DAILY CURRENT AFFAIRS

21st May 2025

The Hindu Analysis 21st May 2025

Topics Covered

Diplomatic outreach visits begin today, Pg1

Syllabus

GS Paper 2 – International Relations

GS Paper 3 – Internal Security

Diplomatic outreach visits begin today

Three teams will start their journey today and tomorrow, says Ministry; they will highlight disruptions by cross-border terrorism from Pakistan

Kallol Bhattacherjee
NEW DELHI

The first three multi-party delegations to international capitals to brief global community about Operation Sindoor will start their journey on Wednesday and Thursday, the Ministry of External Affairs said on Tuesday.

The delegations, over the next fortnight, will highlight that cross-border terrorism from Pakistan continues to be a major disruptor for India while presenting the Indian doctrine of zero tolerance of terror, said veteran diplomat Syed Akbaruddin, who is part of the diplomatic outreach effort.

CONTINUED ON » PAGE 12

A united front

The multi-party delegations are expected to meet government functionaries, including Ministers, think-tanks and media during their visits to foreign capitals

■ The group led by Janata Dal (United) leader Sanjay Jha will visit Indonesia, Republic of Korea, Japan, Malaysia, and Singapore

■ The team headed by Shrikant Shinde of Shiv Sena will visit UAE, Liberia, Democratic Republic of Congo, and Sierra Leone

■ The delegation led by DMK leader Kanimozhi is set to visit Russia, Spain, Greece, Slovenia, and Latvia

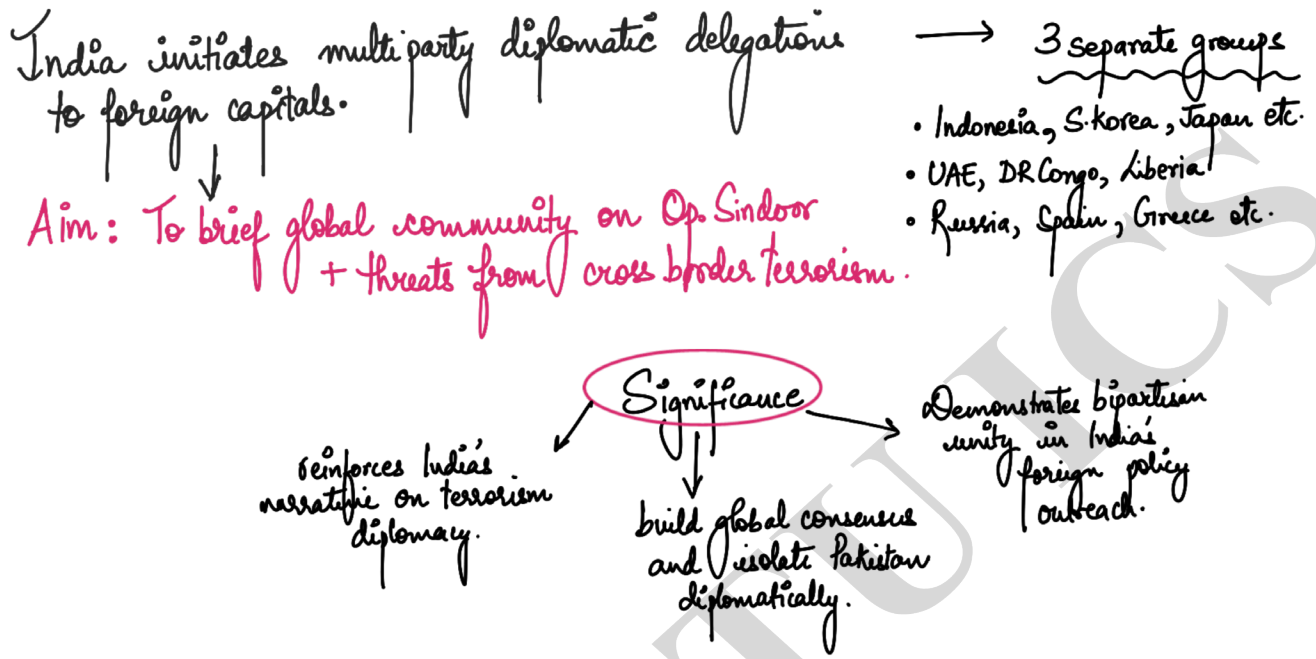
Trinamool, Sena (UBT) relent

The Hindu Bureau
DELHI/KOLKATA

The Trinamool Congress and the Shiv Sena (UBT) have changed their stance on nomination of their MPs to the diplomatic teams after Union Minister Kiren Rijiju reached out to the party leaders on Tuesday. The Trinamool has named Abhishek Banerjee in place of Yusuf Pathan, while the Sena has endorsed Priyanka Chaturvedi.

FULL REPORT ON » PAGE 13

Key points from the article



A tragedy recorded for posterity: inscription near temple in Karnataka lists drought deaths in 1539, Pg. 6

Syllabus

- **GS Paper 1 – Indian Culture:** Indian heritage, Art & Architecture, Inscriptions
- **GS Paper 1 – Geography:** Natural calamities and their impact on society
- **GS Paper 1 – History:** Historical sources and their interpretation

A tragedy recorded for posterity: inscription near temple in Karnataka lists drought deaths in 1539

R. Krishna Kumar
MYSURU

A sculptural inscription discovered near the Chandrashekara temple at Guttala in Haveri district of Karnataka has documented the death of 6,307 people due to drought in the local area, making it the first such historical record of a humanitarian disaster caused by a natural calamity in India.

The discovery has been hailed as a significant addition to India's epigraphic heritage. The inscription is dated Saka 1461, Vikari, Bhadrapada su.5, which corresponds to August 18, 1539 CE, according to K. Munirathnam Reddy, Director, Epigraphy, Archaeological Survey of India (ASI).

In Kannada language

He said the inscription is in the Kannada language and script, and it solemnly records the tragedy, marking it as one of the large-scale natural calamities documented epigraphically in Indian history.

The text, inscribed on a stone slab, states that 6,307 people had perished due to *bara* or drought. It notes that their bodies were buried by Marulaih Odeya, son of Nanideva Odeya of Guttavalala, by carrying them in baskets for the merit of Timmarasa Svami, the ruler of the *seeme* (a territorial division), after paying obeisance to the feet of god Basaveshwara. The inscription is accompanied by a sculpture depicting a person – ostensibly Marulaih Odeya – carrying a basket containing two or three bodies on his head.

Mr. Munirathnam described the findings as a landmark, as the inscription is rare and explicitly documents the human toll of drought. Inscriptions such as the one at Guttala provide an insight into the socio-economic conditions that prevailed during historical periods, and these are often absent in literary texts. Through comparative studies, it may even be possible to understand how communities coped with such calamities, he said.


The 16th century sculptural inscription found in Karnataka.
SPECIAL ARRANGEMENT

A broader study of similar inscriptions across regions and periods can deepen our understanding of the historical impact of natural calamities and the responses they evoked, according to Mr. Munirathnam.

He said it could also help researchers trace climatic patterns, while scholars might uncover details of administrative action or demographic changes based on such records.

The epigraphy branch of the ASI, discovered and copied over 1,000 inscriptions from the length and breadth of India, including in deep jungles during 2024-25. This year, more than 100 inscriptions have been discovered so far.

Key points from the article

- A 16th-century inscription was discovered at the **Chandrashekara temple** in Guttala, Haveri district **(Karnataka)**, documenting 6,307 deaths due to drought in **1539 CE.**
- It is considered the earliest known **epigraphic evidence of a humanitarian disaster** caused by a **natural calamity in Indian history.**
- The inscription is written in **the Kannada language** and script, dated **Saka 1461** (August 18, 1539 CE).
- It records that during the reign of **Immadi Ramasara of Guttavala, Marulaiah Odeya** carried the bodies in baskets and buried them.
- A rare sculpture alongside the inscription depicts a person carrying dead bodies in a basket, serving as a visual representation of the calamity.
  - **Epigraphy:** Study and interpret ancient inscriptions as a source of historical information.
  - **Bara:** Traditional term in Kannada and other Indian languages for famine or drought.
  - **Saka Era:** A historical calendar used in India, beginning in 78 CE, often used in inscriptions.
- The inscription explicitly uses the term bara to denote famine or drought.
- It is valuable for its **socio-economic insights**, shedding light on climatic conditions, demographic impact, and administrative responses of that period.
- It documents **traditional coping mechanisms**, reflecting how communities responded to natural disasters in the past.
- The find can aid researchers in studying historical climate patterns and community resilience.
- Discovered by the Epigraphy Wing of the ASI, which recorded over 1,000 inscriptions in 2024–25.

Significance

→ Highlights how inscriptions act as primary sources for understanding natural disasters & their socio cultural effects.

→ enhances our grasp of India's climate history

→ Interdisciplinary research linking history, archaeology, geography etc.

Trade diplomacy: India's trade restrictions on Bangladesh may backfire, Pg8

Syllabus

- **GS Paper 2** –International Relations
- **GS Paper 3** – Economy

Trade diplomacy

Trade restrictions against Bangladesh will not have much coercive value

In an escalation of bilateral trade-related tensions, India recently announced restrictions on readymade garments and other specified commodities from Bangladesh. The Directorate General of Foreign Trade's announcement targeting Bangladesh's vital apparel sector sent an unmistakable signal that deteriorating political relations have now spilled over into economic ties. By specifically denying Bangladeshi goods access to India's northeast market, New Delhi has delivered a pointed message to Mohammed Yunus, Bangladesh's interim leader, who during his visit to China in March 2025 had invited Chinese access to India's northeast through Bangladesh, describing the northeast as landlocked. While India's discomfiture about Bangladesh-China discussions regarding India's northeast is understandable, this trade restriction may hurt Bangladeshi businesses, largely dependent on garment export, but will do little to aid New Delhi's strategic interests. Bangladesh's recent political turmoil stems from protests against its former elected government, and the interim leadership – struggling with resistant bureaucracy and ongoing instability – has blamed New Delhi due to its perceived close ties with the previous administration led by Sheikh Hasina. The Yunus-led administration's warming up to Pakistan, and its ban on the Awami League – actions that go against its promises to the international community – have worsened relations. The imperative for New Delhi must be to come up with a deft outreach to other political parties in Bangladesh as they prepare for elections. While Mr. Yunus had announced that elections will be held later this year, there is still no clarity on the date.

New Delhi must, in consonance with the rest of the international community, advise the regime to conduct elections quickly. A political gesture of this nature while engaging with multiple stakeholders in Bangladesh's polity is more appropriate than using restrictive moves related to trade, as this would only heighten the anti-India sentiment being fanned by some elements in Bangladesh after the Awami League government's exit. Such radical elements, many of whom have little investment in the restoration of democratic processes, could also create fresh law and order problems that could lead to security issues in the northeast. India should carefully lay out its response keeping in mind that while it has to communicate its displeasure to the Yunus government, it also has to maintain working relations with this administration till a popularly elected government takes charge in Dhaka.

→ India imposes restrictions on Bangladeshi garments & commodities
→ Response to geopolitical concerns → Bangladesh's growing ties with China
→ Restrictions have limited coercive value and could further delineate Dhaka.

Coercive Trade Policy → Using economic measures like tariffs or bans to achieve political or strategic objectives.

Strategic Northeast

Radicalisation Risk

Scheme-based workers, the struggle for an identity, Pg. 8

Syllabus

- **GS Paper 2** – Governance: Welfare Schemes for Vulnerable Sections
- **GS Paper 3** – Inclusive Growth, Labour Reforms, Employment and Social Security

Scheme-based workers, the struggle for an identity

The central government employs millions of regular and contract workers who are recognised as government employees and are in the pay spectrum of the government. The government also employs several types of workers such as Anganwadi workers or AWWs (13,51,104 workers) and Anganwadi helpers or AWHs (9,22,522), Accredited Social Health Activists or ASHAs (10,52,322 workers), and Mid-Day-Meals workers or MDMWs (25,16,688) under The Integrated Child Development Services (ICDS) Scheme since 1975, the National Rural Health Mission (NHRM) and the mid-day meals day scheme. Put together, around 60 million workers work in government schemes.

These schemes are those which carry out social and economic functions by taking care of children and lactating mothers and nutrition aspects. They are also a bridge between the community and the public health system, improving school enrolment and the nutritional health system.

The reality of their existence

Though there has been much recognition of their work (by the Prime Minister and even the World Health Organization), these workers face hardship – they have been denied basic labour market rights such as workers' status, minimum wages and social security. Three basic issues among others have affected scheme-based workers (SBW) – an identity as "workers" just like any government employee, minimum wages and social security. They have adopted three strategies to highlight their plight – strikes, legal action and social dialogue.

Major central trade unions (AITUC, BMS, CITU) have organised the SBWs extensively. Since there are no prescribed wage negotiation timelines, trade unions have gone on frequent strikes over the issue of wage revision at random. State governments are more generous depending more on the strength of unions, their proximity with the party in power, and political factors such as elections. In March 2025, Anganwadis in Kerala called off their 13-day indefinite strike. The frequent and large-sized struggles of and by SBWs is a feat of labour mobilisation in modern times as State governments have not always been kind to striking workers. In fact, the Maharashtra government imposed the Maharashtra Essential Services Maintenance Act in 2017 to curb the right of Anganwadis in the State to go on strike. In a sense, the government has recognised the "essential" nature of work done by Anganwadis.

K.R. Shyam Sundar

is Professor of Practice, Management Development Institute (MDI) Gurgaon

The demand of SBWs, of a labour market identity', is a legitimate one

The judiciary's approach

At the same time, Anganwadis have been knocking on the doors of the judiciary, with some success after initial setbacks. In *State Of Karnataka & Ors vs Ameerbi & Ors* (2006), the Supreme Court held that as Anganwadis do not carry out any function of the state, and do not hold a post under a statute, it did not consider them as workers. This was a judgment that was a blow against the struggles of these workers. But there was judicial relief.

The Court, in 2022, granted that Anganwadis are eligible for gratuity as they are covered under workers/employees under the Payment of Gratuity Act, 1972 (*Maniben Maganbhai Bhariya vs District Development Officer*, 2022). In 2024, the Gujarat High Court (*Adarsh Gujarat Anganwadi Union & Ors. vs State of Gujarat*) observed that Anganwadis perform onerous duties and responsibilities apart from performing important services under the Right to Education Act (RTE) and the National Food Security Act (NSF). It directed the central and State governments to jointly frame a policy under which the AWWs and AWHs could be regularised as Class III and Class IV grade State employees. Until then, they would be paid minimum wages (Class III and Class IV, respectively).

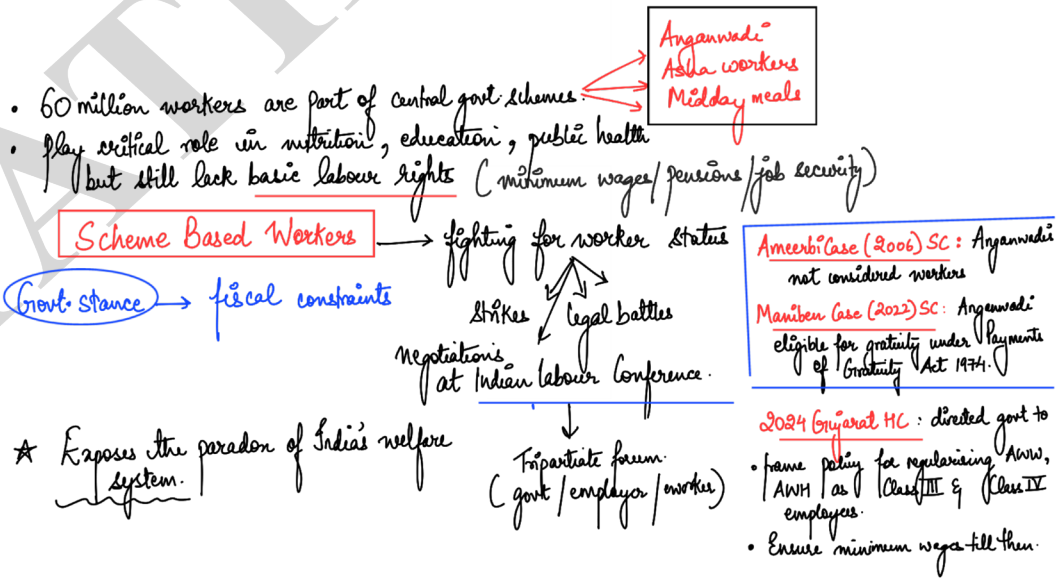
The central trade unions have been raising the issues concerning the SBWs at the tripartite forum, the Indian Labour Conference (ILC), which is a social dialogue forum created during colonial rule. It is notable that in the 45th ILC, its tripartite Conference Committee made unanimous recommendations to the central government to treat the SBWs as "workers" and not as volunteers or honorary workers, and pay them minimum wages, pension, health insurance and provident fund, among others.

The usual stand

The government is concerned with the huge cost implications as the employment of SBWs as government employees is set to grow as the population grows. On the other hand, the Labour Minister, in 2016, said in the Rajya Sabha, that the recommendations require long-time policy formulation and that there can be no fixed time-line for their implementation. Policy delay and avoidance at best – and outright denial policy at worst – has been the clever policy of the central government, irrespective of the party in power. The government has been dodging these important issues. On the other hand, there are attempts to privatise the Integrated Child Development Services Scheme (ICDS). SBW organisations have been waging relentless struggles at all levels to oppose the privatisation of the ICDS and strengthen the labour rights of SBWs. Their struggle, which involves multiple issues, will go on.

It is not "applause" that they seek but "worker" status. It is an existential struggle. It is interesting to note that in both the traditional and modern (gig) sectors, workers are battling for their labour market "identities" as "workers" and earn "wages and not "honorarium". It is not charity that they seek but a legitimate demand for "workers" status by dint of hard work over long hours.

Key points from the article



Progress should not just be fast but futureproof, Pg.9

Syllabus

- **GS Paper 3 – Environment:** Climate Change, Adaptation Strategies
- **GS Paper 2 – Governance:** Disaster Management, Policy Implementation
- **Essay Paper –** Topics on Sustainable Development and Resilience

Progress should not just be fast but future-proof

India's climate future is not written in the stars – it is written in the rising temperatures, erratic monsoons, and intensifying disasters. The question is: what are we doing about it? The World Bank states that more than 80% of India's population lives in districts at risk of climate-induced disasters. From unrelenting monsoon floods in the north-east to heat-induced crop failures in central India, these events are no longer isolated incidents – they are systemic threats to economic stability, public health, and national security. Yet, despite mounting evidence, India remains vulnerable due to gaps in risk assessment and preparedness. The lack of a comprehensive framework to evaluate and predict climate physical risks (CPRs) means that adaptation strategies are reactive rather than proactive.

Dr. Sanjena N.D.

Consultant at NITI Aayog's Green Transition, Energy, and Climate Change vertical. Views are personal and do not reflect the official position of NITI Aayog

Growing climate physical risks

As climate change accelerates, extreme weather events are becoming more frequent and severe. CPRs extend beyond natural disasters, encompassing acute shocks, such as floods and heatwaves, and chronic stresses, such as shifting monsoon patterns and prolonged droughts. While disaster early warning systems and weather forecasts help mitigate immediate losses, CPRs require a long-term approach. Unlike short-term weather forecasts, climate projections analyse long-term trends, enabling policymakers to prepare for evolving climate hazards.

Global climate action is caught between prevention and cure – mitigation, which reduces emissions, and adaptation, which prepares for its inevitable impacts. While adaptation has long been considered a priority for the Global South, wildfires, heatwaves, and cyclones now also test the resilience of the Global North, making it clear that adaptation is a universal necessity. Yet, funding remains skewed towards mitigation, with most resources directed towards renewable energy and decarbonisation over adaptation measures like resilient infrastructure. However, investing in adaptation is not just about survival but also economically prudent. The UN Environment Programme estimates that every $1 invested in adaptation yields a $4 return through reduced economic losses and lower disaster recovery costs.

> The lack of a comprehensive framework to evaluate and predict climate physical risks means that adaptation strategies are reactive rather than proactive in India

CPRs are not just about extreme weather events but also about how exposed and vulnerable communities, businesses, and infrastructure are to them. The Intergovernmental Panel on Climate Change provides a clear framework: the expected value of CPR is a function of hazard, exposure, and vulnerability. Hazards include floods, cyclones, and heatwaves. Exposure determines who and what is at risk. Vulnerability reflects a system's ability to withstand and recover. Together, these define the true scale of climate risk.

To safeguard financial stability, regulatory bodies worldwide are shifting from voluntary climate risk disclosures to mandatory reporting. In India, the Reserve Bank of India is integrating climate risks into its regulatory framework, while the IFRS ISSB S2 sets global standards for disclosing CPRs underscoring that assessing these risks is now central to business continuity, not just environmental responsibility.

Despite the urgency, India's approach to CPR assessments remains fragmented. While countries such as the U.S., U.K., and New Zealand have national frameworks that directly inform policy and finance, India's efforts are dispersed across government agencies, research institutions, and private platforms, each using different methodologies and hazards of focus. Although India has studies such as flood maps from IIT Gandhinagar, vulnerability atlases from the India Meteorological Department, and disaster frameworks from the National Institute of Disaster Management, there is no unified system to consolidate these insights. Reliable CPR projections are further hindered by the limitations of global climate models such as Representative Concentration Pathways and Shared Socioeconomic Pathways, which fail to capture India's hyper-local climate realities. Without a central repository for standardised climate risk data, businesses and government agencies struggle to make informed decisions.

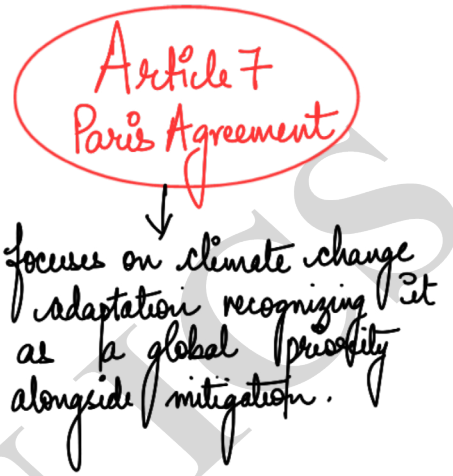
Steps taken to fill the gaps

Recognising these gaps, India has initiated steps towards factoring in climate hazards in its National Adaptation Plan (NAP) in line with Article 7 of the Paris Agreement, which mandates all nations to establish NAPs by 2025 and show progress by 2030. To facilitate this, India formulated an Adaptation Communication and submitted its first report in 2023. A more comprehensive NAP report is underway, covering nine thematic sectors with district-level granularity.

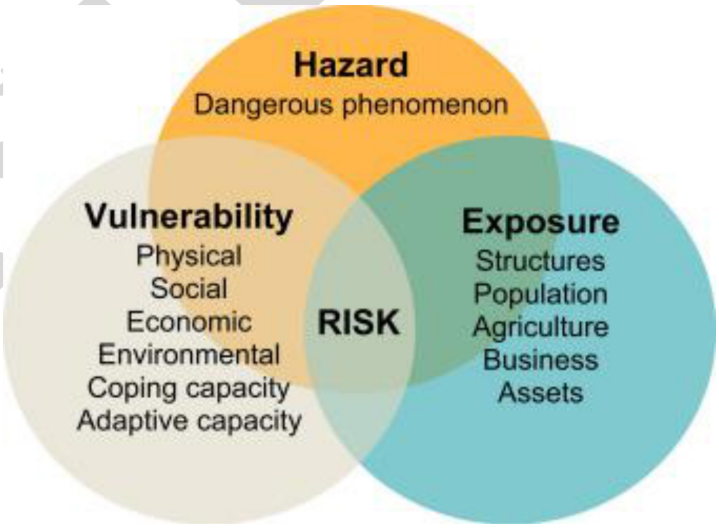
While this is a great start, India must go further by building a CPR assessment tool that supports both public and private decision-making. This will enable the public sector to design climate-resilient policies, guide infrastructure planning, and allocate resources effectively. It will also play a crucial role for the private sector in assessing risks across value chains, supporting operational and expansion planning, and meeting growing investor expectations. Therefore, a India-specific tool that combines localised climate modelling, granular risk assessment, a centralised climate risk data hub, and transparent, science-based methods with iterative feedback mechanisms is imperative. As India charts its path towards Viksit Bharat, robust climate risk assessments will ensure that progress isn't just fast, but future-proof.

Key points from the article

- **Over 80% of India's population** resides in **climate-vulnerable districts.**
- India **lacks a comprehensive framework** for climate risk assessment.
- Systemic climate threats include **floods, heatwaves, erratic monsoons**, **and droughts**, impacting **health, economy, and national security.**
- **India's climate adaptation efforts** are largely **reactive**, not **predictive or preventive.**
- According to the **UN Environment Programme**, every **$1 invested in adaptation yields $4** in economic returns.
- **A National Adaptation Plan (NAP)** was submitted in **2023**, in line with **Article 7 of the Paris Agreement.**



- **Climate Physical Risks (CPRs)** include both **sudden disasters and long-term issues** like water scarcity and changing disease patterns.
- **CPR = Hazard × Exposure × Vulnerability** — a formula used to assess risk and guide adaptation planning.
- India relies on **fragmented data** from multiple agencies; there's **no centralised national risk data hub.**
- Countries like the **U.S., U.K., and New Zealand** embed CPRs into their **financial, infrastructure, and disaster management policies.**



- **India's financial regulators (e.g. SEBI, RBI)** are transitioning from **voluntary to mandatory** climate risk disclosures.
- There is a pressing need to **equip both public and private sectors** to use CPR data for **future-proofing infrastructure and services.**

After a gap of two years, Shirui Lily Festival begins on a thorny note in Manipur, Pg12

Syllabus

- **GS Paper 1** – Indian Society: Communalism, Regionalism, Ethnic Conflicts
- **GS Paper 3** – Internal Security

After a gap of two years, Shirui Lily Festival begins on thorny note in Manipur

The Hindu Bureau
GUWAHATI

Security personnel allegedly demanded journalists to conceal 'Manipur State Transport' on the bus

A five-day festival named after an endemic seasonal flower has begun on a thorny note in conflict-scarred Manipur.

Manipur Governor Ajay Kumar Bhalla on Tuesday inaugurated the Shirui Lily Festival, held in the Naga-dominated Ukhrul district after a two-year gap due to the ethnic clashes between the Kuki-Zo and Meitei people. An argument, however, arose at Gwaltabi, a security checkpoint in the Imphal East district, about 65 km southwest of the venue near Shirui village.

A team of 20 journalists and officials, heading to cover the festival, was allegedly told by the security personnel at this checkpoint to conceal the words "Manipur State Transport" displayed on the government bus in which they were travelling. Incensed, the mediapersons returned to the State's capital, Imphal.

The festival, which was to have been a barometer of enforced peace in Manipur, was in the news after the State police registered a case against a Kuki student leader for allegedly asking the Meiteis to not cross the "buffer zone" to attend the festival.

The Imphal Valley-based Coordinating Committee on Manipur Integrity (COCOMI) condemned the Gwaltabi incident. It said the act of the security personnel appeared to be a deliberate attempt to delegitimise the authority and very existence of Manipur within its territory.

The All Manipur Working Journalists' Union and the Editors' Guild Manipur petitioned the Governor, demanding a probe into the incident and action against the guilty.

The media bodies demanded clarity from the authorities on the rationale behind the instruction.

Shirui Lily festival
- Ukhrul district, Manipur
- Dept. of Tourism
- 2017
- Named after → Shirui lily (Lilium mackliniae) → (State flower Manipur)
  - grows in Shirui hills
  - endangered species
  - "Kashong Timrawon" → local name
    - rooted in folklore, spiritual beliefs of Tangkhul Nagas.
  - Under threat
    - CC
    - human encroachment
    - invasion of wild bamboo.

Kurma Mela: The science of mass nesting of Olive Ridely turtlesddddd

Syllabus

- **GS Paper 3** – Environment
- **GS Paper 1** – Geography: Animal Migration, Coastal Ecosystems

Kurma mela: the science of the mass nesting of Olive Ridley turtles

Olive Ridley turtles have endured mass extinctions, shifting continents, and rising seas; their resilience is remarkable but not limitless; regardless of whether turtles continue to return to nesting sites, our ethical responsibility is to safeguard the ecological balance that keeps turtles going and permit them, in this age of intrusiveness, some privacy

Devatima Ghosh

The Olive Ridley turtle (*Lepidochelys olivacea*), a vulnerable sea turtle species, made headlines earlier this year: a record-breaking seven lakh turtles had nested at Odisha's Rushikulya beach alone in March.

These turtles are renowned for their synchronised mass nesting events called arribada, a Spanish word that means "arrival." For many people, the Rushikulya arribada signalled hope – but for conservation biologists, it raised critical questions about the future of these vulnerable animals and whether human interventions, even well-meaning ones, could change the course of nature itself.

While some localised populations of Olive Ridley turtles have expanded, the IUCN Red List has estimated that the number of Olive Ridleys worldwide has dropped by 30-50% since 1960. The Olive Ridleys' primary nesting sites are along the Pacific coasts of Mexico and Central America, although Odisha is also a particularly critical location.

The State's 480-km-long coastline hosts three major nesting beaches: Gahirmatha, between the Brahmani and Baitarani river mouths; Devi, 100 km south of Gahirmatha; and Rushikulya, 320 km further south.

The where of it

Research has found that Olive Ridley turtles that hatch at a nesting site are "imprinted" with a map of the local magnetic field. Decades later they return with remarkable precision to the site by following this map. The phenomenon is called philopatry: a blend of memory, environmental factors, and the earth's geomagnetic cues. Philopatry is reinforced by a multiplier effect: as females with strong philopatric tendencies increase in number, they reinforce site fidelity across generations.

There are other ecological factors too. Studies on the loggerhead sea turtles (*Caretta caretta*) have also revealed that their nesting zones are near free swirls of cold water in the seas – called cold-core eddies – that move nutrients up from the deep sea to the surface, including those rich in chlorophyll. Other factors that affect their choice of nesting sites include salinity, land slope, risk of predation, and rainfall.

Nesting sites are considered more suitable if more turtles have nested there before – but as turtle populations swell whereas the size of the most favourable nesting grounds doesn't, beaches often become battlegrounds. A population that arrives after another has already nested at a beach might dig up existing nests – female turtles are guided by olfactory cues and female urine – and break the eggs. This happened earlier this year during the second mass-nesting event at Rushikulya.

An Olive Ridley turtle laying eggs at the Rushikulya river mouth beach, Ganjam, Odisha. BISWARANJAN ROUT

Eggs that are broken and displaced attract predators. Experts previously believed predators used visual cues to detect turtle nests. More recent research has found that olfactory cues, especially the scent of disturbed soil and broken eggs, are more significant. Thus, a species' most successful survival strategy may also sow the seeds of its decline.

In sea turtles, temperature determines the sex of hatchlings. Studies of loggerhead turtles have found that their populations are more female when they nest on warmer beaches. Researchers are still collecting similar data pertaining to Olive Ridley turtles. With rising temperatures shifting the sex ratio more towards females, the multiplier effect is expected to get reinforced as more females return to mass-nesting beaches in the coming years.

How mass nesting begins

For their first arribadas, female sea turtles pick their nesting sites without any discernible pattern and use them irregularly. If a female turtle reaches the reproductive stage of its life before it is able to reach the beach where it hatched, it may establish a new nesting site closer to its foraging grounds. Its hatchlings will be imprinted with this location, and they will attempt to return to it later.

Olive Ridley turtles that hatch at a nesting site are imprinted with a map of the local magnetic field. Decades later they return with remarkable precision to the site by following this map. The phenomenon is called philopatry: a blend of memory, environmental factors, and the earth's geomagnetic cues

Put another way, for a sea turtle population to thrive, it needs strays and wanderers like these turtles, which establish new places for the arribada. If they had been forced to stick to one site over millions of years, they would likely have become extinct due to overcrowding in the mass nesting beaches.

Modern conservation has helped boost turtle populations, especially by artificially incubating eggs and protecting beaches. The question naturally arises: could these measures be too successful? Because if weaker individuals that would have perished in the wild are now able to survive and reproduce, the population's genetic resilience will drop.

People, turtles, popularity

No conservation story is complete without acknowledging the role of local communities. In Odisha, fisherfolk and villagers are vital allies: they guard nests, curb egg poaching, and guide conservationists. But not all human interactions are benign.

Turtle tourism has surged in recent years. The influx of visitors creates opportunities to raise awareness, but it also stresses these gentle creatures. Crowds gather to watch nesting turtles at night, using bright lights, clicking selfies, and – in some disturbing cases – scooping sand out of the ground to watch the egg-laying or even sitting on turtles for photographs.

Such acts disturb nesting behaviour and may have a lasting impact on the turtles' memory, discouraging them from returning to the site.

Scientists are also just beginning to understand the cognitive and emotional inner lives of turtles. It's entirely possible that what we think of as harmlessly marvelling at them could be disrupting the ancient rhythms of these mariners.

In other words, it's no longer about numbers or rescue operations. The priority is to ensure the longevity of these nesting beaches and to balance tourism with ethical responsibility.

Olive Ridley turtles have endured mass extinctions, shifting continents, and rising seas. Their resilience is remarkable – but not limitless. Regardless of whether turtles continue to return to nesting sites despite these disturbances, humans' ethical responsibility is clear: to safeguard the ecological balance that keeps sea turtles going.

(Devatima Ghosh is an assistant professor at the Centre for Urban Ecology, Biodiversity, Evolution and Climate Change, JAIN (Deemed-to-be) University, Bengaluru.)

THE GIST

The IUCN Red List estimates that the number of Olive Ridleys has dropped by 30-50% since 1960. The primary nesting sites are along the Pacific coasts of Mexico and Central America; Odisha is also a particularly critical location

As populations swell, beaches become battlegrounds. A population that arrives after a previous nesting might dig up existing nests. Eggs that are broken attract predators. Thus, a species' successful survival strategy may also sow the seeds of its decline

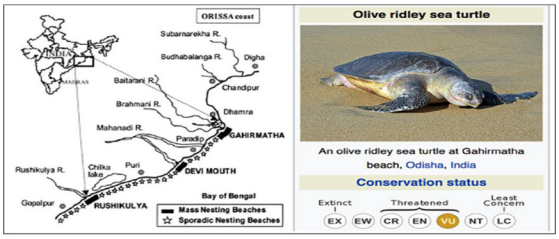
For the turtles to thrive, they need wanderers who establish new, less crowded nesting grounds. Modern conservation has also insulated turtles from selection; weaker individuals that would have perished are now able to survive, damaging the population's genetic resilience

Olive Ridely Turtles

TURTLE vs TORTOISE ??

Arribada → Synchronized, large scale nesting event
↳ involves environmental imprinting, geomagnetic cues, ocean current memory [PHILOPATRY]
↳ tendency of an org. to return to or stay in its birthplace for reproduction.

- Smallest + most abundant turtle
- Olive coloured shell
- found in warm waters
- Omnivores
- Solitary
- IUCN: Vulnerable
  WPA: Schedule 1
  CITES: App I



* Operation Kachap → DRI
Op Olivia → ICG.
Save Kurma → WCCB. → Wildlife crime control Bureau.

Personality in the news

Steady State Theory → universe has no beginning or end & its constantly creating matter to maintain density (expansion

Principal Proj Eng. for India's 1st atomic power station (Tarapur).

Jayant Narlikar, Indian astrophysicist who challenged Big Bang theory, passes away

He first gained international recognition when, alongside the British astronomer Fred Hoyle, he proposed the 'steady state' model of the universe; a prolific writer, Narlikar explored themes ranging from alien encounters to the moral quandaries arising from the rapid technological progress

Jacob Koshy
NEW DELHI

Jayant Narlikar, one of India's most distinguished astrophysicists who combined profound theoretical insight into cosmology with a lifelong commitment to science communication, passed away at his residence in Pune on Tuesday. He was 86.

Describing what made Dr. Narlikar one of the "greats", Tarun Souradeep, Director of the Raman Research Institute (RRI), Bengaluru, told *The Hindu* that it was his "sense of justice and equality" and his "unwavering commitment" to popularising science and combating "non-science-based superstition and astrology" that set him apart.

As a gifted institution-builder, Dr. Narlikar played a pioneering role in establishing the Inter-University Centre for Astronomy and Astrophysics (IUCAA), Pune, where he served as Founder-Director. Under his stewardship, IUCAA emerged as a globally recognised centre for theoretical physics, cosmology, and astrophysics.

"He spawned a number of leading scientists who set new directions and schools: Thanu Padmanabhan (cosmology, gravitation, and quantum gravity); Sanjeev Dhurandhar (gravitational waves); Ajit Kembhavi (data-driven observational astronomy), to name a few," Dr. Souradeep, who completed his doctoral research under Dr. Narlikar's guidance, said.


JAYANT NARLIKAR (1938-2025)

'Science populariser'

A prolific writer and science populariser, Dr. Narlikar once recalled, in a blog post, "playing table tennis with Stephen Hawking (prior to his muscular atrophy)" when they were both students at the University of Cambridge.

Dr. Narlikar first gained international recognition when, alongside the British astronomer Fred Hoyle, he proposed the "steady state" model of the universe – a theory positing a timeless cosmos in which matter is continuously created.

This stood in contrast to the dominant Big Bang model, a term ironically coined by Sir Fred to disparage it, which posits that the universe began at a single point in time.

Vocal critic

Although subsequent observational evidence has since firmly supported the Big Bang theory, Dr. Narlikar remained a persistent and vocal critic of it, adapting and refining the steady state view throughout his career.

"He wore his remarkable learning in various disciplines very lightly and he combined to an unusual degree formidable scholarship with humility. He was well and truly a most luminous star of Indian science, who reflected the noblest of our civilisational traditions," Congress communications in-charge and Rajya Sabha member Jairam Ramesh tweeted. He shared an excerpt from the 1964 edition of *Yojana* – a Planning Commission publication – which debated whether India should lure the young Narlikar back from Cambridge.

In a rare feat, Dr. Narlikar was awarded the Padma Bhushan in 1965, even before formally beginning his career in India at the Tata Institute of Fundamental Research (TIFR), Mumbai. He later received the Padma Vibhushan in 2004.

Among his many accolades were the UNESCO Kalinga Prize for the popularisation of science in 1996 and the prestigious Prix Jules Janssen from the French Astronomical Society in 2004.

Literary contributions

Dr. Narlikar was also widely admired for his literary contributions. His science-fiction story *Dhoomaketu* (*The Comet*) was adapted into a film, while his autobiography *Chaar Nagaranchale Maze Vishwa* (*My Tale of Four Cities*) was awarded the Sahitya Akademi Prize. His writing – marked by clarity, an avoidance of jargon, and philosophical depth – explored themes ranging from alien encounters to the moral quandaries arising from the rapid technological progress.

His key influences

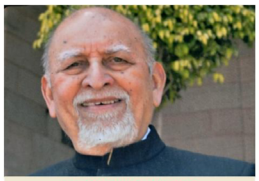
He was frequently featured in science programmes on television in the 1990s and credited Carl Sagan's outreach work, as well as the fiction of Sir Fred, Isaac Asimov, Arthur C. Clarke, and Ray Bradbury, as key influences in his approach to communicating science.

Born to eminent parents – Vishnu Vasudev Narlikar, a mathematician at Banaras Hindu University (now IIT-BHU), and Sumati Narlikar, a Sanskrit scholar – Dr. Narlikar received his early education in Varanasi before moving to the University of Cambridge, where he completed his Ph.D. under Sir Fred's mentorship.

M.R. Srinivasan, a key architect of India's nuclear programme, no more

The Hindu Bureau
UDHAGAMANDALAM

He began his career working alongside Homi Bhabha on the construction of India's first nuclear research reactor


M.R. SRINIVASAN (1930-2025)

M.R. Srinivasan, former Chairman of the Atomic Energy Commission and Secretary of the Department of Atomic Energy, passed away in Udhagamandalam on Tuesday. He was 95.

Dr. Srinivasan joined the Department of Atomic Energy (DAE) in September 1955 and began his distinguished career working alongside Dr. Homi J. Bhabha on the construction of India's first nuclear research reactor, Apsara, which achieved criticality in August 1956.

In August 1959, he was appointed Principal Project Engineer for the construction of India's first atomic power station. His leadership continued to shape the nation's nuclear programme when, in 1967, he took charge as Chief Project Engineer of the Madras Atomic Power Station.

Dr. Srinivasan held several key positions of national importance. In 1974, he became Director of the Power Projects Engineering Division, DAE, and in 1984, Chairman of the Nuclear Power Board. In these roles, he oversaw the planning, execution, and operation of all nuclear power projects across the country.

In 1987, he was appointed Chairman of the Atomic Energy Commission and Secretary of the Department of Atomic Energy. That same year, he became the Founder-Chairman of the Nuclear Power Corporation of India Ltd. (NPCIL). Under his leadership, 18 nuclear power units were developed – seven of which were operational, seven under construction, and four in the planning stage.

His contributions to India's nuclear energy landscape will be remembered for generations to come, his daughter Sharada Srinivasan said in a statement released by the family. In recognition of his contributions to India's nuclear energy programme, Dr. Srinivasan was awarded the Padma Vibhushan in 2015. "India will always be grateful to him for advancing scientific progress and mentoring many young scientists," Prime Minister Narendra Modi wrote on social media platform X.

"It has been my good fortune to have known him for a long time and he is someone who has left a deep and lasting impression on me by the strength of his commitments, his deep appreciation of the larger social functions of science, and his profound understanding of India's rich cultural traditions," Congress MP Jairam Ramesh wrote on X.