



The Hindu Analysis

DAILY CURRENT AFFAIRS · UPSC / STATE PSC

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THURSDAY

GS 3 Nepal Flash Flood & GLOF

GS 1 Onam & Thiruvathira

GS 2-3 Private Health-care

GS 3 Climate-Proof Food System

GS 2 India-China Boundary Talks

GS 3 Restoring Urban Lakes

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01	157 Killed in Nepal Flash Flood, Hundreds Missing GLOF-linked debris flood on the Bhotekoshi; disaster management & India–Nepal cooperation	GS 3
02	Onam & the Thiruvathira (Kaikottikali) Dance Kerala's harvest festival and its women's folk dance tradition	GS 1
03	The High Cost of India's Private Health-care Boom 176th Parliamentary Standing Committee report; price regulation & FDI	GS 2 · 3
04	Making India's Food System Climate-Proof NFSA, PDS, ONORC and climate-resilient food & nutrition security	GS 3
05	Drawing Lines: India–China Boundary Talks SR mechanism, eight-point consensus and the need for transparency	GS 2
06	Restoring Lakes by Going Beyond Quick Fixes Urban wetlands, encroachment, Ramsar & the HYDRRA model	GS 3
✦	Practice Arena 2 Mains questions · 10 Prelims MCQs · answer key & quick revision	MAINS + PRELIMS

WHY IN NEWS

A massive flash flood swept down Nepal's **Bhotekoshi River** through villages in **Rasuwa district**, bordering China's Tibet region, on Wednesday. At least **157 people were killed** and more than **400 remained missing or out of contact**—including over **130 Indians**—in one of the region's deadliest recent water disasters.

157 killed in Nepal flash flood, hundreds missing

More than 130 Indians among those missing from villages bordering Tibet; a rock-and-ice landslide along the Nepal-China border caused a debris-laden flood, say authorities citing satellite imagery

Sanjeev Satgainya
KATHMANDU

At least 157 people were killed and more than 400 people, 133 Indians among them, were missing or out of contact after a massive flash flood in Nepal's Bhotekoshi River swept through villages in Rasuwa, a district bordering China's Tibet region, on Wednesday morning, authorities said.

According to Nepal's Office of the Prime Minister and Council of Ministers, 391 foreign nationals and 93 Nepali citizens were out of contact. "Several security personnel, government officials and employees of hydropower projects are also out of contact," the government said. "The disaster has damaged 19 motor-



Flood fury: A screengrab shows water flowing across a residential area and damaging a bridge near the Nepal-Tibet border. PTI

able bridges and 40 kilometres of road."

The Nepal Police said that 157 bodies were recovered.

As authorities stepped up rescue operations, officials said the death toll could rise and that it would take days to assess the full extent of the damage.

Nepal's National Disaster Risk Reduction and Management Authority, citing a preliminary analysis of Planet Labs satellite imagery, said in the evening that a rock-and-ice landslide along the Nepal-China border, about 20 km northeast of the Rasuwagadhi border crossing,

Modi offers all possible help to tragedy-hit Nepal

NEW DELHI

Prime Minister Narendra Modi on Wednesday spoke to Nepal's Prime Minister Balendra Shah and offered "all possible assistance" to deal with the flash flood. The Indian Air Force deployed an aircraft carrying 10 tonnes of essential relief materials to Nepal. » **PAGE 10**

caused a debris-laden flood in the Lhende River, a tributary of Bhotekoshi, that flowed through Timure and entered the Trishuli River.

CONTINUED ON

» **PAGE 10**

WESTERN DISTURBANCE

» **PAGE 10**

The Hindu, Page 1: A screengrab shows water flowing across a residential area and damaging a bridge near the Nepal-Tibet border. PTI

- According to Nepal's Office of the Prime Minister and Council of Ministers, **391 foreign nationals and 93 Nepali citizens** were out of contact. Security personnel, government officials and employees of hydropower projects were among the missing.
- The disaster damaged **19 motorable bridges and about 40 km of road**, severing access to affected valleys and complicating rescue. The Nepal Police confirmed **157 bodies recovered**, with the toll expected to rise.
- Citing preliminary analysis of **Planet Labs satellite imagery**, Nepal's National Disaster Risk Reduction and Management Authority said a **rock-and-ice landslide (avalanche)** along the Nepal-China border, ~20 km north-east of the Rasuwagadhi crossing, caused a **debris-laden flood** in the Lhende River—a tributary of the Bhotekoshi—which flowed through Timure and entered the Trishuli River.



Rasuwa district, on the Nepal–China frontier north of Kathmandu.



Likely avalanche site and the verified area of flooding along the Bhote Koshi–Trishuli corridor.

THE METEOROLOGICAL ANGLE — WESTERN DISTURBANCE

- A **western disturbance** that brought rain to parts of northern India and then moved eastwards towards the Himalayas may have contributed to the weather preceding the flood, per a senior IMD official (D.S. Pai, RMC Chennai).
- “The same western disturbance system was moving eastwards, bringing **increased rainfall activity towards the north-east and the Himalayan region**,” he told *The Hindu*. The interaction of systems with hilly terrain may have played a role.
- There was **not enough information to confirm a cloudburst**; rainfall measurements from Nepal are needed to establish whether exceptionally large precipitation was recorded. Authorities are also probing whether an **earthquake triggered the landslide/avalanche**.



Flood fury: A truss bridge is overwhelmed as the debris flow tears through a hillside settlement near the Nepal–Tibet border.

CONCEPT CORNER — GLOF & DEBRIS FLOWS

- **GLOF (Glacial Lake Outburst Flood):** a sudden release of water from a glacial/moraine-dammed lake, often triggered by an avalanche, landslide or ice-fall into the lake, producing a fast, sediment-charged flood far downstream.
- **Rock-and-ice avalanche:** in warming high mountains, thawing permafrost destabilises slopes; the collapse can dam or displace river water, generating a **debris-laden flash flood**—as suspected here on the Lhende.
- **Cascading Himalayan hazard:** earthquake → slope failure → valley blockage/surge → downstream flood; the steep terrain amplifies velocity and reach (cf. Chamoli 2021, Sikkim South Lhonak GLOF 2023).

PRELIMS POINTERS

- **Bhotekoshi / Bhote Koshi:** a trans-boundary river of the Koshi system; the **Trishuli** joins the Narayani (Gandaki) network draining to the Ganga.
- **Rasuwagadhi:** a key Nepal–China border point connecting to **Gyirong (Kerung) Port** in Tibet.
- **NDRRMA** is Nepal’s apex disaster-management authority; India’s counterpart is the **NDMA** (under the Disaster Management Act, 2005).
- **Planet Labs** operates a large constellation of small Earth-observation satellites used for rapid disaster imagery.

INDIA’S RESPONSE & THE COOPERATION DIMENSION

- PM **Narendra Modi** spoke to Nepal PM **Balendra Shah** and offered “all possible assistance”; the **Indian Air Force** deployed an aircraft carrying ~10 tonnes of essential relief material to Nepal.
- The episode underlines the need for **joint trans-boundary early-warning systems**, real-time hydrological data-sharing with China and Nepal, and glacial-lake/permafrost monitoring across the Hindu Kush Himalaya.
- It also strengthens the case for climate-proofing Himalayan infrastructure—hydropower plants, roads and bridges—against low-probability, high-impact cascading disasters.

SYLLABUS LINK • GS 3 — Disaster & disaster management; conservation, environmental degradation. GS 2 — India’s neighbourhood policy & bilateral cooperation. GS 1 — important geophysical phenomena.



02 Onam & the Thiruvathira (Kaikottikali) Dance

GS 1 · ART & CULTURE

INDIAN HERITAGE · FOLK DANCE · FESTIVALS

WHY IN NEWS

As part of the **Thiruvonam** celebrations, devotees performed the **Thiruvathira** dance (also known as **Kaikottikali**) at the eastern entrance of the **Sree Padmanabhaswamy Temple**, Thiruvananthapuram—a vivid marker of Kerala's harvest festival, **Onam**.

Onam vibe



In sync: Devotees perform Thiruvathira dance, also known as Kaikottikali, at the eastern entrance of Sree Padmanabhaswamy Temple as part of the Thiruvonam celebrations, in Thiruvananthapuram on Wednesday. NIRMAL HARINDRAN

In sync: Devotees perform Thiruvathira (Kaikottikali) at the Sree Padmanabhaswamy Temple during Thiruvonam. Nirmal Harindran

THIRUVATHIRA / KAIKOTTIKALI — THE DANCE

- A **group folk dance** performed by women during Onam. Dancers move in a **circular pattern** around a lit traditional lamp (**Nilavilakku**), singing devotional songs and clapping in structured sequences to the rhythm of Thiruvathira songs.
- Associated with the worship of **Lord Shiva and Goddess Parvati**; it carries significance as a ritual for **marital well-being** and the blessings of womanhood.
- **Etymology:** “Thiruvathira” is the *Thiruvathira nakshatra* (Shiva’s birth star in Kerala tradition); *kai* (hand) + *kotti* (clapping) + *kali* (dance/play) = “the clapping dance.” A related form is called **Kummikali**.

ONAM — THE HARVEST FESTIVAL

- A major **harvest festival of Kerala**, celebrated to honour the home-coming of the benevolent Asura king **Mahabali**, whose reign symbolised peace and prosperity.
- **Time:** falls in the month of **Chingam**, the first month of the Malayalam calendar (**Kollavarsham**). The 10-day festival begins on **Atham** and concludes on **Thiruvonam**.
- One of Kerala’s three major festivals—the others being **Vishu** and **Thiruvathira**.

PRELIMS POINTERS — ONAM RITUALS & KERALA ART FORMS

- **Pookkalam:** intricate floral rangoli laid during the festival days. The centrepiece is the grand vegetarian feast, the **Onam Sadhya**.
- Associated performances: **Vallam Kali** (snake-boat races), **Pulikali** (tiger dance), **Kummattikali** (mask dance) and **Onathallu** (martial art).

- Broader Kerala repertoire for revision: **Kathakali**, **Mohiniyattam** (classical); **Theyyam**, **Ottamthullal**, **Koodiyattam** (Koodiyattam is a UNESCO Intangible Cultural Heritage).

SYLLABUS LINK · GS 1 — Indian culture: salient aspects of art forms, folk dances and festivals from ancient to modern times.



03 The High Cost of India's Private Health-care Boom

GS 2 · 3 · HEALTH

HEALTH GOVERNANCE · OUT-OF-POCKET EXPENDITURE · FDI

WHY IN NEWS

The **Parliamentary Standing Committee on Health and Family Welfare**, in its **176th Report** (tabled 7 August 2026), flagged the steep and unequal cost of hospitalisation, recommending price standardisation even as India seeks more private and foreign capital in health care.

The high cost of India's private health-care boom

For crores of Indian families, the financial shock of hospitalisation – especially in a private hospital – begins even before treatment is complete. The Parliamentary Standing Committee on Health and Family Welfare, in its 176th Report tabled in Parliament on August 7, 2026, noted that the average cost of hospitalisation is ₹50,508 in a private facility, compared with ₹6,631 in a government facility. For childbirth, the average out-of-pocket medical expenditure in private facilities is ₹37,630, against ₹2,299 in public facilities.

Some of the contradictions

The committee has made 368 recommendations, including standardised package rates and mandatory pre-treatment cost estimates. Among the widely reported proposals is that basic room tariffs in metropolitan private hospitals should not exceed the average tariff of three-star hotels that are nearby. It has also suggested that large corporate hospitals earning from medical tourism, foreign patients and high-net-worth individuals should cross-subsidise poorer Indians and reserve beds for Ayushman Bharat-Pradhan Mantri Jan Arogya Yojana (AB-PMJAY) beneficiaries at regulated rates. Yet, there is a contradiction. India wants more private and foreign capital in health care, particularly in Tier-2, Tier-3 and rural areas, while simultaneously asking the government to review foreign direct investment rules related to the acquisition and management of existing hospitals.

There is a strong case for continued investment in Indian health care. Hospitals require substantial capital. Land, equipment, intensive care units, digital systems, laboratories and trained personnel are expensive. Public hospitals cannot currently meet all demand for secondary and tertiary care. Private hospitals therefore fill an important gap. Foreign investors and private-equity funds can bring capital, managerial capacity, technology and the capacity to expand hospital networks. India also needs investment in pharmaceutical and medical-device manufacturing. If regulation becomes excessively restrictive or unpredictable, some investment may move elsewhere. This could slow capacity expansion and delay the development of better health-care infrastructure in cities and districts where need is genuine.

However, in all sectors, capital comes with expectations of returns. In health care, it creates a special concern because patients are not ordinary consumers. A patient rarely decides independently whether an MRI is required, whether hospital admission should continue for two more days, or whether a procedure is necessary. Health care is shaped by what



Chandrakant Lahariya

Practising physician specialising in preventive and cardio-metabolic medicine, whose upcoming book, 'Pill-Free: You Don't Need Everything You Have Been Prescribed', will be released in September 2026

The country needs private capital to expand health care, but investment cannot be allowed to shape clinical decisions, pricing and access in ways that make care unaffordable or unnecessarily intensive

economists call information asymmetry: the provider knows more than the patient. Therefore, when financial incentives become too strong, they can influence not just the price of care but also how much care is delivered.

A closer look at private care

This is where the role of private equity and venture capital in health care deserves closer attention. Corporate hospital groups increasingly compete for well-known specialists, sophisticated technology and premium infrastructure. These can improve quality, but also create a high-cost ecosystem. Hospitals that pay very high salaries to senior specialists and super specialists, acquire expensive equipment and operate under pressure to increase revenue must eventually recover these costs. Revenue targets, procedure-linked incentives, higher occupancy expectations and higher revenue per bed can gradually influence institutional behaviour. Most doctors act in patients' interests. Yet, systems shape behaviour. If hospitals and doctors are rewarded for doing more, the direction becomes predictable.

The result is not only higher cost but also a worrying medicalisation. Lab investigations may detect abnormalities that would never have caused harm. More screening can lead to unnecessary follow-up tests. A patient who could be managed as an outpatient may be admitted. Caesarean sections, angioplasties, intensive-care admissions, diagnostic packages and long lists of medicines must therefore be seen not only as individual clinical decisions but also within the incentive structure of the health system. This does not mean these interventions are usually unnecessary. It means that a system rewarding interventions and procedures needs strong safeguards against unnecessary prescriptions, surgeries, investigations and medications.

That is why a review of FDI in the acquisition of existing hospitals is justified. Domestic investors can be equally profit-oriented, while foreign investment can create valuable capacity. The more useful question is about what an investment does to the health system. Does it create new beds or simply acquire existing ones? Does it improve competition or lead to market concentration? Does it enter an underserved district or add another high-end facility in a metro? If an investor receives concessional land, tax benefits or other public support, are there enforceable obligations related to affordable beds or participation in public insurance schemes? India should encourage greenfield investment and manufacturing, while scrutinising acquisitions that reduce competition or raise the risk of excessive pricing.

Price regulation also needs to be approached carefully. The proposal to link hospital room charges to nearby three-star hotels is easy to

understand, but cannot by itself solve the affordability problem. A hospital room includes nursing, infection-control and emergency support that a hotel room does not. More importantly, if one component of the bill is capped, hospitals may increase charges elsewhere. India's experience with coronary stent price regulation showed that government intervention can reduce excessive mark-ups. But hospital care is more complex; what matters is the total cost of an episode. Package rates, transparent estimates, billing standards and audit mechanisms are therefore more useful than isolated caps on individual components. There is also an established approach to such payments: Diagnosis-Related Groups (DRG). A DRG is a patient-classification system that standardised hospital reimbursement by paying a fixed, predetermined amount for an inpatient stay based on the diagnosis and procedures, rather than reimbursing each service separately.

Focus on public health

There is a larger policy question. India cannot regulate its way out of weak public health care. If government hospitals remain overcrowded, understaffed or difficult to access, citizens will continue to depend heavily on private providers. Experience from OECD countries has shown that one effective form of regulation is a strong public health system that provides a credible alternative.

Public hospitals must therefore become a genuine option, not merely the last resort for those who cannot afford private care. Primary health care needs strengthening so that disease is prevented, detected and treated early. Insurance systems, including AB-PMJAY, should reward appropriate care rather than simply higher volumes of procedures. Clinical audits, evidence-based treatment protocols and transparent billing can protect both patients and doctors from commercial pressures.

The Parliamentary Committee is right to focus attention on affordability and to question whether the current pattern of investment in private health care aligns with public interest. Price caps and an FDI review are reasonable starting points, but India needs a wider conversation about the kind of health-care system it is building. Private investment will remain essential, and profit by itself is not the problem.

The problem begins when the pursuit of returns starts a key influence. A health-care system should attract capital, but its clinical priorities must still be set by medical need. The true measure of India's health-care progress will not be how much money flows into hospitals or what is the annual compounded growth rate in medical tourism, but whether Indian citizens can enter them with confidence that they will receive what they need. No more, no less.

The Hindu, Editorial page: "The high cost of India's private health-care boom" — Chandrakant Lahariya.

THE COST GAP — KEY DATA

- Average cost of hospitalisation: **₹50,508 in a private facility** vs **₹6,631 in a government facility**.
- For childbirth, average out-of-pocket expenditure: **₹37,630 (private)** vs **₹2,299 (public)**.
- The Committee made **368 recommendations**, including **standardised package rates** and **mandatory pre-treatment cost estimates**.

- A widely reported proposal: **basic room tariffs** in metropolitan private hospitals should **not exceed the average tariff of nearby three-star hotels**.
- Large corporate hospitals earning from **medical tourism, foreign patients and high-net-worth individuals** should **cross-subsidise poorer Indians** and reserve beds for **AB-PMJAY** beneficiaries at regulated rates.

- **The contradiction:** India wants more private and foreign capital—especially in **Tier-2, Tier-3 and rural areas**—while simultaneously asking the government to review **FDI rules** on the acquisition and management of existing hospitals.

THE CASE FOR — AND LIMITS OF — PRIVATE INVESTMENT

- Hospitals need substantial capital (land, ICUs, diagnostics, trained personnel); public hospitals cannot meet all secondary/tertiary demand, so private hospitals **fill an important gap**.
- Foreign investors and private-equity funds bring **capital, managerial capacity and technology**; India also needs investment in **pharma and medical-device manufacturing**.
- But over-restrictive or unpredictable regulation may **push investment elsewhere**, slowing capacity expansion where need is genuine.

THE CORE PROBLEM — INFORMATION ASYMMETRY & SUPPLIER-INDUCED DEMAND

- A patient rarely decides whether an MRI, an extra day of admission or a procedure is truly necessary—**the provider knows more than the patient**.
- When financial incentives become too strong, they influence **not just the price of care but how much care is delivered** (over-medicalisation, unnecessary tests/procedures).
- Tools that help: **package rates, transparent estimates, billing standards, audit mechanisms, DRGs** (Diagnosis-Related Groups—fixed payment by diagnosis rather than itemised billing).

PRELIMS POINTERS

- **AB-PMJAY:** Ayushman Bharat–Pradhan Mantri Jan Arogya Yojana provides health cover of **₹5 lakh per family per year** for secondary and tertiary care.
- **Out-of-Pocket Expenditure (OOPE):** direct payment by households at point of care—a key measure of financial protection; high OOPE pushes families into poverty.
- **DRG:** a patient-classification system standardising hospital reimbursement by paying a fixed, pre-determined amount for an inpatient stay.

WAY FORWARD — STRENGTHEN PUBLIC HEALTH

- Regulation alone cannot solve affordability—**strong public hospitals** are the credible alternative; OECD experience shows one effective form of regulation is a robust public system.
- Focus on **primary health care and prevention**, sensible **price caps**, clinical audits, evidence-based protocols and transparent billing to protect patients and doctors from commercial pressures.
- **Private investment will remain essential, and profit itself is not the problem**—the true test is whether citizens can access needed care with confidence. Clinical priorities, not commercial ones, must set the direction.

SYLLABUS LINK · GS 2 — Issues relating to development & management of Social Sector/Services (Health); government policies. GS 3 — Investment models, FDI, inclusive growth.

04 Making India's Food System Climate-Proof Cannot Wait

GS 3 · AGRI & ENVIRONMENT

FOOD SECURITY · CLIMATE RESILIENCE · PDS

WHY IN NEWS

Experts argue that India's food-security architecture—built on decades of public investment—must now be **climate-proofed**, shifting the national framing from “food security” to “**sustainable food and nutrition security**” amid rising temperatures and extreme weather.

Making India's food system climate-proof cannot wait

India's food security journey is undoubtedly one of the most significant agricultural transformations in the world. From dependence on food aid in the 1960s, the country has emerged as a major food producer, built substantial buffer stocks, and created a legal entitlement to subsidise foodgrains for around 800 million people through the National Food Security Act (NFSA), 2013. This achievement rests on decades of public investment in improved seeds, irrigation, procurement, storage, price support and public distribution. The task now is to protect and strengthen that achievement amid a changing climate and increasingly frequent extreme weather events.

Climate change threatens food security globally. For India, the policy challenge has evolved beyond producing enough food to ensuring affordable, nutritious supply for 1.4 billion people despite rising temperatures, erratic rainfall, extreme weather, and water scarcity affecting production, storage, transport, and consumption.

The advantages

India has the initial advantage to address this challenge. Foodgrain production reached more than 350 million tonnes in 2024-25, including record output of rice and wheat. The Public Distribution System (PDS), supported by digitisation and the One Nation One Ration Card (ONORC), has expanded the reach and portability of food entitlements. These foundations provide the production capacity and administrative depth and expertise needed to support the transition towards a climate-resilient food-security framework.

India's evolving food-systems approach recognises that climate risks span the entire value chain. Heat reduces wheat yields, erratic monsoons cause floods and droughts within seasons, groundwater depletion weakens irrigation buffers, and extreme weather damages storage and transport infrastructure. These cascading effects create market volatility and limit household access to nutritious foods.



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climate-resilient
development

India has built food security; now it must climate-proof it for a secure food future

The rice-wheat system has served India well, but national procurement remains concentrated in a few crops and geographies. Several of these areas also face serious groundwater stress. This model emerged as a rational response to the production constraints of an earlier era. The opportunity now is to build on its achievements by progressively diversifying procurement across crops and regions, while making the system more responsive to climate and natural-resource considerations. The procurement may gradually expand across geographies and commodities, with price support aligned to encourage crops suited to local water and climate conditions. Millets, pulses, oilseeds and other nutri-cereals can reduce risk concentration while strengthening dietary diversity. Cereals such as rice and wheat will remain essential, but a broader procurement base can create a more resilient national portfolio.

Along with the procurement, the PDS can progressively reinforce a diversified food basket. A carefully designed inclusion of locally appropriate millets and pulses would strengthen the connect between food security with nutrition, water conservation and climate adaptation.

On climate information

Forecasts from the India Meteorological Department may be linked more directly with procurement, buffer-stock and contingency decisions. The NFSA's monitoring framework can also include indicators for heat, water stress, storage exposure and supply-chain resilience, alongside coverage and offtake. Farmers require practical tools for managing risk. Climate-resilient seed varieties, micro-irrigation, watershed development, precision farming, digital advisories and weather-indexed insurance may reduce variability and support better decisions. Public-private collaboration would also help accelerate research, certification and last-mile delivery, while public safety nets can ensure that smallholders and climate-exposed regions are not left behind.

Along the entire food supply chain, flood-resilient warehouses, storage systems suited to higher temperatures, expanded cold chains and more robust transport links are necessary for protecting grain and perishables. This is particularly important if the food basket becomes more diverse. Adaptation incentives and standards can therefore cover procurement, storage, logistics and market stabilisation, not production alone.

Down the line

Financing climate-resilient food systems requires green bonds, adaptation finance, insurance, and investment in resilient agricultural value chains. Integrating food systems into India's net-zero pathway – with measurable emission reductions, carbon sequestration, and resilience targets – enables coordinated action across agriculture, water, energy, transport, and nutrition, while unlocking climate finance for sustainable transformation.

India's traditional buffer stock offers a useful principle for this transition. The country can explore building a broader 'climate buffer', combining diversified crops and procurement regions, resilient infrastructure, climate information, insurance and improved water management. Just as grain reserves reduced the risk of poor harvests, this portfolio may reduce the systemic risks created by a less predictable climate.

Climate-resilient food and nutrition security is not a departure from India's established approach. In fact, it is its logical next phase, and India already possesses many of the institutions, capabilities and policy setup needed to advance it. This may include shifting the national framing from “food security” to “sustainable food security”, embedding climate risk management as a first-order design parameter in NFSA planning and monitoring, rather than an externality managed after the fact. The existing long-term vision and institutional commitment can now ensure that India's food systems remain nutritious and sustainable in the decades ahead.

The Hindu, Op-Ed: “Making India's food system climate-proof cannot wait” — Elisabeth Faure & Purvi Mehta.

- From dependence on food aid in the **1960s**, India became a major food producer, built **buffer stocks**, and created a legal entitlement to subsidise foodgrains for **~800 million people** via the **National Food Security Act (NFSA), 2013**.
- Foodgrain production crossed **350 million tonnes in 2024-25**, with record rice and wheat output. The **Public Distribution System (PDS)**—digitised and portable through the **One Nation One Ration Card (ONORC)**—provides the administrative depth for a resilient transition.
- **The challenge:** heat reduces wheat yields, erratic monsoons cause floods and droughts within seasons, groundwater depletion weakens irrigation buffers, and extreme weather damages storage and transport—cascading effects that fuel **market volatility** and limit household access to nutritious food.

DIVERSIFY PROCUREMENT & THE FOOD BASKET

- National procurement remains concentrated in **a few crops and geographies**, several already under **serious groundwater stress**. The rice-wheat system served India well but must now broaden.
- **Millets, pulses, oilseeds and nutri-cereals** reduce risk concentration and strengthen dietary diversity; price support should be aligned to crops suited to local water and climate conditions.
- The **PDS** can progressively reinforce a diversified basket—including locally appropriate millets and pulses—strengthening the link between food security, nutrition, water conservation and climate adaptation.

ON CLIMATE INFORMATION & THE SUPPLY CHAIN

- **IMD forecasts** can be linked more directly with procurement, buffer-stock and contingency decisions; the **NFSA's monitoring framework** can add indicators for heat, water stress, storage exposure and supply-chain resilience.
- Farmers need practical tools: **climate-resilient seeds, micro-irrigation, watershed development, precision farming, digital advisories and weather-indexed insurance**.
- Along the chain: **flood-resilient warehouses, heat-suited storage, expanded cold chains and robust transport** to protect grain and perishables—especially as the food basket becomes more diverse.

DOWN THE LINE — FINANCING & THE “CLIMATE BUFFER”

- Financing needs **green bonds, adaptation finance, insurance** and investment in resilient agricultural value chains, integrated into India's **net-zero pathway** with measurable targets.
- Just as grain reserves reduced the risk of poor harvests, India can build a broader “**climate buffer**”: diversified crops & procurement regions, resilient infrastructure, climate information, insurance and improved water management.
- The shift embeds **climate-risk management as a first-order design parameter** in NFSA planning—not an externality managed after the fact.

PRELIMS POINTERS

- **NFSA 2013** covers up to **75% of rural** and **50% of urban** population; 2023 was observed globally as the **International Year of Millets**.
- **ONORC** enables ration portability across India through Aadhaar-seeded, biometric-authenticated ePoS at Fair Price Shops.
- Nutri-cereals / **Shree Anna**: jowar, bajra, ragi and small millets—hardy, low-water, climate-resilient and nutrient-dense.

SYLLABUS LINK • GS 3 — Issues of buffer stocks & food security; PDS — objectives, functioning, limitations; cropping patterns; conservation & climate change. GS 2 — welfare schemes & their performance.

WHY IN NEWS

Following talks between the **Special Representatives (SRs)** on the boundary question, India and China agreed to substantial outcomes on managing the disputed border, releasing an **eight-point consensus**—prompting an editorial call for greater transparency with their publics.

Drawing lines

India and China must be transparent about the talks on boundary dispute

Following Tuesday's talks between the Special Representatives (SRs) on the boundary question, India and China have agreed to substantial outcomes on managing the disputed border. According to an eight-point consensus released on Wednesday, both countries have agreed to advance discussions on "an early and substantial harvest of boundary delimitation". They have agreed to hold next month a meeting of an expert-level mechanism on trans-border rivers and to maintain communication on sharing hydrological data, which India has been pushing for. Two additional meeting points to hold talks between top military commanders will be set up, along with two new channels of hot-lines in the Eastern and Middle Sectors. National Security Adviser Ajit Doval and China's Foreign Minister Wang Yi reaffirmed the efforts taken over the past two years to keep the peace along the Line of Actual Control, and committed to continuing the on-going normalisation in relations. That the NSA's visit to Beijing took place before India hosts the BRICS Summit, on September 12, underlined both sides' keenness to continue with this process of re-engagement, with the expected visit of Chinese President Xi Jinping after a gap of seven years. An October 2024 meeting between Prime Minister Narendra Modi and Mr. Xi kick-started this calibrated effort towards normalcy, and a 2025 meeting in Tianjin helped continue the momentum. It is apparent that both sides see continued engagement at the highest level as key to sustaining this process of normalisation.

started this calibrated effort towards normalcy, and a 2025 meeting in Tianjin helped continue the momentum. It is apparent that both sides see continued engagement at the highest level as key to sustaining this process of normalisation.

The dual tracks of the SR meetings and the Working Mechanism for Consultation and Coordination on border affairs, a body comprising diplomats and military officials, have worked well towards keeping the borders generally stable over the past two years. The latest outcomes will certainly help in keeping the peace. Less clear is how both sides intend to take up the task of border delimitation. Neither side has explained which parts of the border they plan to delimit, or whether they are reconsidering the 2005 agreement on Political Parameters and Guiding Principles, under which the SRs were tasked with first agreeing a framework to settle the boundary. While both sides in Beijing reaffirmed the 2005 agreement, Article 10 of its text notes that it is only on the basis of the framework that both sides can delineate the boundary. Tangible progress on the border dispute must certainly be welcomed. However, agreements made without public visibility, notwithstanding their merit, may invite suspicion. As India and China continue negotiating their long-running boundary question, it is imperative that they bring their publics along.

The Hindu Editorial: "Drawing lines — India and China must be transparent about the talks on the boundary dispute."

- The **dual tracks**—SR meetings and the **Working Mechanism for Consultation & Coordination (WMCC)** on border affairs (diplomats + military officials)—have kept borders generally stable over the past two years.
- The NSA's Beijing visit came before India hosts the **BRICS Summit on 12 September**, underlining keenness for re-engagement, with an expected visit by President **Xi Jinping** after a gap of seven years.
- **Timeline of thaw:** an **October 2024** Modi–Xi meeting kick-started calibrated normalcy; a **2025 meeting in Tianjin** sustained the momentum.

THE EIGHT-POINT CONSENSUS — WHAT WAS AGREED

- Both sides agreed to advance discussions on “**an early and substantial harvest of boundary delimitation**” and to hold, next month, a meeting of an **expert-level mechanism on trans-border rivers**, maintaining communication on sharing **hydrological data**—a long-standing Indian ask.
- Two additional tracks for **talks between top military commanders** will be set up, along with **two new hotlines** in the Eastern and Middle Sectors.
- **NSA Ajit Doval** and Chinese Foreign Minister **Wang Yi** reaffirmed efforts to keep peace along the **Line of Actual Control (LAC)** and to continue normalisation of relations.

THE EDITORIAL'S CAUTION — BRING THE PUBLICS ALONG

- Less clear is **which parts of the border** the two intend to delimit, or whether they are reconsidering the **2005 Agreement on Political Parameters and Guiding Principles**, under which the SRs were first tasked with agreeing a framework.
- **Article 10** of the 2005 text notes that only on the basis of that framework can both sides delineate the boundary—yet neither side has explained its plan.
- Tangible progress must be welcomed, but **agreements made without public visibility may invite suspicion**; it is imperative that both governments bring their publics along.

PRELIMS POINTERS

- **Special Representatives (SR) mechanism**: set up in **2003** to explore a political framework for settling the boundary question.
- **LAC sectors**: Western (Ladakh), Middle (HP, Uttarakhand) and Eastern (Sikkim, Arunachal Pradesh).
- **Trans-border rivers**: the **Brahmaputra (Yarlung Tsangpo)** and **Sutlej** are key rivers on which China shares hydrological data with India under existing MoUs.
- **BRICS**: Brazil, Russia, India, China, South Africa + newer members; India hosts the summit noted here.

SYLLABUS LINK · GS 2 — India and its neighbourhood; bilateral agreements & groupings involving India; effect of policies of developed & developing countries on India's interests.



06 Restoring Lakes by Going Beyond Quick Fixes

GS 3 · ENVIRONMENT

URBAN WETLANDS · CONSERVATION · GOVERNANCE

WHY IN NEWS

A commentary warns that India's **urban lakes and wetlands**—critical “urban climate buffers”—are vanishing to encroachment and apathy, and that genuine restoration demands **structural reform over cosmetic fixes**.

Restoring lakes by going beyond quick fixes

Covering nearly 6% of the planet's surface, wetlands – including urban lakes – are among the most productive ecosystems on Earth. They store a disproportionately large share of the world's carbon, often outperforming terrestrial forests per unit area. Beyond carbon sequestration, they contribute immensely to biodiversity, climate regulation, and human well-being. Yet today, lakes are disappearing at an alarming pace. Many of our remaining urban wetlands are either biologically dead or heavily eutrophic. In losing them, cities are systematically eroding their natural defences against climate change, undermining public health, and threatening the very foundations of urban liveability.

The widespread destruction of water bodies is a direct consequence of rapid, unplanned urbanisation. As land pressure intensifies in crowded localities, developers and municipal bodies view these natural landscapes as vacant land rather than critical ecological infrastructure. This mindset makes lakes highly vulnerable to encroachment and systemic disappearance.

Compounding this physical destruction is a deep-rooted institutional and public apathy. Heavily polluted water bodies have become convenient spots for untreated sewage, industrial effluents, and municipal solid waste. This collective inaction reveals a grim truth: lakes are dying not only because they are encroached upon, but because they are taken for granted.

The sheer volume of data capturing this damage is overwhelming. Reports by the Comptroller and Auditor General (CAG) have flagged large-scale shrinkage in J&K, including over 500 lakes since 1967. Down south, the crisis is equally acute. Hyderabad lost roughly 61% of its lake area since 1979, with 268 water bodies completely disappearing between 2002–2012 as detailed in one study. As cities



Mohan Chandra Pargaen

Adviser to SCCL, Telangana and former Indian forest officer with over three decades of experience in natural resource management

In cities such as Hyderabad, Bengaluru, and Mumbai, peri-urban land that once served as agricultural fields or natural lake catchments has mutated into prime real estate

grapple with intensifying heat islands and unpredictable urban flooding, there is a desperate need to treat these lifelines as 'urban climate buffers' and 'sponge systems' rather than as liabilities.

Taken for granted

Half a century ago, land in Indian cities was relatively affordable, urban expansion was moderate, and lakes were respected for their functional civic assets. Today, land prices have multiplied manifold in the past five decades. In cities such as Hyderabad, Bengaluru, and Mumbai, peri-urban land that once served as agricultural fields or natural lake catchments has mutated into prime real estate. This exponential spike has transformed lakes into a perceived "opportunity cost." Encroachment becomes economically incentivised, leading to wetlands being filled, fragmented, and repurposed for housing, highways, and commercial complexes.

India's recent achievement of expanding its tally of designated Ramsar sites reflects a formal, high-level recognition of wetland conservation. However, international designations must not be mistaken for local conservation success. On the ground, the reality remains fiercely complex, plagued by ambiguous boundaries, ongoing encroachment, and disrupted catchment areas. While initiatives such as the Atal Mission for Rejuvenation and Urban Transformation, the Jal Shakti Abhiyan, and Mission Amrit Sarovar provide useful policy skeletons, their on-the-ground impact is routinely diluted.

This failure stems from fragmented accountability, weak inter-departmental coordination, and a deeply flawed tendency to prioritise beautification over genuine ecological recovery. Municipal bodies often prioritise visible beautification over ecological repair – promenades, lighting, and fencing – while ignoring feeder channels, catchments, and water quality.

Real restoration demands raw institutional intent, as demonstrated by a recent Telangana initiative – the newly formed Hyderabad Disaster Response and Asset Protection Agency (HYDRAA). The agency has actively reclaimed encroached lakebeds, cleared illegal structures within Full Tank Level zones, and initiated restoration work across dozens of water bodies. Crucially, by desilting long-blocked feeder channels and restoring natural hydrological flows, the agency nearly doubled the water spread of the severely choked Nalla Cheruvu from 16 to 30 acres.

In parallel with State action, grassroots citizen movements have also shown exceptional results from community involvement. Passionate "lake champions" in Bengaluru and Hyderabad have successfully revived dying water bodies such as in Puttenahalli, Jakkur, and Kudikunta.

But these successes remain too isolated. Without institutionalised legal backing, sustained state funding, and unyielding statutory enforcement, local wins will remain exceptions rather than becoming a replicating model.

Beyond quick fixes

India's urban future is shaped by a complex crisis of land, law, and governance. Resolving this crisis requires deep structural reform over cosmetic fixes. First, water bodies must be formally integrated into city planning. Second, lake boundaries and catchments need absolute legal protection, with strict, consistent penalties for encroachments. Streamlining fragmented governance under unified, accountable authorities is vital. Finally, citizen engagement must be institutionalised within governance frameworks to ensure permanent local ownership. Cities that reduce lakes to landscaped backdrops will eventually pay the price in floods, heat stress, and water scarcity while those that restore them as living ecosystems will secure their resilience in a warming, water-stressed future.

The Hindu, Op-Ed: "Restoring lakes by going beyond quick fixes" — Mohan Chandra Pargaen.

- Wetlands cover nearly **6% of the planet's surface** and are among Earth's most productive ecosystems –storing a disproportionate share of carbon, often **outperforming terrestrial forests per unit area**, and underpinning biodiversity, climate regulation and human well-being.
- Yet many urban wetlands are **biologically dead or heavily eutrophic**. Losing them erodes cities' natural defences against climate change, harms public health, and threatens urban liveability.
- **Root cause:** rapid, unplanned urbanisation. As land pressure rises, developers and municipal bodies see wetlands as **vacant land rather than critical ecological infrastructure**—leaving them exposed to encroachment.

SCALE OF THE LOSS & THE "OPPORTUNITY COST" TRAP

- CAG reports flagged large-scale shrinkage in **J&K** (500+ lakes since 1967); **Hyderabad** lost **~61%** of its lake area since 1979, with **268 water bodies vanishing between 2002–2012**.
- Multiplying land prices transform lakes into a perceived **"opportunity cost"**; encroachment becomes economically incentivised—wetlands are filled, fragmented and repurposed for housing, highways and commercial complexes.
- Schemes like **AMRUT**, the **Jal Shakti Abhiyan** and **Mission Amrit Sarovar** offer useful policy skeletons, but their on-the-ground impact is **routinely diluted** by weak coordination and beautification-over-ecology tendencies.

WHAT WORKS — THE HYDRAA MODEL & COMMUNITY ACTION

- The newly formed **Hyderabad Disaster Response and Asset Protection Agency (HYDRAA)** reclaimed encroached lakebeds, cleared illegal structures, de-silted feeder channels and restored natural flows—nearly doubling the spread of the choked **Nalla Cheruvu** (from 16 to 30 acres).
- “**Lake champions**” and grassroots movements in Bengaluru and Hyderabad revived dying water bodies (e.g. **Puttenahalli, Jakkur, Kudikunta**).
- But such wins remain **isolated**: without institutional legal backing, sustained funding and statutory enforcement, they stay exceptions rather than the replicating model.

BEYOND QUICK FIXES — THE REFORM AGENDA

- **First**: water bodies must be **formally integrated into city planning**, not treated as leftover land.
- **Second**: lake boundaries and catchments need **absolute legal protection** with strict, consistent penalties for encroachment; streamline fragmented governance under **unified, accountable authorities**.
- **Finally**: institutionalise **citizen engagement** for permanent local ownership. Cities that reduce lakes to landscaped backdrops will pay in floods, heat stress and water scarcity; those that restore them as living ecosystems secure their resilience.

PRELIMS POINTERS

- **Ramsar Convention (1971)**: the intergovernmental treaty for wetland conservation; India’s tally of Ramsar sites has expanded, but international designation must not be mistaken for local success.
- **Eutrophication**: nutrient (N, P) enrichment causing algal blooms and oxygen depletion —“biologically dead” water.
- **AMRUT**: Atal Mission for Rejuvenation and Urban Transformation. **Mission Amrit Sarovar** aims to develop/rejuvenate 75+ water bodies per district.

SYLLABUS LINK · GS 3 — Conservation, environmental pollution & degradation; ecosystem services. GS 2 — issues in urban local governance & scheme implementation. GS 1 — urbanisation and associated problems.

Practice Arena

MAINS QUESTION 1 · GS 3 — DISASTER MANAGEMENT / ENVIRONMENT

Himalayan flash floods are increasingly “cascading” disasters driven by both climate change and fragile geology. In this context, examine the causes of events such as the recent Nepal Bhotekoshi flood and suggest measures for trans-boundary disaster resilience. (250 words / 15 marks)

हिमालयी आकस्मिक बाढ़ प्रायः ‘शृंखलाबद्ध (cascading)’ आपदाएँ होती हैं, जो जलवायु परिवर्तन और नाजुक भू-विज्ञान दोनों से प्रेरित होती हैं। इस संदर्भ में हाल के नेपाल बोतेकोशी बाढ़ जैसी घटनाओं के कारणों का परीक्षण कीजिए और सीमा-पार आपदा स्थिति-शक्ति हेतु उपाय सुझाइए।

APPROACH · Define cascading/GLOF hazard → causes (permafrost thaw, rock-ice avalanche, seismicity, cloudbursts/western disturbances, hydropower siting) → impacts (Nepal data, India's exposure) → measures: joint early-warning, satellite & glacial-lake monitoring, hydrological data-sharing, climate-resilient infra, SDRF/NDRF cooperation → conclude with HKH regional framework.

MAINS QUESTION 2 · GS 2 / 3 — HEALTH GOVERNANCE

“Regulating the price of private health care can address symptoms, but only a strong public health system can cure the disease of unaffordability.” Critically analyse in light of the recommendations of the 176th Parliamentary Standing Committee report. (250 words / 15 marks)

“निजी स्वास्थ्य सेवाओं की कीमतों का नियमन लक्षणों का समाधान कर सकता है, परंतु असहनीयता की बीमारी का इलाज केवल एक सुदृढ़ सार्वजनिक स्वास्थ्य प्रणाली से ही संभव है।” 176वीं संसदीय स्थायी समिति रिपोर्ट की सिफारिशों के आलोक में समीक्षा कीजिए।

APPROACH · State the OOPE/cost-gap data → why price regulation helps (standard package rates, DRGs, transparency) but is limited (information asymmetry, supplier-induced demand, enforcement) → case for public health (primary care, prevention, credible alternative) → balance FDI/private role → conclude: clinical priorities over commercial ones.

Prelims MCQs

10 QUESTIONS — ANSWER KEY & RATIONALE FOLLOWS

Q1. With reference to a Glacial Lake Outburst Flood (GLOF), consider the following statements:

1. It is caused by the sudden release of water from a glacial or moraine-dammed lake.
2. Rock-and-ice avalanches and earthquakes can act as triggers.
3. GLOFs can affect areas far downstream of the source lake.

Which of the statements given above are correct? (a) 1 and 2 only (b) 2 and 3 only (c) 1 and 3 only (d) 1, 2 and 3

Q2. The Bhotekoshi and Trishuli rivers, in the news, are part of which major river system?

- (a) Karnali system (b) Koshi-Gandaki (Ganga) system (c) Brahmaputra system (d) Mahakali system

Q3. The Thiruvathira (Kaikottikali) dance is most closely associated with:

- (a) Tamil Nadu, during Pongal (b) Kerala, during Onam (c) Karnataka, during Ugadi (d) Andhra Pradesh, during Sankranti

Q4. Consider the following pairs of Kerala festivals/months:

1. Onam — Chingam (first month of the Malayalam calendar)
2. The Malayalam calendar is also called Kollavarsham
3. Vishu and Thiruvathira are, with Onam, among Kerala's major festivals

How many of the above statements are correct? (a) Only one (b) Only two (c) All three (d) None

Q5. Which of the following are among the rituals/art forms traditionally associated with Onam?

1. Pookkalam
2. Vallam Kali
3. Pulikali
4. Kummattikali

Select the correct answer: (a) 1 and 2 only (b) 1, 3 and 4 only (c) 2, 3 and 4 only (d) 1, 2, 3 and 4

Q6. In the context of health financing, Out-of-Pocket Expenditure (OOPE) refers to:

- (a) Government spending on public hospitals
- (b) Direct payments made by households at the point of care
- (c) Insurance premiums paid by employers
- (d) External aid for health programmes

Q7. A Diagnosis-Related Group (DRG) based reimbursement system is best described as:

- (a) Itemised billing for each service and consumable
- (b) A fixed, pre-determined payment for an inpatient stay based on diagnosis
- (c) A cap on the number of admissions per hospital
- (d) A tax on medical tourism revenue

Q8. Consider the following with reference to India's food security:

1. The NFSA, 2013 provides a legal entitlement to subsidised foodgrains.
2. ONORC enables portability of ration entitlements across States.
3. Millets (Shree Anna) are generally more water-intensive than paddy.

Which of the statements are correct? (a) 1 and 2 only (b) 2 and 3 only (c) 1 and 3 only (d) 1, 2 and 3

Q9. The Special Representatives (SR) mechanism and the Working Mechanism for Consultation & Coordination (WMCC) are associated with:

- (a) India-Bangladesh water sharing
- (b) India-China boundary question & border affairs
- (c) India-Pakistan Indus treaty
- (d) India-Nepal open-border management

Q10. Consider the following statements about wetlands and the Ramsar Convention:

1. The Ramsar Convention (1971) is an intergovernmental treaty for wetland conservation.
2. Eutrophication refers to nutrient enrichment causing algal blooms and oxygen depletion.
3. HYDRAA is a Hyderabad agency that has worked to reclaim encroached lakebeds.

Which of the statements are correct? (a) 1 and 2 only (b) 2 and 3 only (c) 1 and 3 only (d) 1, 2 and 3

ANSWER KEY & RATIONALE

Q1 — (d) 1, 2 and 3. A GLOF is a sudden discharge from a glacial/moraine-dammed lake; avalanches, ice-fall and earthquakes are common triggers, and the debris-charged flood can devastate areas far downstream (as on the Lhunde-Bhotekoshi-Trishuli).

Q2 — (b) Koshi-Gandaki (Ganga) system. The Bhotekoshi belongs to the Koshi network; the Trishuli feeds the Narayani (Gandaki), all draining ultimately to the Ganga.

Q3 — (b) Kerala, during Onam. Thiruvathira/Kaikottikali is a women's circular folk dance performed during Onam around the Nilavilakku lamp.

Q4 — (c) All three. Onam falls in Chingam, the first month of the Malayalam calendar (Kollavarsham); Vishu and Thiruvathira are the other two major festivals.

Q5 — (d) 1, 2, 3 and 4. Pookkalam (floral rangoli), Vallam Kali (boat race), Pulikali (tiger dance) and Kummattikali (mask dance) are all Onam-associated.

Q6 – (b) Direct payments by households at the point of care. High OOPE is a key indicator of weak financial protection and can push families into poverty.

Q7 – (b) A fixed, pre-determined payment for an inpatient stay based on diagnosis. DRGs standardise reimbursement and curb over-billing, unlike itemised billing.

Q8 – (a) 1 and 2 only. NFSA gives a legal entitlement; ONORC enables ration portability. Statement 3 is wrong – millets are *less* water-intensive and more climate-resilient than paddy.

Q9 – (b) India-China boundary question & border affairs. SRs handle the political framework of the boundary question; the WMCC (diplomats + military) manages border affairs.

Q10 – (d) 1, 2 and 3. All three are correct—Ramsar (1971), the definition of eutrophication, and HYDRAA's lakebed reclamation in Hyderabad.

QUICK REVISION RECAP — ONE-LINERS

- **Nepal flood:** GLOF-type debris flood on the Bhotekoshi/Lhende, Rasuwa district; ~157 dead, 130+ Indians missing; IAF relief; western disturbance + suspected rock-ice avalanche.
- **Thiruvathira/Kaikottikali:** women's circular clapping dance around the Nilavilakku during Onam; linked to Shiva-Parvati worship. Onam = Chingam month, Atham→Thiruvonam.
- **Private health-care:** 176th PSC report; ₹50,508 (private) vs ₹6,631 (public) hospitalisation; 368 recommendations; room-tariff cap vs 3-star hotels; DRGs; information asymmetry.
- **Food system:** NFSA 2013 (~800 mn people); 350+ MT production; diversify to millets/pulses; link IMD forecasts to buffer stocks; build a "climate buffer".
- **India-China:** SR eight-point consensus; trans-border rivers expert mechanism; new hotlines (Eastern & Middle sectors); BRICS Summit 12 Sept; call for transparency.
- **Urban lakes:** wetlands > forests in carbon/unit area; encroachment via "opportunity cost"; HYDRAA + "lake champions" models; Ramsar, AMRUT, Amrit Sarovar; need legal protection & unified governance.

PRELIMS TRAP-SETTERS — DON'T CONFUSE

- **Ramsar designation ≠ local conservation success:** an international tag does not by itself protect a wetland on the ground.
- **NDMA (India) vs NDRRMA (Nepal):** distinct national disaster authorities; India's NDMA is under the Disaster Management Act, 2005.
- **Millets are climate-resilient & low-water**—never assume they are more water-intensive than rice/wheat.
- **SR mechanism (2003) vs 2005 Agreement** on Political Parameters & Guiding Principles: the SRs were tasked to agree a framework; Article 10 anchors delineation to that framework.
- **Vishu, Onam, Thiruvathira** are Kerala's three major festivals—Thiruvathira is both a festival and a dance form.
- **Rasuwagadhi (border crossing) vs Gyirong/Kerung Port (Tibet side):** connected points on the Nepal-China frontier—don't treat as the same place.
- **Wetlands can outperform terrestrial forests in carbon storage per unit area**—a frequently mis-stated comparison; note the "per unit area" qualifier.