

DAILY CURRENT AFFAIRS (DCA)

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INDIA-TRINIDAD ARCHIVAL PACT TO STRENGTHEN LEGACY OF GIRMITYA COMMUNITY

Context

- External Affairs Minister S. Jaishankar visited Trinidad and Tobago to strengthen India's engagement with the Caribbean nation and preserve the legacy of the Girmitya community.

Key Outcomes of Visit

- Preservation of Historical Records:** The Memorandum of Understanding (MoU) was signed between the National Archives of India and Trinidad and Tobago.
 - It seeks to **digitise and preserve archival records** related to Indian indentured labourers.
- Development of Heritage Infrastructure:** India launched a **Quick Impact Project** for the upgradation of **heritage facilities at Nelson Island**, a historic site associated with Indian migration. The project includes;
 - Construction of a memorial monument.
 - Creation of a digital hub of archival records.
 - Development of an audio-visual heritage experience.

Who are Girmityas?

- The Girmityas were indentured laborers from British India who were transported to work on plantations in the **19th and early 20th centuries**.
 - The term "Girmitya" is derived from the word "**agreement**," which referred to the **indenture contracts signed by Indian labourers** during the colonial period.
- Girmityas were sent to countries like **Fiji, Mauritius, Seychelles, Réunion**, South Africa, Trinidad and Tobago, British Guiana (now Guyana), Suriname, Malaysia, and Kenya.
- Migration to Trinidad and Tobago**
 - Approximately **143,000** indentured labourers migrated from India to **Trinidad between 1845 and 1917** and most migrants came from northern India and Bihar.
 - Their descendants today constitute nearly **40–45% of Trinidad and Tobago's population** and play a major role in its political, economic, and social life.

Significance for India

- Strengthening Diaspora Diplomacy:** India considers its diaspora an important pillar of foreign policy and global engagement.

- The initiative strengthens emotional and civilisational ties between India and overseas Indian communities.
- Expansion of India's Soft Power:** Preservation of the Girmitya legacy enhances India's cultural diplomacy.
- Recognition of Colonial History:** The initiative highlights the struggles faced by indentured labourers under colonial rule.
 - It contributes to **preserving the history of migration, labour exploitation, and resilience**.

Key Initiatives for Preserving Girmitya Heritage

- Establishment of Girmitya Studies Centre:** India is working towards establishing a dedicated Girmitya Studies Centre for research, documentation, and cultural preservation.
- Expansion of OCI Eligibility:** India extended Overseas Citizenship of India (OCI) eligibility up to the **sixth generation** for the Indian diaspora in Trinidad and Tobago in **2025**.

Challenges in Preserving Girmitya Heritage

- Incomplete Historical Records:** Many colonial-era records are fragmented, damaged, or unavailable. Variations in names and spellings complicate efforts to trace ancestry.
- Cultural Disconnect Across Generations:** Younger generations of the diaspora may have limited awareness of their ancestral history and migration experiences.
- Institutional Constraints:** Preservation of historical archives requires long-term institutional coordination, technical expertise, and funding support.

Way Ahead

- Comprehensive Digitisation of Archives:** India should collaborate with Caribbean countries to digitise ship records, plantation registers, and migration documents.
- Strengthening Cultural Exchanges:** Promote scholarship programmes, cultural exchanges, and heritage tourism initiatives for diaspora communities.
- Recognition of the Girmitya Experience:** India can advocate for greater international recognition of the Girmitya experience as a major chapter in global migration and colonial history.

Source: TH

INDIA PUSHES FOR INDIGENOUS AI IN DEFENCE SECTOR

Context

- Amid evolving warfare trends seen in the Iran and Ukraine conflicts, India's defence establishment is accelerating efforts to develop indigenous artificial intelligence (AI) systems for military applications.

Why is AI Becoming Important in Modern Warfare?

- **Transformation of Warfare:** AI is transforming warfare from manpower-intensive operations to data-driven and autonomous systems.
 - ♦ AI-powered drones and autonomous systems **improve surveillance, reconnaissance, and precision strikes.**
 - ♦ It improves **cyber warfare capabilities** through automated threat detection and response systems.
- **Global Conflicts:** AI-supported technologies significantly improve reconnaissance and tactical planning capabilities.
 - ♦ **In the Russia–Ukraine Conflict** the extensive use of drones, satellite intelligence, and AI-assisted battlefield analytics demonstrated the growing importance of intelligent warfare systems.
 - ♦ **In the Iran and West Asia Conflict,** AI-assisted systems were reportedly used for military targeting and operational planning.
- **China's Intelligentised Warfare:** China is rapidly integrating AI into military operations through **autonomous drone swarms, robotic combat platforms, and intelligent command-and-control systems**, increasing India's urgency to develop indigenous defence AI systems.

Why Does India Want Indigenous AI Systems?

- **Strategic Autonomy:** The dependence on foreign AI systems in strategic sectors such as defence may create **vulnerabilities during geopolitical tensions** and Indigenous systems **ensure sovereign control** over critical military infrastructure.
- **Importance of Data Security:** Military AI systems process highly sensitive and classified information.
 - ♦ Dependence on foreign AI platforms may create risks of **data leakage or external surveillance.**

- **Reduction in costs:** Defence AI development can strengthen India's startup and deep-tech ecosystem. It can help **lower the long-term import bill** associated with strategic technologies.

Role of Indian AI Startups

- **SarvamAI:** The company is developing indigenous foundational AI models for Indian use cases.
 - ♦ It focuses on **multilingual and domain-specific** AI systems.
- **BharatGen:** BharatGen is working on **indigenous generative AI technologies.**
 - ♦ These systems may support military intelligence and strategic communication applications.

Government Initiatives Supporting AI Development

- **IndiaAI Mission:** The IndiaAI Mission, approved in March 2024 serves as the overarching national framework to boost AI infrastructure, research, and startup ecosystems, including those directly serving the defence sector.
- **IDEX (Innovations for Defence Excellence):** Under the Defence India Startup Challenge, iDEX engages startups and MSMEs to develop indigenous AI, autonomous systems, and surveillance technologies.
- **The Centre for Artificial Intelligence and Robotics (CAIR),** a DRDO lab, serves as the premier R&D wing for AI, focusing on intelligent systems and cyber defense.

What are the Challenges?

- **Dependence on Foreign Hardware:** AI systems require advanced semiconductor chips and **Graphics Processing Units (GPUs).** Most high-end chips are manufactured by foreign companies.
 - ♦ India lacks sufficient domestic semiconductor manufacturing capability.
- **High Cost of AI Development:** Developing foundational AI models requires massive computing infrastructure, extensive data training and annotation, and continuous testing and refinement.
- **Limited Compute Infrastructure:** Indian firms continue to face challenges related to access to high-performance computing, availability of advanced AI chips and large-scale data centre infrastructure.

Concluding remarks

- The growing use of artificial intelligence in global conflicts has demonstrated that future warfare will increasingly depend on **intelligent systems, autonomous technologies, and real-time data processing.**
- India's push for indigenous AI capabilities in the defence sector reflects the need for **strategic autonomy, technological sovereignty, and stronger national security** preparedness in an era of intelligent warfare.

Source: IE

OPERATIONALISATION OF THE FOUR LABOUR CODES

Context

- Recently, the Union government fully operationalised the four Labour Codes by notifying the corresponding rules through more than 30 Gazette notifications.

About Four Labour Codes

- **Background of Labour Reforms in India:** India's labour laws were complex and fragmented, compliance-heavy, difficult for businesses to navigate, and inadequate for the informal workforce.
 - ♦ The government consolidated 29 labour laws into four broad codes between 2019 and 2020 to improve the **Ease of Doing Business.**
 - ♦ The Codes **came into force in November 2025**, while the **Rules notified in May 2026** complete their implementation framework.
- The four Labour Codes are:
 - ♦ **Code on Wages, 2019**
 - ♦ **Industrial Relations Code, 2020**
 - ♦ **Code on Social Security, 2020**
 - ♦ **Occupational Safety, Health and Working Conditions (OSHC) Code, 2020**
- The government has generated intense debate between the government, employers, trade unions, and opposition parties regarding labour flexibility, workers' rights, and social security protections.

Key Features of the Labour Codes

- **Major Provisions of Code on Wages, 2019**
 - ♦ **Universalisation of Minimum Wages:** The Code extends minimum wage provisions to all employees across organised and unorganised sectors.

- ♦ **Floor Wage:** The Central government may fix a national floor wage after considering minimum living standards, food requirements, clothing, housing, and other socio-economic factors.
 - States cannot fix wages below the national floor wage.
- ♦ **Working Hours:**
 - Daily wage employees: **8-hour workday**
 - Weekly work limit: **48 hours**
- ♦ **Wage Slips:** Employers must provide wage slips either electronically, or in physical form.
- **Major Provisions of Code on Social Security, 2020:** The Code consolidates laws relating to Employees' Provident Fund (EPF), Employees' State Insurance (ESI), maternity benefits, gratuity, gig and platform workers.
 - ♦ **Inclusion of Gig Workers:** Gig and platform workers are formally recognised under social security legislation **for the first time.**
 - ♦ **Changes in Existing Rules:** The Rules amend several frameworks including Employees' State Insurance (Central) Rules, 1950 and EPF Appellate Tribunal Rules, 1997.
- **Major Provisions of Industrial Relations Code, 2020:**
 - ♦ **Recognition of Trade Unions:** A trade union with at least **30% membership** in an establishment can be recognised as the sole negotiating union.
 - ♦ **Other Features:** Simplified dispute resolution, provisions for fixed-term employment, and stricter conditions for strikes and lockouts.
 - ♦ **Occupational Safety, Health and Working Conditions Code, 2020:** The OSHWC Code aims to regulate workplace safety, health standards, welfare measures, and working conditions.
 - It merges laws governing factories, mines, contract labour, and migrant workers.

Related Key Issues & Concerns

- **Dilution of Workers' Rights:** Trade unions argue that the Labour Codes weaken collective bargaining powers and make it easier for employers to hire and terminate workers.
- **Ambiguity in Minimum Wage Fixation:** The Rules do not clearly define uniform criteria for fixing minimum wages, raising concerns about wage disparities across States and sectors.

- **Restrictions on Trade Unions:** Stricter provisions related to strikes, union recognition, and dispute resolution are viewed as limiting labour activism and democratic negotiation rights.
- **Increased Labour Flexibility vs Job Security:** Provisions such as fixed-term employment may increase flexibility for industries but can reduce long-term job security for workers.
- **Concerns over Working Hours:** Though capped at 48 hours per week, apprehensions remain regarding extended daily work hours and possible exploitation of workers.
- **Weak Social Security Coverage:** Despite inclusion of gig and platform workers, clarity on implementation, funding, and delivery of benefits remains inadequate.
- **Implementation Challenges:** India's large informal workforce and weak labour inspection mechanisms may hinder effective enforcement of the Codes.
- **Federal Concerns:** Since labour falls under the Concurrent List, differences in State-level Rules may create uneven implementation and labour standards.
- **Fear of Informalisation:** Industries may increasingly rely on contractual and temporary labour, reducing permanent employment opportunities.
- **Limited Stakeholder Consultation:** Trade unions allege that several of their recommendations were ignored, leading to protests and concerns over participatory policymaking.

Way Forward

- **Need for Balanced Labour Governance:** The success of labour reforms depends on balancing economic competitiveness, worker protection, and social security expansion.
- **Suggested measures** are wider stakeholder consultations, strong grievance redressal systems, robust labour inspection mechanisms, universal social security architecture, and digital transparency in wage payments and compliance.

Source: TH

INDIAN OCEAN RIM ASSOCIATION (IORA) AND MARITIME SECURITY IN THE INDIAN OCEAN REGION

In News

- The 10th Indian Ocean Dialogue (IOD) was held in New Delhi under the theme “**Indian Ocean Region in a Transforming World.**”

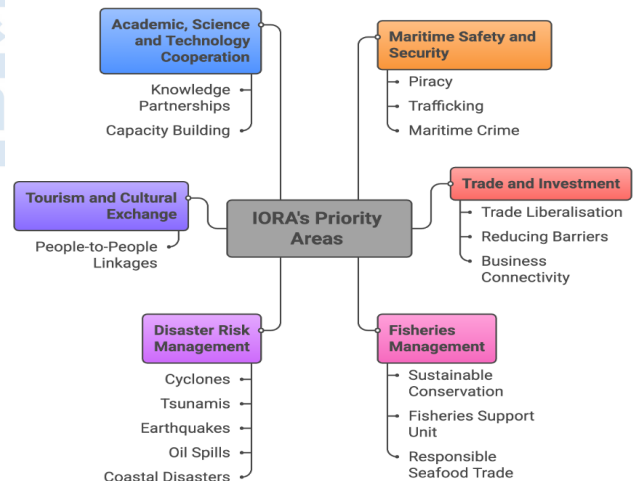
About

- India as IORA Chair (2025–27) used the platform to foreground maritime security, blue economy governance, and innovation all under its **MAHASAGAR vision**.
- The dialogue gained urgency in the backdrop of escalating West Asian conflict, disruptions in the **Strait of Hormuz**, and the sinking of the Iranian frigate IRIS Dena near Sri Lanka in March 2026.

Indian Ocean Rim Association (IORA)

- It is an intergovernmental organisation formed on 7 March 1997, born from a vision shared by late South African President Nelson Mandela during his 1995 visit to India.
- It was initially known as the **Indian Ocean Rim Initiative (IORI)** and later as the **Indian Ocean Rim Association for Regional Cooperation (IOR-ARC)**, before taking its current name.
- The **IORA Secretariat is based in Ebène, Mauritius**, headed by a Secretary-General appointed for a fixed term.
- Its apex decision-making body is the **Council of Ministers (COM), meeting annually**.

IORA's Priority Areas



- It currently consists of **23 Member States and 12 Dialogue Partners**.

Australia, Bangladesh, Comoros, India, Indonesia, Iran, Kenya, Madagascar, Malaysia, Maldives, Mauritius, Mozambique, Oman, Pakistan, Seychelles, Singapore, Somalia, South Africa, Sri Lanka, Thailand, Tanzania, UAE, France*

Significance of IORA for India

- **Platform to Assert Net Security Provider Role:** India's SAGAR doctrine (2015) and its successor MAHASAGAR vision (2025) both position India as the preferred security partner and first responder in the Indian Ocean. IORA gives this posture a legitimate multilateral home.

- **Counterweight to Chinese Influence:** China is only a Dialogue Partner in IORA, not a Member State. This structural reality gives India a leadership platform in the Indian Ocean that China cannot dominate from the inside. Unlike China's BRI, IORA, under Indian leadership, provides an alternative framework for connectivity and cooperation that is not transactional or debt-laden.
- **Energy and Trade Security:** IORA is India's institutional mechanism to keep these sea lanes stable through diplomacy before crises require naval deployments.
- **Blue Economy and Economic Diversification:** IORA's Blue Economy focus area directly supports India's ability to set regional standards, attract investment, and build partnerships for sustainable ocean resource use.
- **Diplomatic Relevance:** IORA is one of the few multilateral spaces where India is a founding voice and current Chair. It allows India to shape the rules of the maritime road on UNCLOS, on freedom of navigation, on sustainable fisheries, on maritime dispute resolution.
- **Distinct Identity from Overlapping Groupings:** India is simultaneously part of BIMSTEC, the Quad, SCO, IONS, and the G20. Each serves a different purpose. IORA's value is its unique geographic coverage, it is the only grouping that brings together East Africa, the Arabian Peninsula, South Asia, Southeast Asia, and Australia under one roof.
- **Soft Power and Civilisational Outreach:** IORA's Tourism and Cultural Exchange priority area gives India a legitimate platform to strengthen these historical ties, build goodwill, and project soft power across 23 nations in a way that is rooted in shared history rather than manufactured alignment.
- **Disaster Diplomacy and Humanitarian Leadership:** India has consistently been the first responder to natural disasters in the Indian Ocean from the 2004 tsunami to Cyclone Nargis in Myanmar. IORA's Disaster Risk Management framework institutionalises this role, allowing India to coordinate regional response mechanisms rather than acting unilaterally.
- **Leverage in the Indo-Pacific Narrative:** IORA provides India strategic depth for its Indo-Pacific engagement by locking in partnerships with African and Gulf states that are increasingly important in the broader geopolitical contest.

Why Does the Indian Ocean Matter?

- **Over 90% of India's trade by volume** and more than 85% of crude oil imports move by sea through the Indian Ocean.
- The Indian Ocean region facilitates roughly **25% of global maritime oil trade.**
- Nearly 95% of India's trade by volume and 68% by value moves through maritime routes.
- **Approximately 30–35% of India's total merchandise exports** are shipped through the Red Sea–Suez Canal corridor, especially goods destined for Europe, North America, and North Africa.

Challenges Limiting IORA's Effectiveness

- **Institutional Weakness:** IORA functions on voluntary commitments and consensus. It lacks enforcement mechanisms. Compare this to bodies like ASEAN or the Quad, which have more operational coordination capacity.
- **Geopolitical Rivalries:** India's deliberate exclusion of Pakistan from IORA (Pakistan sought membership in the early 2000s but was denied on the grounds that it refused MFN status to India, violating IORA's "sovereign equality" principle) reflects the same bilateral tensions that hobble SAARC.
- **Fragmented Regionalism:** IORA competes for member-states' attention and resources with at least 14 other regional or international bodies. The overlap with BIMSTEC, ASEAN, Quad, and IONS can dilute IORA's cohesion.
- **Unequal Development:** IORA brings together the UAE, Singapore, and Australia alongside Mozambique, Comoros, and Somalia. This disparity in economic weight creates uneven benefits from participation and can breed resentment.
- **Limited Security Mandate:** IORA's charter explicitly excludes bilateral disputes from deliberations. This makes it difficult to address the very conflicts such as the West Asian war that are now reshaping maritime security across the region.
- **No Military Dimension:** Unlike the Quad or even IONS, IORA has no mechanism for joint naval operations or coordinated military response to threats.

Way Forward

- **Strengthen Maritime Domain Awareness (MDA):** Expand satellite surveillance, information-

sharing mechanisms (building on IFC-IOR), and real-time coordination systems like MANTRA across more IORA members.

- **Institutionalise the Blue Economy:** Create enforceable standards for sustainable fisheries, marine pollution control, and ocean-based economic activities. The IORA Blue Carbon Hub (run by Australia's CSIRO) is a good model to replicate.
- **Deepen Cooperation on Non-Traditional Threats:** Like Piracy, IUU (Illegal, Unreported, Unregulated) fishing, drug trafficking, and climate-induced disasters cross maritime zones.
- **Expand IORA's Budget and Governance:** India has pledged to boost IORA's institutional capacity through public-private partnerships especially from maritime sectors like shipping, oil, gas, and tourism.
- **Build Maritime Human Capital:** Academic partnerships to create marine-focused courses are needed to develop a skilled regional workforce particularly for blue economy sectors.

Source: TH

SUSTAINABLE AGRICULTURE

In News

- National Mission for Sustainable Agriculture (NMSA) is promoting sustainable and climate-resilient agriculture through efficient water use, soil health management, and resilient farming practices.

Sustainable agriculture

- It means producing food continuously without harming the environment or ecosystem health.
- It focuses on maintaining soil productivity and ensuring farmers can sustainably manage resources, inputs, and labor over the long term.

Significance of Sustainable Agriculture

- **Food Security:** Ensures long-term productivity while conserving natural resources.
- **Climate Resilience:** Builds capacity to withstand droughts, floods, and heatwaves.
- **Livelihoods:** Supports nearly 46% of India's population dependent on agriculture.
- **Environmental Protection:** Reduces soil erosion, groundwater depletion, and chemical pollution.
- **Global Leadership:** India's promotion of millets ("Shree Anna") highlights climate-resilient crops.

Challenges

- **Soil Health Decline:** Overuse of fertilizers and pesticides has reduced organic carbon levels.
- **Water Stress:** Excessive groundwater extraction and limited irrigation coverage.
- **Small Landholdings:** Fragmented farms hinder mechanization and adoption of modern techniques.
- **Climate Change:** Increasing frequency of extreme weather events.
- **Market & Credit Access:** Small farmers struggle with fair prices and institutional credit.

Government Steps

- The Government of India launched the **National Mission for Sustainable Agriculture (NMSA)** in 2014–15 under the National Action Plan on Climate Change to address climate change impacts on agriculture and ensure long-term food and livelihood security.
- From 2018–19, NMSA became a sub-mission under Green Revolution-Krishonnati Yojana, and from 2022–23 it was integrated into Pradhan Mantri Rashtriya Krishi Vikas Yojana (PMRKVY) to strengthen climate-resilient and sustainable agriculture.
- **NICRA (National Innovations in Climate Resilient Agriculture):** Climate-resilient varieties, intercropping, agroforestry, zero-till sowing.

Suggestions

- **Promote Agroecology:** Shift from industrial farming to eco-friendly practices.
- **Water-Smart Farming:** Expand micro-irrigation and rainwater harvesting.
- **Digital Agriculture:** Use AI, IoT, and drones for precision input management.
- **Diversification:** Encourage pulses, oilseeds, and millets to reduce dependence on rice and wheat.
- **Farmer Cooperatives:** Strengthen FPOs (Farmer Producer Organizations) for better bargaining power.
- **Capacity Building:** Training farmers in sustainable practices and climate adaptation.

Conclusion

- Sustainable agriculture is essential for India's environmental protection, economic growth, and social well-being. The government has promoted it through policies, subsidies, and technology-based initiatives.

- However, long-term success depends on expanding eco-friendly farming practices, supporting small farmers, and combining modern technology with traditional knowledge.
- A balanced strategy involving policy support, innovation, and community participation is key to achieving productive, resilient, and sustainable agriculture in India.

Source:TH

NEWS IN SHORT

11 YEARS OF JAN SURAKSHA SCHEMES

Context

- Recently, PM Modi highlighted the impact of flagship social security schemes launched by the Union Government 11 years ago, including the **Pradhan Mantri Jeevan Jyoti Bima Yojana (PMJJBY)**, **Pradhan Mantri Suraksha Bima Yojana (PMSBY)**, and **Atal Pension Yojana (APY)**.
 - ♦ PMJJBY, PMSBY and APY were launched on **9th May, 2015**.

Pradhan Mantri Jeevan Jyoti Bima Yojana (PMJJBY)

- **Scheme:** PMJJBY is a one-year life insurance scheme renewable from year to year offering coverage for death due to any reason.
- **Eligibility:** Persons in the age group of **18-50** years having an individual bank or a post office account are entitled to enroll under the scheme.
 - ♦ People who join the scheme before completing 50 years of age can continue to have the risk of life covered up to age of 55 years upon payment of regular premium.
- **Benefits:** Life cover of **Rs. 2 Lakh** in case of death due to any reason against a premium of **Rs. 436/- per annum**.

Pradhan Mantri Suraksha Bima Yojana (PMSBY)

- **Scheme:** PMSBY is a one-year accidental insurance scheme renewable from year to year offering coverage for **death or disability** due to accident.
- **Eligibility:** Persons in the age group of **18-70 years** having an individual bank or a post office account are entitled to enroll under the scheme.
- **Benefits:** Accidental death cum disability cover of **Rs.2 lakh** (Rs.1 lakh in case of partial disability)

for death or disability due to an accident against a premium of **Rs.20/- per annum**.

Atal Pension Yojana (APY)

- **Background:** It is an initiative of the Government to provide financial security and cover future exigencies for the people in the unorganised sector.
 - ♦ APY is administered by **Pension Fund Regulatory and Development Authority (PFRDA)** under the overall administrative and institutional architecture of the **National Pension System (NPS)**.
- **Eligibility:** Open to all bank account holders aged **18 to 40 years**.
 - ♦ Applicants must **not be income tax payers**.
 - ♦ The subscriber must contribute for a **minimum period of 20 years**.
 - ♦ Contribution amount varies based on the chosen pension slab and age of joining.
- **Benefits:** Subscribers would receive the guaranteed minimum monthly pension of **Rs. 1000 or Rs. 2000 or Rs. 3000 or Rs. 4000 or Rs. 5000** after the age of **60 years**, based on the contributions.
 - **Disbursement of the Scheme Benefits:** Pension is first paid to the subscriber.
 - ♦ After the subscriber's death, the spouse receives the pension.
 - ♦ Upon the demise of both subscriber and spouse, the accumulated pension corpus is given to the nominee.
 - ♦ **In Case of Premature Death (Before Age 60):** The spouse can continue the contributions until the subscriber would have turned 60, maintaining pension eligibility.

Source: AIR

MULTIPLE INDEPENDENTLY TARGETED RE-ENTRY VEHICLE SYSTEM

In News

- India conducted the successful flight-trial of an Advanced Agni missile with **Multiple Independently Targeted Re-Entry Vehicle (MIRV)** system from Dr APJ Abdul Kalam Island, Odisha.

Multiple Independently Targeted Re-Entry Vehicle (MIRV) system

- MIRV technology enables missiles to carry multiple warheads that can strike different targets simultaneously, causing extensive damage.
- It strengthens a country's counterattack capability, especially for nations like India with a no-first-use nuclear policy.
- It is difficult to intercept because each warhead follows a separate trajectory and can also carry dummy warheads to bypass missile defence systems.
 - ♦ Advanced sensors and avionics further improve targeting accuracy and effectiveness.
- Developed in the 1960s and first used by the United States and the Soviet Union, it was later adopted by China, United Kingdom, and France.

Importance

- MIRV technology allows a single missile to carry multiple warheads that can strike the same or different targets simultaneously, making it more advanced than traditional single-warhead missiles
- India's acquisition of MIRV capability significantly strengthens its Agni missile system, especially in response to similar developments by China and Pakistan

Agni missile

- Defence Research and Development Organisation (DRDO) developed the Agni missile series as India's main land-based nuclear missile system.
- Earlier variants, Agni-1 to Agni-4, have ranges between 700 and 3,500 km and carry single warheads.
- The latest variant, Agni-5, equipped with MIRV technology, can strike multiple targets with high accuracy at ranges over 5,000 km, potentially reaching intercontinental range.
- It uses a three-stage solid-fuel engine and has undergone several successful tests since 2012, including a night trial in 2022

Source: PIB

HOMOGENEOUS ACCRETION

In News

- A Nature Astronomy study found that Earth formed mainly from local inner solar system materials through a process called homogeneous accretion.

Homogeneous accretion

- Homogeneous accretion is a planetary formation model where a planet grows from a uniform mixture of materials (metals, silicates, volatiles) accreting together at the same time.
- This means the planet's building blocks were chemically similar throughout its growth, unlike heterogeneous accretion, where different materials accrete in stages

Source: TH

SURVEY RECORDS 143 ODONATA SPECIES ACROSS WESTERN GHATS

In News

- A recent study in the Western Ghats highlights a significant biodiversity gap in **dragonflies and damselflies**, documenting only about 65% of historically recorded species, suggesting a possible 35% decline.
 - ♦ The **Western Ghats is a 1,600-km mountain chain** along India's west coast and a globally recognised biodiversity hotspot.

Odonata

- **Odonata is an insect order** that includes **dragonflies (suborder Anisoptera)** and **damselflies (suborder Zygoptera)**.
- They are characterized by transparent wings, long slender bodies, and a sloping thorax.
- Usually found near water, odonates are active daytime predators, and both adults and aquatic larvae feed on other

Key Findings of the survey

- The survey recorded **143 odonata species** across 144 sites in five States between 2021 and 2023, including 40 endemic species.
- While some species such as *Elatoneura souteri*, *Protosticta sanguinostigma*, and *Cyclogomphus ypsilon* are classified as vulnerable, many others fall under data deficient or not evaluated categories in the International Union for Conservation of Nature (IUCN) Red List, indicating knowledge gaps.
- **State-wise results** show highest **endemism in Kerala and Maharashtra**, while Gujarat recorded the lowest diversity.
- The study identifies major threats such as infrastructure expansion, hydropower projects, pollution, land-use change, tourism pressure, forest fires, and climate change. It also finds

higher biodiversity in the southern Western Ghats due to better habitats and perennial streams.

Source:TH

CANARY ISLANDS

Context

- A cruise ship carrying passengers with a **hantavirus outbreak** has arrived in **Spain's Canary Islands**.

About

- The Canary Islands, also known as the Canaries, are an archipelago in the **Atlantic Ocean** and form the southernmost autonomous region of Spain. They are located about 100 kilometres off the northwestern coast of Africa.
- The islands are divided into **two groups**: a western group (Tenerife, Gran Canaria, La Palma, La Gomera, and Ferro islands) and an eastern group (Lanzarote, Fuerteventura Island, and six islets).

- The islands sit near important Atlantic shipping routes connecting Europe, Africa, and the Americas, giving them economic and strategic importance.
- Formed by volcanic eruptions millions of years ago, the islands have a subtropical climate with warm temperatures and little seasonal variation.



Source: TH

