** This program aims to ensure "Har Khet Ko Pani" (water to every field) by improving irrigation infrastructure and ensuring efficient water use in agriculture.

PRAGNYA BHARATHI: Detailed News Analysis (DNA)

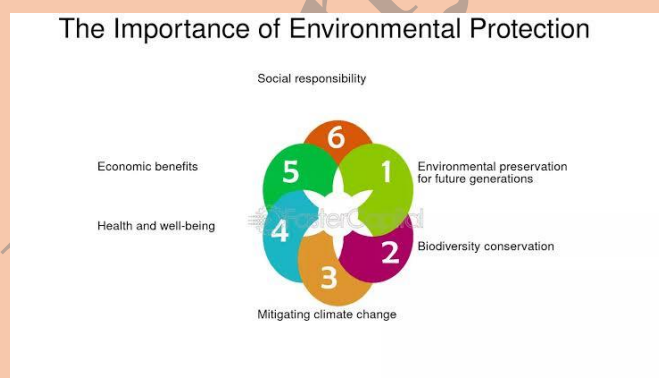
Waste Management Initiatives

The Indian government has launched several initiatives to tackle waste management, including:



- **Plastic Waste Management Rules:** These rules aim to phase out single-use plastics and promote the recycling of plastic waste.
- **Swachh Bharat Mission (Urban):** Focuses on waste management in urban areas, promoting the segregation of waste, composting, and recycling.
- **Extended Producer Responsibility (EPR):** Introduced to ensure that producers are responsible for the entire lifecycle of their products, including post-consumer waste disposal.

Green India Mission



As part of India's efforts to combat climate change and conserve biodiversity, the **Green India Mission** aims to increase forest cover,

restore degraded ecosystems, and enhance biodiversity. The mission involves the active participation of local communities and focuses on afforestation, reforestation, and sustainable land management practices.

Environmental Education and Awareness

The government has focused on raising environmental awareness through various programs and campaigns, including:

- **Bharat Yatra:** An awareness campaign focused on sustainable development.
- **National Environmental Awareness Campaign (NEAC):** Engages citizens and communities in understanding environmental issues and adopting eco-friendly practices.

International Environmental Diplomacy

India has been an active participant in global environmental forums, including the **UN Framework Convention on Climate Change (UNFCCC)**, the **Paris Agreement**, and **COP meetings**. India has also championed the cause of climate justice for developing nations, advocating for technology transfer and financial support to mitigate climate change impacts.

Prelims Practice Question:

Q. Which of the following initiatives launched by the Indian government are aimed at promoting environmental sustainability?

1. National Green Tribunal (NGT)
2. National Solar Mission
3. Swachh Bharat Mission
4. National Action Plan on Climate Change (NAPCC)
5. Pradhan Mantri Krishi Sinchayee Yojana (PMKSY)

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Select the correct answer using the codes below:

- A) 1, 2, 3, 4
- B) 1, 2, 3, 5
- C) 2, 3, 4, 5
- D) 1, 2, 4, 5

Answer: A) 1, 2, 3, 4

Explanation:

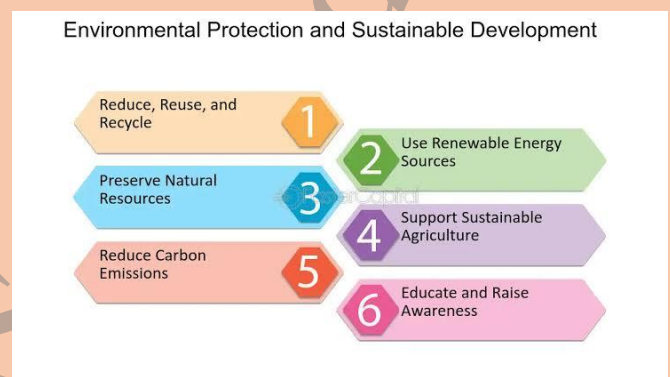
- **National Green Tribunal (NGT):** The NGT is a specialized body created to handle environmental disputes and issues related to the protection of the environment, making it an important part of India's environmental governance and sustainability efforts.
- **National Solar Mission:** This initiative aims to promote the use of solar energy in India, helping to reduce dependence on fossil fuels and contributing significantly to the country's renewable energy goals.
- **Swachh Bharat Mission:** This mission is aimed at improving sanitation and cleanliness across India, which directly contributes to reducing environmental pollution and enhancing public health.
- **National Action Plan on Climate Change (NAPCC):** NAPCC is a comprehensive framework to combat climate change through eight specific national missions focusing on areas such as renewable energy, energy efficiency, and sustainable habitat.
- **Pradhan Mantri Krishi Sinchayee Yojana (PMKSY):** This initiative focuses on water conservation and efficient irrigation practices in agriculture, promoting sustainability in water usage but not directly linked to general environmental sustainability goals like the others listed.

Thus, the correct answer is A) 1, 2, 3, 4.

Mains Model Question:

Q. Discuss the key initiatives taken by the Indian government to promote environmental protection and sustainability.

The Indian government has taken several significant initiatives to address environmental challenges and promote sustainability. These measures aim to balance economic growth with environmental protection, ensuring a sustainable future for the country.



One of the foremost initiatives is the **National Green Tribunal (NGT)**, established in 2010 to provide a specialized forum for fast-tracking environmental disputes. The NGT plays a crucial role in adjudicating cases related to environmental protection, pollution control, and wildlife conservation, thus ensuring accountability in governance and contributing to the enforcement of environmental laws.

The **National Solar Mission**, launched under the **National Action Plan on Climate Change (NAPCC)**, is another landmark initiative. This mission aims to increase the share of solar power in India's energy mix and reduce reliance on fossil fuels. With an ambitious target of achieving 100 GW of solar power capacity by 2022, the initiative aligns with India's broader commitment to reducing greenhouse gas emissions and combating climate change.

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The **Swachh Bharat Mission**, launched in 2014, has had a profound impact on sanitation and waste management in the country. The mission focuses on promoting cleanliness, eliminating open defecation, and managing solid waste in urban and rural areas. By improving sanitation infrastructure and promoting behavior change, it reduces environmental pollution and fosters a healthier environment.

Furthermore, the **National Action Plan on Climate Change (NAPCC)** outlines eight missions that target key areas such as energy efficiency, sustainable agriculture, water conservation, and green cover enhancement. These missions aim to reduce India's vulnerability to climate change while enhancing resilience and sustainability across sectors.

Together, these initiatives reflect the government's holistic approach to environmental protection, blending regulatory frameworks, technological innovations, and societal awareness to safeguard India's natural resources for future generations. They signify India's leadership in global environmental governance, demonstrating a commitment to sustainable development while addressing climate change and ecological degradation.

Topic : Union Budget 2025-26 and India's Nuclear Energy Strategy

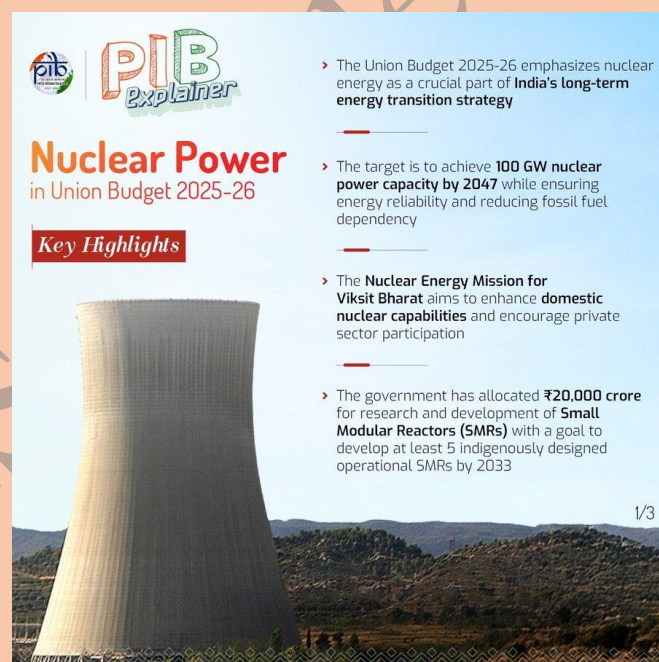
Relevance : GS Paper 3 Science and Technology; Economy

Source : Indian Express

Context :

The **Union Budget 2025-26** has marked a significant milestone in India's energy transition by placing a strong emphasis on nuclear energy. As part of the vision for a "Viksit Bharat" (Developed India), the government has made substantial provisions to enhance the country's nuclear energy infrastructure and capabilities. The

overarching aim is to achieve **100 GW nuclear power capacity by 2047**, positioning nuclear energy as a critical pillar in India's energy mix, which aligns with the country's long-term goals of energy security and sustainability. The Indian government has introduced several initiatives and plans to achieve this vision, including legislative changes, investments in research and development, and fostering public-private partnerships in the nuclear sector.



The infographic features the PIB Explainer logo and a photograph of a nuclear cooling tower. It lists four key highlights from the Union Budget 2025-26 regarding nuclear energy.

- > The Union Budget 2025-26 emphasizes nuclear energy as a crucial part of India's long-term energy transition strategy
- > The target is to achieve **100 GW nuclear power capacity by 2047** while ensuring energy reliability and reducing fossil fuel dependency
- > The **Nuclear Energy Mission for Viksit Bharat** aims to enhance domestic nuclear capabilities and encourage private sector participation
- > The government has allocated **₹20,000 crore** for research and development of **Small Modular Reactors (SMRs)** with a goal to develop at least 5 indigenously designed operational SMRs by 2033

1/3

Nuclear Energy Mission for Viksit Bharat

A central theme of the **Union Budget 2025-26** is the introduction of the **Nuclear Energy Mission for Viksit Bharat**. The mission underscores nuclear energy as a key element for securing energy independence and ensuring environmental sustainability in the coming decades. The mission aims to accelerate India's nuclear power generation capacity by promoting indigenous nuclear technologies, fostering private sector participation, and focusing on advanced reactor designs such as **Small Modular Reactors (SMRs)**.

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Focus on Small Modular Reactors (SMRs) and R&D



One of the significant announcements in the Union Budget is the **allocation of ₹20,000 crore** for the research and development of Small Modular Reactors (SMRs). SMRs are considered a revolutionary step forward in nuclear power generation, offering a smaller, safer, and more flexible solution compared to traditional nuclear reactors. These reactors typically have a power generation capacity ranging from **30 MW to 300 MW**, which makes them scalable and easier to deploy in areas with limited space and infrastructure.

India's expertise in **Pressurized Heavy Water Reactors (PHWRs)** provides a strong foundation for the development of indigenous SMRs. The country aims to develop at least **five operational SMRs by 2033**, marking a major leap in its pursuit of advanced nuclear technologies. These reactors are also being integrated into the strategy to repurpose retiring coal-based power plants, contributing to the de-carbonization of India's energy sector.

Bharat Small Reactors (BSRs) and Collaborations with the Private Sector

The government is also focused on expanding the role of **Bharat Small Reactors (BSRs)**, which are **220 MW Pressurized Heavy Water Reactors (PHWRs)** that are being upgraded to suit modern demands. These reactors have a proven track record for safety and performance. The BSRs will be deployed in partnership with the private sector, where the private entities will provide land, cooling water, and capital, while the **Nuclear Power Corporation of India Limited (NPCIL)** will oversee design, quality assurance, and operational management. This model of private sector collaboration is intended to reduce capital costs, accelerate deployment, and enhance the efficiency of India's nuclear energy sector.

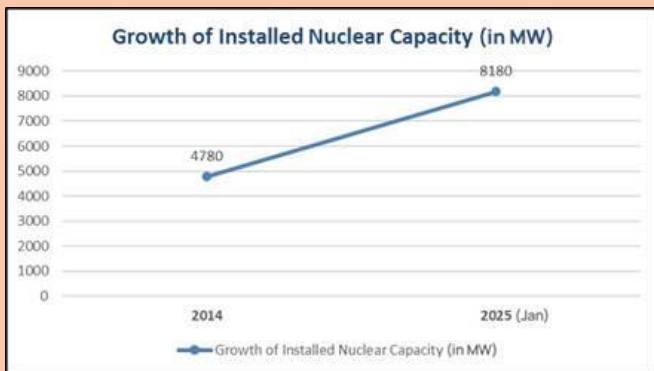
Legal and Legislative Reforms for Investment and Innovation



To ensure the success of these ambitious plans, the Union Budget has proposed amendments to key legislative frameworks such as the **Atomic Energy Act** and the **Civil Liability for Nuclear Damage Act**. These reforms are designed to encourage private sector investments in nuclear power projects by creating a more favorable legal environment and ensuring investor confidence. By enabling private players to

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participate in the design, construction, and operation of nuclear plants, the government seeks to build a more diverse and robust nuclear energy ecosystem.

Safety and Sustainability in Nuclear Energy Development

Safety remains a cornerstone of India's nuclear energy policy. Nuclear power plants in India are operated with strict safety protocols, and radiation levels are consistently well below global benchmarks. The government's commitment to securing the nuclear energy sector is evident in the development of indigenous technologies, as well as continuous monitoring and regulation to prevent accidents and safeguard the public.

Recent Developments in India's Nuclear Energy Sector

Recent strides in India's nuclear energy capacity further highlight the government's focus on enhancing its nuclear power infrastructure. Some of the notable developments include:

- 1. Discovery of New Uranium Deposits:** In January 2025, a new uranium deposit was discovered in the **Jaduguda Mines**, which is expected to increase the life of India's uranium resources by more than fifty years. This discovery will be critical in ensuring the long-term sustainability of India's nuclear power plants.

- 2. Indigenous Nuclear Reactor Milestones:** India's **Prototype Fast Breeder Reactor (PFBR)**, which is capable of generating **500 MW**, achieved significant milestones in 2024, such as the successful commissioning of sodium pumps and core loading. This marks an essential step towards achieving a closed fuel cycle, which is vital for India's nuclear energy sustainability.
- 3. Nuclear Power Plant Expansion:** The government has greenlit the construction of ten new nuclear reactors, with a combined capacity of **8,000 MW**, scheduled to be completed by **2031-32**. This includes reactors in Gujarat, Rajasthan, Tamil Nadu, Haryana, Karnataka, and Madhya Pradesh.
- 4. Nuclear Power Collaboration with NTPC:** The Nuclear Power Corporation of India Limited (NPCIL) and National Thermal Power Corporation (NTPC) have signed a joint venture agreement to develop nuclear power plants under the legal framework of the **Atomic Energy Act (1962)**. This partnership is expected to further expand India's nuclear power capacity, with plans for a **4x700 MWe PHWR** plant in Rajasthan.

India's Position in Global Nuclear Energy Landscape

India's commitment to nuclear energy has significantly enhanced its stature on the global stage. As of **January 2025**, India's nuclear capacity stands at **8,180 MW**, and the country aims to expand this to **22,480 MW** by **2031-32**. With over **20 operational nuclear reactors** and ongoing expansion plans, India is steadily increasing its role as a major player in global nuclear energy.

India's leadership in **indigenous nuclear technology** and its ambitious nuclear power

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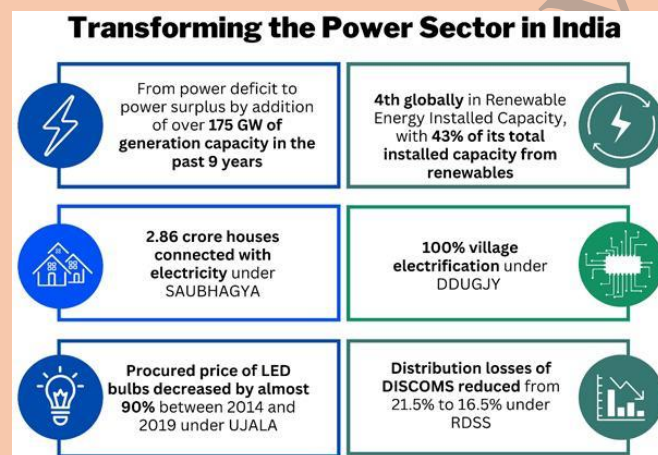
targets have made it a prominent participant in global nuclear governance. The country is also active in **international collaborations** to promote safe and secure nuclear energy, including its participation in organizations like the **International Atomic Energy Agency (IAEA)** and its commitment to the **Non-Proliferation Treaty (NPT)** framework.

State	Location	Project	Capacity (MW)
Projects Under Construction / Commissioning			
Rajasthan	Rawatbhata	RAPP-7&8	2 X 700
Tamil Nadu	Kudankulam	KKNPP-3&4	2 X 1000
		KKNPP-5&6	2 X 1000
	Kalpakkam	PFBR#	1 X 500
Haryana	Gorakhpur	GHAVP-1&2	2 X 700
Projects Under Pre-Project Activities			
Karnataka	Kaiga	Kaiga-5&6	2 X 700
Haryana	Gorakhpur	GHAVP- 3&4	2 X 700
Madhya Pradesh	Chutka	Chutka-1&2	2 X 700
Rajasthan	Mahi Banswara	Mahi Banswara-1&2	2 X 700

India's nuclear energy program is expected to play a pivotal role in achieving its **climate change goals**, particularly its commitment to generating **500 GW of non-fossil fuel-based energy by 2030** and meeting **50%** of its energy requirements from renewable sources. Nuclear energy, with its potential for large-scale, low-carbon electricity generation, is seen as a critical component of this strategy.

The **Union Budget 2025-26** has laid the foundation for an ambitious nuclear energy future for India. With a focus on indigenous technologies, strategic private sector partnerships, and legislative reforms, India aims to make nuclear power a significant part of its energy transition. By fostering innovation, safety, and sustainability, India is positioning itself as a global leader in nuclear

energy, aligning its development with the goals of **energy security**, **environmental sustainability**, and **economic growth**. The nuclear energy sector will undoubtedly play a central role in India's journey towards achieving its vision of a **Viksit Bharat by 2047**.



Prelims Practice Question

Q. Consider the following statements about India's nuclear energy strategy as outlined in the Union Budget 2025-26:

- The government has set an ambitious target of **100 GW** of nuclear power capacity by 2047.
- The Nuclear Energy Mission aims to enhance domestic nuclear capabilities and promote private sector participation.
- Small Modular Reactors (SMRs) are expected to be developed by 2033 under the mission, with an allocated fund of ₹20,000 crore for research and development.
- The government plans to use imported nuclear reactors for the Bharat Small Reactors (BSRs).

Which of the above statements are correct?

- A) 1, 2, and 3
B) 1, 2, and 4

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- C) 2, 3, and 4
D) 1, 3, and 4

Answer: A) 1, 2, and 3

Explanation:

- Statement 1 is correct.** The government has set an ambitious target of achieving **100 GW of nuclear power capacity by 2047** as part of its long-term energy strategy.
- Statement 2 is correct.** The **Nuclear Energy Mission for Viksit Bharat** aims to enhance domestic nuclear capabilities, promote private sector participation, and advance the deployment of **Small Modular Reactors (SMRs)**.
- Statement 3 is correct.** The government has allocated **₹20,000 crore** for research and development (R&D) related to **Small Modular Reactors (SMRs)**, with plans to develop **five operational SMRs by 2033**.
- Statement 4 is incorrect.** The Bharat Small Reactors (BSRs) are **indigenous 220 MW Pressurized Heavy Water Reactors (PHWRs)** and not imported. These reactors are part of India's effort to enhance domestic nuclear power capabilities and do not involve imported reactors.

Mains Model Question

Q. Discuss the key provisions of the Union Budget 2025–26 related to nuclear energy and evaluate how they align with India's long-term energy security and environmental goals.

The Union Budget 2025–26 reflects India's commitment to strengthening its nuclear energy sector, positioning nuclear power as a major pillar of the country's energy transition strategy. The budget outlines a comprehensive roadmap for expanding

nuclear energy capacity to 100 GW by 2047, with a focus on indigenous technology and public-private partnerships. One of the central features of this initiative is the introduction of the **Nuclear Energy Mission for Viksit Bharat**, aimed at enhancing domestic nuclear capabilities and achieving energy security. This mission targets the development of **Small Modular Reactors (SMRs)** and other advanced nuclear technologies, which are crucial for reducing carbon emissions and addressing India's growing energy needs.

A major highlight of the budget is the allocation of **₹20,000 crore** for the research and development of SMRs, with the goal of developing at least five operational SMRs by 2033. SMRs are a promising solution to India's energy challenges, as they offer a scalable, cost-effective, and flexible alternative to conventional nuclear reactors. Their small footprint and modular design allow them to be deployed in remote areas, contributing to energy accessibility while minimizing land requirements. Additionally, the budget emphasizes enhancing private sector participation, with amendments to the **Atomic Energy Act** and the **Civil Liability for Nuclear Damage Act** expected to create a favorable investment environment.

The government is also focusing on the development of **Bharat Small Reactors (BSRs)**, which are indigenous 220 MW reactors suited for deployment near industries like steel and aluminum. This initiative will help India meet its goal of generating 500 GW of non-fossil fuel-based energy by 2030, contributing to the country's climate commitments under the Paris Agreement.

Through these provisions, the Union Budget 2025–26 outlines a clear pathway to achieving energy security, reducing dependence on fossil fuels, and advancing India's position in global nuclear technology. These efforts are

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pivotal in realizing a sustainable and self-reliant energy future for India.

Topic : Earthquake Vulnerability in India

Relevance : GS Paper 2 Geography

Source : PIB

Context :

India is highly vulnerable to earthquakes, with approximately **59%** of its geographical area prone to seismic activities. The country is divided into four seismic zones:

59% of India is prone to earthquakes.
 India recorded 159 earthquakes from November 2024 to February 2025, with the latest being a magnitude 4.0 in Delhi on 17th February, raising concerns.
 The Disaster Management Act of 2005 led to the formation of NDMA (National Disaster Management Authority), NDRF (National Disaster Response Force) and SDMA (State Disaster Management Authorities) for efficient disaster response.
 Seismic observatories increased from 80 in 2014 to 168 by February 2025.
 The BhooKamp app was launched for real-time earthquake updates.
 NDMA's Earthquake Risk Indexing (EDRI) project assesses earthquake risks in 50 cities, with plans to cover 16 more cities.

- **Zone V:** Most earthquake-prone area, which includes the Himalayas.
- **Zone II:** Least prone to earthquakes, typically affecting regions with low seismic activity.

Over the years, India has witnessed devastating earthquakes, such as the **1905 Kangra earthquake** in Himachal Pradesh (magnitude 8.0), which resulted in the loss of 19,800 lives, and the **2001 Bhuj earthquake** (magnitude 7.9) in Gujarat, claiming over 12,900 lives. More recently, on **17th February 2025**, a **magnitude 4.0 earthquake** hit **Delhi**, raising concerns about the need for better preparedness.

From **November 2024 to February 2025**, India recorded **159 earthquakes**, highlighting the

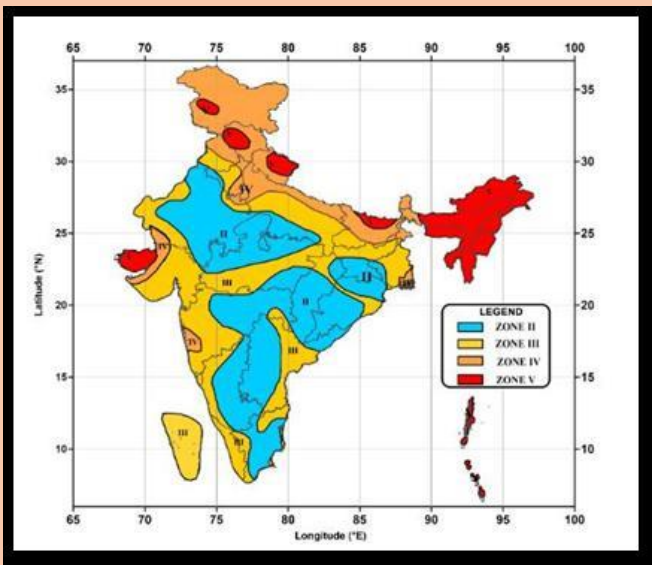
urgency of implementing robust earthquake safety measures and response mechanisms.

Government Initiatives for Earthquake Safety

The Indian government has taken multiple proactive measures to address earthquake risks and strengthen disaster resilience:

- **National Disaster Management Act (2005):** This act led to the formation of critical agencies like:
 - **NDMA (National Disaster Management Authority):** Responsible for policy creation and overall disaster management planning.
 - **NDRF (National Disaster Response Force):** A specialized force created under the Disaster Management Act, tasked with providing emergency response during disasters.
 - **SDMAs (State Disaster Management Authorities):** State-level agencies responsible for implementing disaster management plans.
- **Seismic Monitoring and Preparedness:**
 - **Increase in Seismic Observatories:** From **80** in 2014, India now operates **168 seismic observatories** by February 2025 to monitor earthquake activities.
 - **BhooKamp App:** Launched for real-time earthquake updates, helping citizens stay informed during seismic events.
 - **Earthquake Risk Indexing (EDRI):** This project assesses earthquake risks in 50 cities, with plans to expand it to **16 more cities** in the future. It evaluates hazard, vulnerability, and exposure to risks to guide mitigation measures.

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Key Earthquake Safety Measures and Guidelines

To mitigate earthquake risks, the government has introduced several safety measures and guidelines:

- **Home Owner's Guide (2019):** This guide helps homeowners construct safe and disaster-resilient homes that adhere to earthquake safety standards.
- **Simplified Guidelines (2021):** These offer safety tips for individuals building new homes or purchasing flats in multi-storey buildings, ensuring these structures are more resilient to earthquakes.

Earthquake Early Warning (EEW) Systems

Research on **Early Warning Systems (EWS)** is ongoing, particularly in the **Himalayan region**, which is highly prone to earthquakes. The **National Centre for Seismology (NCS)** records earthquakes and shares the data publicly. The aim is to develop a system that can provide early alerts for earthquakes, allowing people to take preventive actions.

<p>◆ Increase in Seismic Observatories: The number of seismic observatories increased from 80 in 2014 to 168 by February 2025.</p>
<p>◆ Special Program: NDMA aired an earthquake discussion program called "Aapka Ka Samna" on Doordarshan TV in March 2025.</p>
<p>◆ 10-Point Agenda: Prime Minister Narendra Modi proposed a 10-point agenda in 2016 for disaster risk reduction, which aligns with Vision Document 2047 for a disaster-resilient India.</p>
<p>◆ Retrofitting of Buildings: Approximately 59% of India's land area is earthquake-prone, prompting strict enforcement of building code compliance.</p>
<p>◆ Himalayan Region Earthquake Preparedness: The Himalayan region received special attention with the implementation of early warning systems and a well-defined disaster response framework.</p>
<p>◆ Simplified Earthquake Safety Guidelines: In 2021, earthquake safety guidelines were simplified to ensure better infrastructure safety under the Building Code of India.</p>
<p>◆ Risk Transfer Mechanism and Infrastructure Insurance: A system has been established to assess earthquake-induced damage and ensure insurance coverage for affected infrastructure.</p>
<p>◆ Launch of BhooKamp App: BhooKamp is a mobile app of National Center for Seismology (NCS), Ministry of Earth Sciences (MoES), Government of India, which provides real-time earthquake information to the users.</p>

Key Government Agencies and Their Roles

Several key agencies contribute to earthquake preparedness and disaster management:

- **NDRF:** Formed in **2006**, the National Disaster Response Force has grown from **8 Battalions** to **16** today, with over **1,100 personnel per Battalion**. They are crucial in disaster response operations, including earthquakes.
- **National Centre for Seismology (NCS):** Established in **1898**, NCS monitors earthquake activity across India and conducts research on earthquake early warning systems.
- **National Disaster Management Authority (NDMA):** NDMA is responsible for the creation of disaster management policies and strategies, including earthquake preparedness.
- **National Institute of Disaster Management (NIDM):** This body focuses on training and capacity building for disaster management. It provides training, conducts research, and develops human resources in disaster risk reduction.

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Government Assistance in International Earthquake Response

India has also extended **humanitarian assistance** to countries affected by natural disasters, including **Turkey** and **Syria** after the devastating **2023 earthquake**. India deployed NDRF teams, medical personnel, and relief supplies, showcasing the country's commitment to international disaster relief.

Prelims Practice Question

Q. Consider the following statements regarding earthquake preparedness in India:

1. Approximately 59% of India's area is prone to earthquakes, with the Himalayan region being the most active in terms of seismic activity.
2. The National Disaster Management Authority (NDMA) is responsible for setting up the policies for disaster management, while the National Disaster Response Force (NDRF) is tasked with the implementation of these policies at the national level.
3. India has implemented the Earthquake Risk Indexing (EDRI) project to assess earthquake risks in 100 cities, with a focus on hazard, vulnerability, and exposure.
4. The BhooKamp app provides real-time updates on earthquake occurrences to citizens.

Which of the above statements is/are correct?

- A) 1, 2, and 4 only
- B) 1, 3, and 4 only
- C) 1 and 4 only
- D) 1, 2, 3, and 4

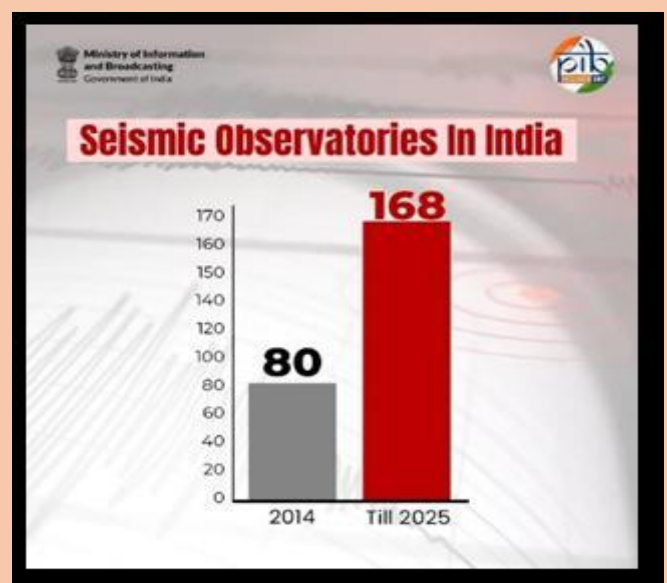
Answer: A) 1, 2, and 4 only

Explanation:

1. **Correct:** Approximately **59%** of India is prone to earthquakes, with the **Himalayan region** being one of the most active seismic areas (Zone V).
2. **Correct:** The **NDMA** (National Disaster Management Authority) is responsible for setting disaster management policies, while the **NDRF** (National Disaster Response Force) is tasked with implementing these policies on the ground during disaster events.
3. **Incorrect:** The **Earthquake Risk Indexing (EDRI)** project has been implemented to assess risks in **50 cities**, not **100 cities**. Phase II of the project aims to expand it to **16 additional cities**.
4. **Correct:** The **BhooKamp app** provides **real-time updates** on earthquakes, helping citizens stay informed of seismic activities.

Mains Model Question

Q. Discuss the measures taken by the Government of India to enhance earthquake preparedness and reduce the risks posed by seismic activities. How effective are these initiatives in ensuring public safety?



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India is highly vulnerable to earthquakes, with approximately 59% of its territory prone to seismic activity. To mitigate the risks and improve disaster preparedness, the government has implemented several initiatives. The **Disaster Management Act of 2005** laid the foundation for the creation of agencies like the **National Disaster Management Authority (NDMA)**, **National Disaster Response Force (NDRF)**, and state-level authorities, which are tasked with planning, response, and recovery efforts during natural calamities. These bodies play a crucial role in formulating policies, ensuring timely responses, and coordinating relief efforts across the country.

Key Earthquake Safety Measures and Research Initiatives

To enhance earthquake resilience, various safety guidelines, early warning systems and risk assessments are being implemented. These initiatives focus on providing safety information, monitoring risks and preparing for future earthquake hazards.

1. **Guidelines for Earthquake Safety: The Home Owner's Guide (2019)** helps homeowners build safe and disaster-resilient homes that meet safety standards. The **Simplified Guidelines (2021)** offer earthquake safety tips for those constructing new homes or buying flats in multi-storey buildings.
2. **Earthquake Early Warning (EEW):** Research on an early warning system is underway in the Himalayan region. NCS records earthquakes of certain magnitudes across India and shares the data publicly on their website.
3. **Earthquake Risk Indexing (EDRI):** NDMA's EDRI project assesses earthquake risks in Indian cities. It evaluates hazard, vulnerability, and exposure to guide mitigation efforts. Phase I covered 50 cities, and Phase II targets 16 more.

A key initiative is the **Earthquake Risk Indexing (EDRI)** project, which assesses earthquake risks in various cities, evaluating hazards, vulnerabilities, and exposure. Initially covering 50 cities, it is expanding to include 16 more cities. This project serves as a valuable tool for policymakers and urban planners to prioritize mitigation measures and strengthen infrastructure in earthquake-prone areas. Additionally, India's seismic observatories, which have grown from 80 in 2014 to 168 by 2025, are integral to monitoring seismic activity and providing real-time data.

The **BhooKamp app** is another effective measure, providing real-time earthquake updates to the public, enabling people to respond swiftly in case of tremors. The **National Centre for Seismology (NCS)** also contributes to enhancing preparedness by conducting research and developing early warning systems, especially in the **Himalayan region**, which is highly vulnerable to earthquakes.

Despite these efforts, challenges remain. Public awareness about earthquake safety and preparedness needs continuous improvement. While infrastructure has been made more resilient in many regions, the construction of safe buildings in vulnerable areas still remains an area of concern. Moreover, continuous research, early warning systems, and timely dissemination of information are essential to reducing casualties and damage during earthquakes. The government's initiatives, while commendable, require sustained efforts to be truly effective in ensuring public safety.