

## DAILY CURRENT AFFAIRS (DCA)

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## INDIA'S UPDATED SEISMIC ZONATION MAP (2025)

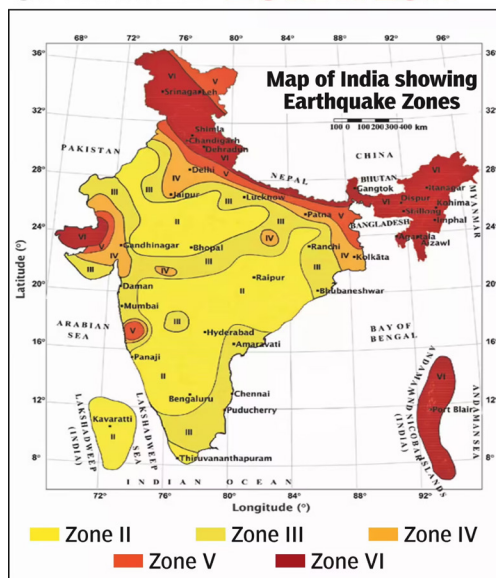
### In News

- India has released an updated seismic zonation map under the **new Earthquake Design Code (2025)**.
  - This revision aims to align **India's seismic safety standards with modern scientific understanding**, replacing the **outdated 2016 map** and historical-epicentre-based models.

### Need For Upgradation

- Earlier Maps Underestimated Himalayan Risk:** Previous zonation divided the Himalaya into Zones IV and V, despite the belt sharing one of the world's most active tectonic systems.
- Outdated Methodology:** Older models relied heavily on known past earthquake locations, magnitudes, broad geology, soil types & historical damage patterns.
- Underestimation of Rupture Propagation:** Earlier maps did not adequately account for southward propagation of Himalayan Frontal Thrust ruptures
  - Populated foothill regions like **Dehradun (near Mohand)** faced underestimated risk despite proximity to major thrust faults.
- Growing Exposure and Vulnerability:** Nearly three-fourths of India's population now resides in seismically active areas.
- Gap with International Best Practices:** Need to adopt internationally accepted Probabilistic Seismic Hazard Assessment (PSHA) methods.

## UPDATED ZONATION



### What is a Seismic Zonation Map?

- A seismic zonation map is a scientific representation that **divides a geographical area into zones** based on the intensity and frequency of earthquakes expected in different regions.
- It is published by the **Bureau of Indian Standards (BIS)** & integrated into the **Earthquake Design Code (IS 1893)**.
- It serves as a foundational tool for **urban planning, risk assessment & disaster preparedness**.

### Key Features of the New Seismic Map (2025)

- Introduction of Zone VI:**
  - The entire **Himalayan arc (Jammu & Kashmir-Ladakh to Arunachal Pradesh)** is now classified under the newly created highest-risk Zone VI.
  - Recognizes consistent, extreme tectonic stress along the **Indian-Eurasian plate boundary**.
- Scientific Methodology - PSHA:**
  - Built using internationally accepted **Probabilistic Seismic Hazard Assessment (PSHA) methods**.
  - Considers ground shaking attenuation with distance, tectonic regime, and underlying lithology.
- Enhanced Geographic Coverage:**
  - 61% of India's landmass** now classified under moderate to high hazard zones (increased from 59%).
  - The southern peninsula shows minor refinements with a broadly stable hazard profile due to relatively stable tectonic behavior.
- Boundary Rule Enhancement:**
  - Towns situated along boundaries separating two zones will automatically be placed in the higher-risk zone.
- Comprehensive Non-Structural Elements Safety:**
  - First-time focused attention on non structural components like parapets, ceilings, overhead tanks, façade panels, electrical lines, lifts, and suspended fixtures.

## FAULT LINES

- 75% population of India's population in seismically active regions
- 59% to 61% of landmass now under seismic risk
- 200 years since major quake in central Himalayas
- **Fault proximity clause:** Pulse-like tremors must be factored in
- New structural & safety rules applicable. Zero-failure standard – Hospitals, bridges, schools must stay functional
- **1% weight threshold:** Heavy non-structural parts must be anchored
- **PEMA index added:** Risk now includes population & infrastructure exposure

### • Near-Fault Provisions:

- ◆ Structural design must consider severe pulse-like ground motions for buildings close to active faults
- ◆ Updated limits on displacement, ductility, and energy dissipation.

### • Site-Specific Requirements:

- ◆ New provisions addressing liquefaction risks, soil flexibility, and site-specific response spectra.

### • Critical Infrastructure Standards:

- ◆ Hospitals, schools, bridges, pipelines, and major public buildings must remain functional after major earthquakes.

## Challenges in Implementation

- **Retrofitting Legacy Infrastructure:** High costs of retrofitting, technical complexity & coordination challenges across multiple jurisdictions.
- **Economic Burden:** Higher construction costs due to stricter standards.
- **Geotechnical Investigation Requirements:** Site-specific assessments require specialized expertise and equipment.

Source: TOI

## INDIA-US DEFENCE DEAL & STRATEGIC RELATIONS

### In News

- India has finalized a 7,995-crore follow-on support deal with the U.S. for its fleet of 24 MH-60R Seahawk helicopters, ensuring five years of sustained maintenance and supply.

### MH-60R Seahawk helicopters

- MH-60R, manufactured by Lockheed Martin Corporation, is an all-weather helicopter designed to support multiple missions with state of the art avionics and sensors.
- The MH-60R Seahawk is a maritime variant of the Blackhawk helicopter.
- India had signed an agreement with the U.S. for procurement of 24 MH-60Rs in February 2020.

### India-US Defence Partnership

- India-US defence cooperation is based on "New Framework for IndiaUS Defence Cooperation", which was renewed for ten years in 2015.
- In 2016, the defence relationship was designated as a Major Defence Partnership (MDP).
- Defence cooperation is multifaceted and includes regular institutionalized bilateral dialogue, military exercises, and defence procurements
- The recent agreements underscoring a shared commitment to security, technology transfer, and regional stability.

### Developments

- Important defence agreements which provide the framework for interaction and cooperation are:
  - ◆ Logistics Exchange Memorandum of Agreement (2016); Communications Compatibility and Security Agreement (2018); Industrial Security Agreement (2019); and Basic Exchange and Cooperation Agreement (2020) and Memorandum of Intent for Defense Innovation Cooperation (2018); Security of Supplies Arrangement (SOSA).
- Military-to-military ties are robust, with India conducting the largest number of exercises with the US—including Yudh Abhyas, Vajra Prahar, Malabar, Cope India, and Tiger Triumph—alongside participation in multilateral drills like RIMPAC and Red Flag.
- India also joined the Combined Maritime Force (CMF) in Bahrain in 2022. Overall, the partnership spans dialogue, procurement, technology, industry, and joint exercises, reflecting deepening strategic convergence in defence and security.

### Issues & Challenges

- Concerns remain over the pace of actual transfer of high-end defence technology.



- Bureaucratic hurdles and differing procurement systems slow down implementation.
- Strained ties following U.S. tariffs on Indian goods in August 2025.

### Conclusion and Way Forward

- India-US defence ties have grown into a strategic partnership focused on technology sharing, joint exercises, and Indo-Pacific security.
- To strengthen this, experts stress the need to streamline procurement, expand R&D in cyber, AI, and space, boost maritime cooperation, institutionalize high-level defence dialogue, and maintain geopolitical balance while preserving India's strategic autonomy.

Source : [TH](#)

## IMF GIVES INDIA A 'C' ON ITS GDP AND OTHER NATIONAL ACCOUNTS DATA

### In News

- The International Monetary Fund (IMF) has assigned India a 'C' grade for the quality of its national accounts statistics, marking one of the lowest ratings for a major economy.

### Why the IMF Gave a 'C' Grade?

- **Outdated Base Year (2011–12):**
  - ♦ India still uses the 2011–12 base year for GDP, CPI, and IIP.
  - ♦ Consumption patterns, production structures, technology adoption, and relative prices have changed significantly since then.
  - ♦ An old base year distorts real growth rates, inflation, and sectoral weights.
- **Inaccurate Representation of Inflation:**
  - ♦ CPI received a lower grade ('B' instead of 'A') due to:
    - Outdated base year
    - Excessive weightage of food items
  - ♦ This reduces the accuracy of inflation measurement, affecting RBI's monetary policy.
- **Weak Capture of Informal Sector:**
  - ♦ India's informal sector remains underestimated, as it is largely unregistered, cash-based and outside formal data systems.
  - ♦ This leads to mismeasurement of GDP levels, employment trends, and welfare outcomes.

### Delays in Data Revisions:

- ♦ Global best practice recommends base year revision every 5 years.
- ♦ India has not implemented a revision for over a decade, reducing timely alignment with economic reality.

### Need for Better Use of Modern Data Sources:

- ♦ While corporate sector data is now collected via MCA-21, several gaps remain.
- ♦ Integration of GSTN data for estimating value added has yet to be fully operational.

### How do IMF's Data Grades Work?

- The IMF assesses national statistics under its **Data Quality Assessment Framework (DQAF)**, which evaluates methodological soundness, accuracy and reliability, serviceability (timeliness, periodicity, consistency), accessibility, & assurance of integrity.
- Grading Categories are:
  - ♦ Grade A – High compliance with international standards
  - ♦ Grade B – Acceptable but with notable deficiencies
  - ♦ Grade C – Significant weaknesses affecting surveillance
  - ♦ Grade D – Poor-quality data seriously limiting analysis

### Possible Implications of the 'C' Grade

- **Weak Policymaking Precision:** Faulty or outdated data affects fiscal planning, inflation targeting, monetary policy & sector specific interventions.
- **Reduced Credibility of Economic Numbers:** Global investors, rating agencies, and financial institutions may view India's data with greater caution.
- **Inaccurate Growth and Welfare Assessment:** Misestimation of the informal sector may hide real growth performance, employment distress & household-level vulnerabilities.
- **Impaired Monetary Policy:** If inflation is mismeasured, the RBI's policy rates may not reflect true price pressures, affecting liquidity, borrowing, and growth.
- **Pressure for Statistical Reforms:** The IMF rating increases pressure on India to update base years, modernize survey systems & strengthen autonomy of statistical bodies.

**Basic Terminologies**

- **National Accounts:** A statistical framework summarising a country's economic activity, covering GDP, GVA, consumption, savings, and investment.
- **Base Year:** The reference year used to compare changes in prices and output over time. It should ideally be updated every 5 years.
- **GDP (Gross Domestic Product):** The total value of goods and services produced within a country in a given period.
- **GVA (Gross Value Added):** Output minus intermediate consumption; measures sector-wise economic contribution.
- **CPI (Consumer Price Index):** Measures retail inflation based on a representative basket of goods and services consumed by households.
- **IIP (Index of Industrial Production):** Measures industrial output in mining, manufacturing, and electricity.
- **Informal Sector:** Unregistered, unorganised economic activity without formal accounts or regulatory oversight.
- **MCA-21:** A database of corporate financial filings under the Ministry of Corporate Affairs.

Source: TH

**DELAY IN INDIA'S SAMUDRAYAAN MISSION****Context**

- A crucial set of tests on the **Samudrayaan**, India's first manned-submersible mission, has been pushed to **mid-next year** due to delays in procuring **syntactic foam cladding from France**.
  - ♦ This foam is essential for **buoyancy and must be fitted before the scheduled 500-metre trial dive**.

**About Samudrayaan Mission**

- The Samudrayaan Mission is a key component of India's **Deep Ocean Mission**. It involves the development of **MATSYA 6000**, an indigenously designed, fourth-generation manned submersible capable of carrying three people to a depth of 6,000 metres.
  - ♦ MATSYA 6000 is designed to operate for **12 hours**, with an emergency endurance of up to **96 hours**.

- It is being developed by **National Institute of Ocean Technology** (Chennai), an autonomous institute under the **Ministry of Earth Sciences** (MoES).
- India's research vessel **Sagar Nidhi** will be used to deploy and recover the MATSYA 6000.
- The mission has an estimated budget of 4,077 crore and is being implemented in phases over a five-year period from 2021 to 2026.

**Significance**

- India can harness its 11,098-km coastline, nine coastal states, and 1,382 islands through a blue economy strategy strengthened by the Samudrayaan Mission.
- Enables exploration of deep-sea minerals, fuels, and biodiversity, with nearly **95% of the deep ocean still unexplored**.
- Strengthens the security of undersea telecommunication cables, which is crucial as India's data transmission capacity is expected to quadruple with new submarine cables by 2025.
- Places India among an elite group of nations including the **US, Russia, China, Japan, and France** with deep-sea human exploration capability.

**Key Challenges**

- **Vessel Development:** Precise thickness of **titanium alloy sphere** is required, and even **0.2 mm deviation** in thickness risks collapse.
  - ♦ The 2023 implosion of OceanGate's Titan submersible on a Titanic dive highlights the critical importance of precision engineering.
- **Life Support Systems: Oxygen regulation and carbon dioxide scrubbing** are critical.
- **Aquonaut Health:** Requires high physical fitness, tolerance for limited food and water, and the ability to stay in confined spaces for up to 96 hours.
- **Communication: Radio waves fail** underwater, requiring **acoustic telephones**.

- ♦ India developed its own system, though initial tests struggled with **temperature and salinity effects**. Later trials in the open ocean confirmed functionality.
- **Foreign Dependence:** Syntactic foam (for buoyancy) sourced from France. Pressure testing of the titanium hull will be conducted in **Russia**.

#### Current Update

- NIOT has built a **steel prototype** of the submersible for preliminary trials.
- Simulated dives up to **100 metres** completed successfully.
- Pending: **500-metre test**, delayed due to late arrival of syntactic foam.
- After 500-m trials, the **final titanium hull** will be sent to **Russia** for pressure testing for 6,000-m depth.

Source: [TH](#)

## NEWS IN SHORT

### ITALY PASSES A FEMICIDE LAW

#### In News

- Italy has passed a new law formally **recognising femicide as a distinct crime, with life imprisonment as punishment**.
  - ♦ The move places Italy among a few nations like Mexico and Chile that specifically criminalise femicide, aiming to strengthen protections against gender-based violence.

#### What is Femicide?

- It is the killing of a woman for reasons related to her gender.
- It is considered among the most **severe manifestations of crimes targeting women**.
- The **2022 UN framework classifies femicides** into three categories based on the victim's relationship to the attacker:
  - ♦ Killings by intimate partners
  - ♦ Killings by other family members (blood relatives, in-laws, or adoptive relatives)
  - ♦ Killings by other perpetrators outside the family or intimate circle.

#### Causes

- Research links femicide to patriarchal structures that institutionalize male dominance suggesting solutions must be both structural (legal and policing reforms) and cultural (changing societal attitudes toward gender).

- A UN Women report estimated that in 2024 nearly 50,000 women and girls were killed by intimate partners or family members, though data gaps remain.

Source : [IE](#)

### G. V. MAVALANKAR

#### In News

- Lok Sabha Speaker Om Birla floral tributes to **Ganesh Vasudev Mavalankar**, the **first Speaker** of the Lok Sabha on his birth anniversary.

#### About G. V. Mavalankar

- Born in Baroda, Gujarat, he was a lawyer who abandoned his practice to join India's freedom struggle under Mahatma Gandhi's leadership. He served as President of the Constituent Assembly (Legislative) from 1946-1947.
- G.V. Mavalankar was popularly known as **Dadasaheb** and honoured by **Jawaharlal Nehru as the "Father of the Lok Sabha"**, was a pivotal figure in shaping India's parliamentary democracy.
- Mavalankar co-founded Ahmedabad Education Society and Gujarat Vidyapith, promoting national education alongside Patel and Gandhi.
- He also founded the **National Rifle Association** and the Institute for Afro-Asian Relations.
- His writings, **Manavatana Jharna, Sansmarano, and A Great Experiment** reflect his commitment to democratic values and nation-building.

Source: AIR

### MADHVACHARYA

#### In News

- Prime Minister Narendra Modi addressed the **Laksha Kantha Gita Parayana programme** at Sri Krishna Matha, Udupi.
  - ♦ Udupi holds a central place in **Madhva tradition and Dvaita Vedanta**.

#### About

- The Madhva tradition represents one of the **most influential schools of Indian philosophy and religious practice**.
- Founded by **Jagadguru Madhvacharya (also called Purnaprajna or Ananda Tirtha)** in the 13th century, this tradition is rooted in the teachings of **Dvaita Vedanta, or the doctrine of dualism**.

- The system is known for its strong **emphasis on devotion to Vishnu/Krishna**, its clear distinction between the individual soul and the Supreme Being, and its contribution to the **Bhakti movement**.
- A core feature of **Dvaita Vedanta is the doctrine of Pancha-Bheda, which outlines five real distinctions**: God and Soul, God and Matter, Soul and Matter, One Soul and Another Soul & One Type of Matter and Another. These differences are intrinsic to the structure of existence.

#### Contribution

- Madhva's devotional outlook helped shape the **ethos of Karnataka's later Haridasa movement**, which produced **saint-composers like Purandaradasa and Kanakadasa**.
- Madhvacharya **authored 37 Sanskrit works**, collectively called **Sarva-Mula Granthas**, which explain and defend his dualistic interpretation of Vedanta.

Source: [DD News](#)

## SIRPUR ARCHAEOLOGICAL SITE

#### In News

- The Sirpur archaeological site is being upgraded with facilities like battery-operated golf carts, digital exhibits, and immersive storytelling modules as part of efforts to secure a **UNESCO World Heritage tag**.

#### Sirpur Archaeological Site

- Sirpur is located two hours from Raipur in Chhattisgarh's Mahasamund district.
- It is a **5th–12th century archaeological site** featuring 34 Hindu, Jain, and Buddhist monuments along the Mahanadi river.
- It was **first identified in 1882 by Alexander Cunningham**, excavations resumed in the 1950s and later decades, uncovering 22 Shiva temples, five Vishnu temples, 10 Buddhist viharas, and three Jain viharas, with the earliest dating to the 5th century.

#### Key Features

- Sirpur was once the **capital of Dakshina Kosala under the Panduvanshi and Somavamshi kings**.
- It showcases early-medieval urban planning with palace ruins, markets, residences, temples, stupas, meditation cells, and water systems.

- **Notable structures** include the 7th-century Lakshmana Temple, one of India's finest brick temples, and the Surang Tila complex, built on a high terrace with shrines in the panchayatana style.
- It was also a **major Buddhist centre**, with large viharas, stupas, and the Tivaradeva Mahavihara housing a significant Buddha statue.
- Its sacred riverine landscape of ghats and temple **clusters embodies UNESCO's vision** of a cultural site shaped by both nature and humankind, enhancing its global heritage value.

#### Do you know?

- A World Heritage Site is a location of **"outstanding universal value"** — a place of cultural and/or natural significance so exceptional that it transcends national boundaries and is of common importance to present and future generations of humanity.
- A **UNESCO tag** enhances a site's international recognition, boosting its tourism and revenue.
- It can also help mobilise funds and strengthen efforts to protect monuments from destruction and encroachment.

Source: [IE](#)

## INDIA RE-ELECTED TO INTERNATIONAL MARITIME ORGANISATION COUNCIL

#### In News

- India has been re-elected to the **Council of the International Maritime Organisation (IMO) for 2026-27** with the highest vote tally.

#### About International Maritime Organization

- Overview: It is the **United Nations specialized agency** with responsibility for the safety and security of shipping and the prevention of marine and atmospheric pollution by ships.
- **Genesis**: IMO was established in 1948 following a UN conference in Geneva and came into existence in 1958.
- **Functions**: Its role is to **create a fair, universally adopted regulatory framework** that prevents operators from cutting costs at the expense of safety and sustainability, while fostering innovation and efficiency.
  - ♦ Its measures cover all aspects of shipping — from **design and construction to operation and disposal** — ensuring the industry remains safe, energy-efficient, and environmentally sound.



- **Members:** IMO has 175 Member States and three Associate Members, and its headquarters are in **London, United Kingdom.**
  - ♦ **India joined the IMO in 1959.**
- **Structure:** The IMO is administered by a biennially convened Assembly of all member states and a 40-member Council elected for two-year terms.
  - ♦ The Assembly functions as the organisation's highest governing authority.

Source: [Air](#)

## RBI NORMS FOR DIGITAL BANKING CHANNELS

### In News

- The Reserve Bank of India (RBI) issued norms on digital banking channels for regulated entities simplifying compliance and modernising financial governance.

### What are Digital Banking Channels?

- Digital banking channels refer to services offered by **banks through websites (internet banking), mobile phones (mobile banking), or other electronic platforms** that allow customers to carry out financial and banking transactions with a high level of automation and seamless service.

### Key Norms Issued By RBI

- **Explicit consent:** Banks must obtain customers' clear consent before activating any digital banking channel.
- **Mobile numbers allowed:** Banks may collect customers' mobile numbers for alerts and KYC.
- **Risk controls:** Banks may set transaction caps, velocity limits, and fraud-check measures based on internal policies.
- **Compliance With Payment System Rules:** Banks must ensure continuous compliance with directions issued by Department of Payment and Settlement Systems (DPSS) & Payment and Settlement Systems Act, 2007.
- **Mandatory monitoring:** Risk-based transaction surveillance required; banks must flag unusual behaviour and seek prior confirmation for outlier transactions
- **Network-independent access:** Mobile banking must work across all mobile networks.
- **No third-party product displays:** Banks cannot show third-party or group-company products on digital channels unless RBI permits.

Source: BS

## RUSSIA'S S-500 AIR DEFENCE SYSTEM

### In News

- The Prime Minister of India and the President of Russia are set to meet at the upcoming India–Russia Annual Summit, where both sides are expected to discuss India's interest in next-generation **S-500 Prometey air defence system.**

### About

- The S-500 Prometey is Russia's **most advanced long-range, surface-to-air and anti-space defence system**, designed to intercept a wide spectrum of modern and future airborne threats.
- **Developed by Almaz-Antey**, Russia's premier air-defence and missile-interception manufacturer.
- **S-500** can intercept aircraft, missiles, and hypersonic threats at distances **up to 600 km.**
- It is operational at altitudes up to 200 km, allowing interception of **ballistic missiles in mid-course, hypersonic glide vehicles & low-Earth-orbit (LEO) satellites.**
- It has a reaction time 3–4 seconds, nearly **twice as fast as the S-400.**

Feature	S-400	S-500
Range	380 km	600 km
Target Altitude	30–40 km	Up to 200 km (near-space)
Threats Intercepted	Aircraft, cruise missiles, limited ballistic missiles	Ballistic missiles, hypersonic weapons, stealth aircraft, LEO satellites
Reaction Time	9–10 sec	3–4 sec
Anti-Satellite Capability	No	Yes
Role	Long-range air defence	Air + space defence

### Strategic Significance for India

- **Major Upgrade to India's Air Defence Shield:** Acquiring the S-500 would significantly strengthen India's tiered missile defence network, complementing:
  - ♦ PAD/AAD ballistic missile defence
  - ♦ S-400 regiments
  - ♦ Indigenous systems (Akash-NG, MR-SAM)



- **Countering China and Pakistan:** Helps counter China's hypersonic missiles like DF-17.
  - ♦ Strong defence against Pakistan's ballistic missile arsenal.

Source: TH

## OPERATION SAGAR BANDHU

### Context

- In the aftermath of **Cyclone Ditrwah**, which caused widespread devastation across Sri Lanka, India swiftly launched **Operation Sagar Bandhu** to support relief and rescue efforts.

### About Operation Sagar Bandhu

- It is a Humanitarian Assistance and Disaster Relief (HADR) operation launched by India to provide emergency aid to Sri Lanka. Under the operation, India dispatched:
  - ♦ Relief material
  - ♦ Medical supplies
  - ♦ Emergency equipment
  - ♦ Critical HADR assets
- The operation reflects India's commitment to its **Neighbourhood First Policy** and the broader maritime vision of **MAHASAGAR**.

Source: PIB

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