



# INSIGHTSIAS

SIMPLIFYING IAS EXAM PREPARATION

## **GOLDEN RICE**

Golden Rice (approved for commercial production in 2021) is genetically engineered to contain beta carotene, giving it a yellow-orange colour.

27 MAY - 1 JUNE 2024

# WEEKLY CURRENT AFFAIRS

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## GENERAL STUDIES – 2

Topics: Structure, organization and functioning of the Executive and the Judiciary; Ministries and Departments of the Government; pressure groups and formal/informal associations and their role in the Polity.

### 1. JUDICIAL PENDENCY IN INDIA

**Context:**

**Blaming court vacations for pending cases** overlooks deeper issues plaguing India’s judiciary, including unfilled vacancies and lack of infrastructure. The problem extends beyond judges’ schedules and requires comprehensive solutions.

**Status:**

As of September 2023, the Supreme Court of India has **80,344 pending cases, with 78% being civil matters and 22% criminal.** In 2023, the court disposed of 36,164 out of 37,777 cases filed. Over 4,000 pending cases are more than a decade old.



**Causes for huge pendency of cases:**

Causes for huge pendency of cases	Details
<b>Shifting role of SC</b>	Shifting the role of the Supreme Court from adjudicating cases of constitutional significance into a regular court of appeals or cases of violation of fundamental rights.
<b>Shortage of judges</b>	Around 25% of posts are lying empty in the subordinate courts, which leads to a poor Judges to Population Ratio. Earlier, the Law Commission had recommended <b>50 judges per million population.</b>

<b>Low budgetary allocation leads to poor infrastructure</b>	The infrastructure status of lower courts is dismal due to which they fail to deliver quality judgements.
<b>The burden of government cases</b>	Centre and the States were responsible for over 46% of the pending cases in Indian courts.
<b>Special leave petition</b>	Frivolous PILs and government policies which are challenged by the people take up most of the judiciary’s time.
<b>Lack of court management systems</b>	Only a few courts have court managers who help improve court operations and optimize case movement and judicial time.

**Consequences of pendency:**

- Denial of ‘timely justice’ amounts to a denial of ‘justice’ itself:** Timely disposal of cases is essential to maintain the rule of law and provide access to justice.
- A weak judiciary has a negative effect on social development, which leads to:**
  - lower per capita income;
  - higher poverty rates;
  - poorer public infrastructure; and
  - higher crime rates.
- Affects human rights:** Overcrowding of the prisons results in “violation of human rights”.

**Way forward:**

- Split the Supreme Court into Two Divisions:** The 10<sup>th</sup> Law Commission proposed to divide the Supreme Court into a Constitutional Division and a Legal Division, focusing on specific areas of law to streamline cases.
- Establish a National Court of Appeal for SLPs:** SC had previously suggested the creation of a specialized court to handle special leave petitions, allowing the Supreme Court to focus on constitutional and public law issues.
- Establish Regional Benches of Supreme Court:** Recommendation (229th Law Commission Report, 2009) to set up regional benches in Delhi, Chennai/Hyderabad, Kolkata, and Mumbai to hear non-constitutional cases and reduce the backlog.
- Increase the number of Work Days:** Proposals to extend the working days of the Supreme Court and reduce vacation periods to address the backlog of cases.
  - The 2009 Law Commission, in its 230th report,** suggested that court vacations be cut down by 10-15 days at all levels of the judiciary to help cut the backlog of cases.

5. **Establish a Final Court of Appeal and a Permanent Constitution Bench:** Suggestions to separate the Supreme Court's functions into a Final Court of Appeal and a dedicated Constitution Bench for better efficiency and consistency.
6. **Establish a Dedicated Authority for Infrastructure:** Proposal (by Former CJI NV Ramanna) to create a National Judicial Infrastructure Authority of India (NJIAI) to improve judicial infrastructure across the country.
7. **Alternate dispute resolution (ADR):**
  - a. Lok Adalat should be **organized regularly for settling civil and family matters.**
  - b. **Gram Nyayalayas** will help in decreasing the workload of the judicial institution.
  - c. **Village Legal Care & Support Centre** can also be established by the High Courts to work at the grassroots level.

### Conclusion

The fundamental requirement of a good judicial administration is accessibility, affordability and speedy justice, which will not be realized until the justice delivery system is made within the reach of the individual in a time-bound manner and within a reasonable cost.

### Insta Links

- [Judicial Pendency](#)

### Mains Links:

**Q. Critically examine the Supreme Court's judgement on the 'National Judicial Appointments Commission Act, 2014' with reference to the appointment of judges of higher judiciary in India. (USPC 2017)**

### Prelims Links:

**Q. With reference to the Indian judiciary, consider the following statements: (USPC 2021)**

1. Any retired judge of the Supreme Court of India can be called back to sit and act as a Supreme Court judge by the Chief Justice of India with the prior permission of the President of India.
2. A High Court in India has the power to review its own judgement as the Supreme Court does.

**Which of the statements given above is/are correct?**

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

**Ans: (c)**

Topics: Government policies and interventions for development in various sectors and issues arising out of their design and implementation.

## 2. PROSPECTS OF TOURISM IN INDIA: "HUNAR SE ROZGAR" SCHEME

### Context:

The "**Hunar se Rozgar**" scheme, initiated by the Ministry of Tourism in 2006, aims to provide skill training for employment esp in the Tourism sector. Despite its potential, the **scheme faces bureaucratic hurdles and lacks widespread awareness.**

### More about the scheme:

The Ministry of Tourism launched **the 'Hunar se Rozgar Tak' (HSRT), targeting school dropouts for employment or self-employment training.** With an annual budget of around ₹30 crore, HSRT aims to address skill gaps by offering market-relevant training and fostering entrepreneurship among urban youth.

The scheme was **designed as a six to eight-week free training program** for individuals aged 18-28, with selected expert institutes. **Star hotels** are mandated to train a minimum number of participants. Despite efforts to integrate the unorganized sector into mainstream employment through skill development, a significant employment gap persists, especially among youth in northern states, where the scheme primarily attracts participants.

### Status of Tourism Sector in India:

1. **India ranks 39th on the World Economic Forum's Travel & Tourism Development Index 2024**, contributing **7% to GDP.**
2. **Cumulative FDI:** Hotel and Tourism industry received over **USD 17 billion** FDI (April 2000-December 2023), **2.57% of total FDI.**
3. **Employment:** Over 32 million jobs generated, about 7% of total employment in 2021. Expected **53 million jobs by 2029.**
4. **Tourist Arrivals:** about 10 lakh foreign tourist arrivals (Jan-Dec 2023) compared to 6 lakhs in the previous years.
5. **Business Growth:** Projected USD 125 billion travel market by FY27; Indian airline market to double by FY27; Indian hotel market to reach USD 52 billion by FY27.

### Significance of Tourism Industry in India:

**The tourism sector in India is vital for several reasons.**

1. Firstly, it's a **significant contributor to foreign exchange earnings**, with landmarks like the Taj Mahal attracting international visitors.
2. Secondly, **tourism generates positive spillover effects**, stimulating growth in sectors like hospitality and transportation.
3. Thirdly, it **promotes inclusive growth** by creating economic opportunities in remote areas.
4. Additionally, **tourism fosters intercultural ex-**

**changes** and serves as a strategic diplomacy tool, enhancing bilateral relations and fostering peace.

**India's Potential in Tourism:**

Opportunity	Description
<b>Medical and Wellness Tourism</b>	India's <b>well-established healthcare system and traditional wellness practices, such as Ayurveda, Yoga, and meditation</b> , present opportunities for medical and wellness tourism. Offering quality healthcare services, rejuvenation retreats, and specialized treatments can attract international tourists seeking affordable healthcare and holistic wellness experiences.
<b>Rural and Tribal Tourism</b>	Rural areas in India possess unique cultural and natural assets that can be showcased through rural tourism initiatives. This may include <b>agri-tourism, handicraft demonstrations, and community-based tourism</b> projects, providing visitors with authentic experiences while boosting local economies.
<b>Adventure Tourism</b>	India's diverse landscapes offer ample opportunities for adventure tourism, including <b>trekking, mountaineering, wildlife safaris, river rafting, and more</b> . Developing and promoting adventure tourism infrastructure and activities can attract adventure enthusiasts from around the world and contribute to local economic growth.
<b>Eco-Tourism</b>	India's biodiversity hotspots, national parks, and protected areas offer great potential for eco-tourism.
<b>Film Tourism</b>	India's vibrant film industry has a significant fan following worldwide. Capitalizing on film tourism by promoting shooting locations, film-related tours, and experiences can attract film enthusiasts and create economic opportunities by showcasing the glamour of Bollywood and regional cinema.
<b>Culinary Tourism</b>	Promoting culinary tourism through food festivals, culinary tours, and cooking classes can showcase the richness of Indian cuisine and provide visitors with immersive culinary experiences, attracting food enthusiasts and promoting cultural exchange.

**Challenges in harnessing its full potential**

- Inadequate Infrastructure:** Many tourist destinations lack essential infrastructure, such as connectivity and basic amenities, hindering accessibility and visitor experience.
- Governance Challenges:** Governance issues, including unclear guidelines for tourists and inefficiently managed facilities, deter potential visitors.
- Multiplicity of Taxes:** The complex tax structure increases the cost of tourism, making it expensive for tourists.
- Unskilled Human Resources:** A shortage of skilled manpower, including multilingual guides, affects the quality of tourist services.
- Quality of Services:** Inconsistent quality standards, lack of cleanliness, and inadequate facilities impact the tourist experience negatively.
- Safety and Security:** Incidents of harassment and crimes against tourists undermine safety and security, affecting tourism.
- Environmental Sustainability:** Waste management challenges in popular tourist destinations threaten ecosystems and infrastructure.
- Regulatory Framework:** Complex regulations and bureaucratic hurdles discourage tourism-related investments and growth.
- Marketing and Promotion:** Limited exposure and marketing efforts for lesser-known destinations hinder tourism development.
- Seasonal Imbalances:** Seasonal variations in tourist arrivals lead to overcrowding in popular areas and underutilization in off-peak periods.

**Initiatives Related to Tourism in India:**

- Swadesh Darshan Scheme:** Develops theme-based tourist circuits across India to enhance cultural, historical, and natural heritage experiences.
- PRASAD Scheme:** Focuses on the development and beautification of pilgrimage sites.
- HRIDAY:** Aims to preserve and revitalize heritage cities.
- Paryatan Parv:** Encourages domestic tourism through nationwide cultural events and activities.
- Dekho Apna Desh Initiative:** Promotes domestic tourism by exploring India's diverse landscapes and cultural heritage.
- Ek Bharat Shreshtha Bharat:** Promotes cultural integration through state pairings, fostering unity and diversity.
- National Tourism Policy, 2022:** Focuses on green tourism, digital tourism, destination management, skilling, and supporting tourism-related MSMEs.
- Digital Initiatives:**
  - e-Visa Facility:** Simplifies visa application process.

- b. **Web-based E-Ticketing:** Reduces wait times at tourist attractions.
- c. **National Integrated Database of Hospitality Industry (NIDHI):** Provides updated information about accommodation units.
- d. **Swachh Paryatan Mobile App:** Addresses cleanliness issues at tourist spots.

#### Way forward:

1. **Focusing on Safety and Security:** Deploy tourism police and implement strict security protocols. Promote safe travel practices to enhance tourist confidence.
2. **Improving Connectivity and Infrastructure:** Enhance transportation links to remote tourist destinations. Drive improvements through public-private partnerships or government investments.
3. **Tax Reform:** Advocate for tax reform to simplify the tax structure. Harmonize various taxes to create a uniform taxation system.
4. **Training Programs:** Provide comprehensive training to the unskilled workforce. Focus on customer service, cultural sensitivity, and language skills.
5. **Enhancing Online Presence:** Utilize social media and travel websites to boost visibility. Promote tourist destinations through digital platforms like **"Ek Bharat Shreshtha Bharat."**

#### Conclusion:

Collaborative efforts from the **government, local communities, and industry players**, investments in infrastructure development, training programs to enhance service quality, implementation of sustainable tourism practices and targeted marketing campaigns can help overcome these challenges and harness the full potential of the tourism industry in India.

#### Insta Links:

- [Schemes under the Ministry of Tourism](#)

#### Mains Links:

**Q.1** How can the mountain ecosystem be restored from the negative impact of development initiatives and tourism? (UPSC 2019)

**Q.2** The states of Jammu and Kashmir, Himachal Pradesh and Uttarakhand are reaching the limits of their ecological carrying capacity due to tourism. Critically evaluate. (UPSC 2015)

[Topics: Bilateral, regional and global groupings and agreements involving India and/or affecting India's interests.](#)

## 3. SQUAD AND THE RISE OF MINILATERALISM IN THE INDO-PACIFIC

#### Context:

The rise of Chinese aggression in the Indo-Pacific has led to the formation of **Squad—a minilateral group comprising the US, Japan, Australia, and the Philippines** (a testament to the growing importance of **"minilateralism"**.)

#### What is minilateralism?

It involves **small groups of nations collaborating** to tackle problems or pursue mutual goals.

- **Nature:** Informal, flexible, voluntary frameworks with varied situational interests, shared values, or relevant capabilities.

#### Reasons for the rise of minilateralism:

1. **Dysfunctional multilateral institutions:** Lack of consensus and gridlock due to diverse interests and ideologies.
2. **Flexibility and agility:** Allows quicker decision-making and targeted cooperation.
3. **Issue-based cooperation:** Enables like-minded countries to address specific mutual interests.
4. **Changing 'Balance of Power':** The emergence of aggressive China led to formations like QUAD, and AUKUS.

#### Concerns with rising Minilaterals:

1. **Legitimacy and inclusiveness:** Lack of inclusiveness may undermine the interests of the Global South.
2. **Limited resources and capabilities:** Smaller groups may lack sufficient resources for complex challenges.
3. **Tensions and divisions among countries:** Potential for exclusionary bloc politics.
4. **Accountability and transparency:** Informal structure raises concerns about democratic oversight.

#### Reasons Behind India, historically, supporting multi-lateral Agreements

1. **Collective negotiation power** – Mutual interest groups (Developing block, G77 etc.,) can collectively push the concerns of developing countries as a whole— IP rights, Labour laws, Environmental norms, Rate of tariff, and the proposal for tariff reduction to suit the requirements of the concerned countries.
2. **India's vision of the Multi-Polar world** – India does not want to be part of a bipolar or unipolar world – For that, a multilateral forum like WTO with Equal voice equal votes and full negotiation power for all concerned parties is the best forum.

3. **It connects India to the global value chain** - Multilateral agreements lead to India becoming a part of the global value chain.
4. **Failure of regional agreements:** For example in the case of SAARC where negotiations like SAFTA are usually marred by bilateral issues such as acrimony between India and Pak.

**Evolving global order and the changing nature of threats** are posing difficult questions on the continued relevance of multilateral frameworks. **Bilateral, Pluri lateral and Mini laterals** can help in framing targeted partnerships that can focus energies on shared interests and concerns in the current geopolitical situations.

**Should India change its stance and go for Bi-lateral/ Mini-laterals rather than Multi-laterals? Yes.**

- **Importance of the bilateral agreements for India:** 72.6% of India's imports are from merely 15 countries and 60.5% of exports go to just 15 countries.
- **Bilateral agreements have the following other benefits**
  - Bilateral trades can be concluded Swiftly
  - Improves friendly relations
  - Negotiations possible with practical aims
  - Mutual compromise and accommodation at a fast pace when compared to multilateral routes
- **Increased tensions and retreat of war in Europe** – For example During the **Russia -Ukraine** conflict, India has taken a strategic stand based on the national interest which was not possible being a part of multilateral Western groups who were opposed to trade with Russia.
- **Bilateral engagements with some nations are so important that it impossible to negotiate in multilateral forums**
  - **Russia** (Strategic and Military partner)
  - **Israel** (Military partnership and the technology transfer)
  - **US** (Strategic and diplomatic partner and as a balance to China )
  - **Japan** (Economic partnership)
  - **Australia** (Co-operation in the Blue Economy and Indo-pacific region)

**There is a growing importance of strategic alliances over global cooperation.** These initiatives can facilitate the creation of issue-specific partnerships between like-minded countries.

For instance, mini laterals can provide a forum to strengthen defence and security cooperation in new regional theatres, such as the Indo-Pacific.

**Easy cooperation of likeminded with converging interests** –A range of mini laterals have been created to advance the interests of like-minded countries, such as

- The Quad
- the India-Japan-US trilateral
- the India-France-Australia trilateral

**Better decision-making and coordination:** With a smaller membership, they can expedite decision-making and facilitate policy coordination on important focus areas.

**Seeking Informal dialogues:** Trilateral are an effective way to discuss emerging issues in a flexible manner without establishing rigid commitments and going through lengthy formal negotiations

**Challenges:**

**The rise of minilateralism has disrupted international interdependence** and globalization, leading to fragmented global governance mechanisms. This is evident in the ambiguity of QUAD's strategic interests in countering Chinese aggression.

**Conclusion**

However, India **should take a balanced view and engage** with trading partners bilaterally and through plurilateral and multi-lateral agreements forums depending on case to case basis.

**Prelims Link:**

**Q. In which one of the following groups are all the four countries members of G20? (UPSC 2020)**

- (a) Argentina, Mexico, South Africa and Turkey
- (b) Australia, Canada, Malaysia and New Zealand
- (c) Brazil, Iran, Saudi Arabia and Vietnam
- (d) Indonesia, Japan, Singapore and South Korea

**Ans: A**

**GENERAL STUDIES - 3**

Topics: Conservation related issues, environmental pollution and degradation, environmental impact assessment.

**1. ECONOMIC COST OF CLIMATE CHANGE**

**Context:**

The economic toll of climate change is staggering, with recent UN studies revealing that **global GDP could have been 37% higher** without warming since 1960.

**What is Climate Change?**

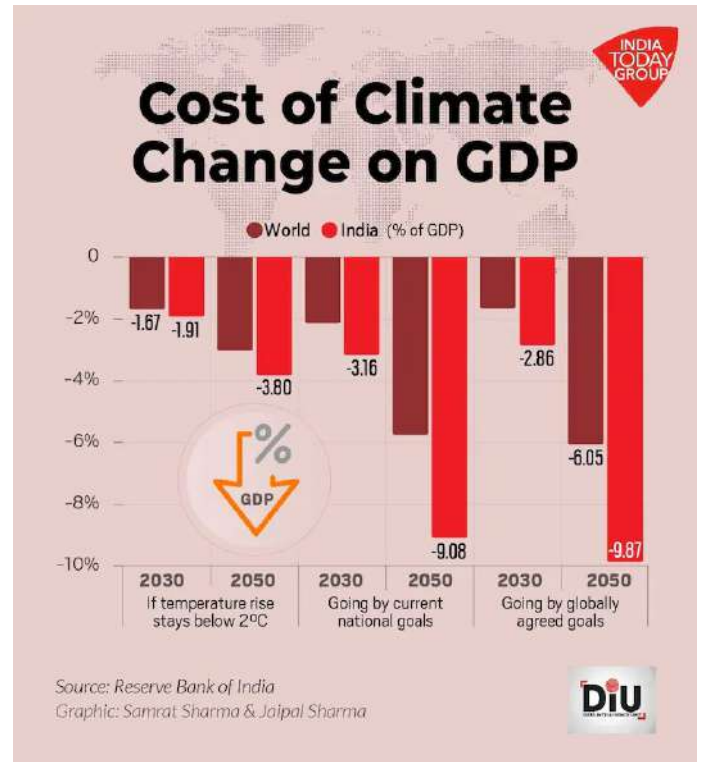
Climate change refers to **long-term alterations in temperatures and weather patterns.** While natural factors like **solar activity and volcanic eruptions** can contribute, human activities, especially the burning of fossil fuels, have been the primary driver since the 1800s. From 1970 to 2021, nearly 12,000 climate change-induced disasters occurred, causing over 2 million deaths and **\$4.3 trillion** in economic losses.

**India ranked 7th in the Global Climate Risk Index 2021**, indicating high exposure and vulnerability to climate risk events. Its diverse climate faces various temperatures, precipitation patterns, and extreme weather events, impacting the economy spatially and temporally.

### Impact of Climate Change on the Economy:

Impacts	Description
Reduced Agricultural Productivity and Yield	Climate change can <b>disrupt crop cycles and lower agricultural</b> yield
	The <b>southwest monsoon has also become unpredictable</b> . The annual average rainfall in India has gradually declined while intense wet spells as well as dry spells have increased in India.
Setback to Industrial and Service Sector	Increased operational costs, reduced profits, and infrastructure damage can occur due to <b>climate-related regulations, investment shifts, and extreme weather events</b> , affecting industrial and service sectors.
Infrastructure Damage	Extreme weather events like <b>floods and heatwaves</b> induced by climate change can cause significant damage to infrastructure, leading to economic losses.
Labor Market Impacts	Climate-induced <b>health hazards</b> may reduce productivity and prompt migration from climate-vulnerable areas; Global job losses from heat stress by 2030.
	In 2020, the <b>World Bank said that India could account for 34 million of the projected 80 million global job losses</b> from heat stress-associated productivity decline by 2030.
Risks for Banks and Financial Institutions	Physical and transition risks from climate change can affect banks and financial institutions directly and indirectly, impacting their credit, market, liquidity, operational, and reputational risks.
Impacts on High-Emission Industries	Industries contributing to <b>high greenhouse gas emissions face challenges in transitioning to cleaner technologies</b> , affecting electricity production, transportation, and other sectors.
Resource Scarcity	Climate <b>change worsens water scarcity</b> , leading to conflicts over shared water resources, and impacting agriculture, hydropower, and economic activities.
Erupted Arctic Economic Opportunities	Melting Arctic sea ice opens economic opportunities but also raises <b>concerns over resource exploitation and territorial disputes</b> among nations with interests in the region.
Climate-induced Conflicts	Climate change exacerbates <b>existing tensions and conflicts over resources</b> , particularly in regions facing political instability and economic challenges, such as the Syrian conflict influenced by prolonged drought.
Climate-related Supply Chain Disruptions	Extreme weather events disrupt global supply chains, causing <b>economic losses and shortages of critical goods</b> , exemplified by the 2011 floods in Thailand impacting electronics and automotive manufacturing.
Climate Gentrification	Climate change susceptibility prompts <b>wealthier individuals and businesses to relocate</b> , potentially leading to economic displacement and further marginalization of vulnerable communities in safer areas.

**Risk Emanating from climate change:**

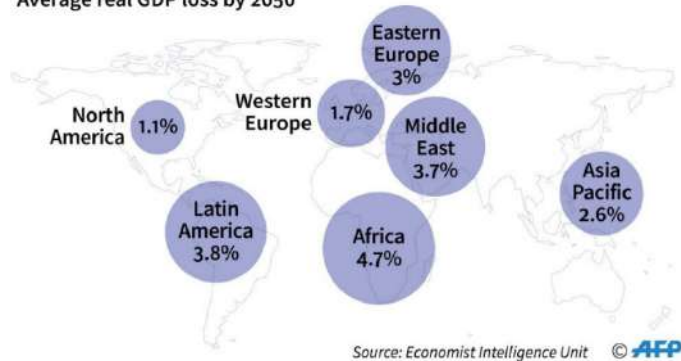


**What should be done:**

- Industrial Symbiosis:** Revolutionize circular economy, incentivize waste reduction, and promote industrial symbiosis.
- Public-Private Partnerships:** Encourage collaborations for green innovation, and establish dedicated funds for startups.
- Climate-Conscious Urban Planning:** Prioritize sustainability in city planning, and integrate climate measures into Smart Cities Mission.
- Climate-Resilient Special Economic Zones (SEZs):** Create zones with sustainable practices, and attract green businesses and industries.
- National Green Taxonomy:** Establish a classification system for sustainable activities, and guide investments and policies.
- Green Bond Financing:** Issue sovereign green bonds to fund climate-resilient infrastructure projects.

**Economic impacts of climate change**

Average real GDP loss by 2050



**Conclusion:**

India, the third-largest emitter of greenhouse gases in 2020, is projected to peak emissions between 2040-2045, posing challenges for its energy transition plans. A forward-thinking approach is crucial for navigating this trajectory effectively.

**Mains Link:**

Q.1 Describe the major outcomes of the 26th session of the Conference of the Parties (COP) to the United Nations Framework Convention on Climate Change (UNFCCC). What are the commitments made by India in this conference? (UPSC 2021)

Q.2 'Climate Change' is a global problem. How will India be affected by climate change? How Himalayan and coastal states of India be affected by climate change? (USPC 2017)

#### Prelims Link

**Q.1 In the context of India's preparation for Climate-Smart Agriculture, consider the following statements: (UPSC 2021)**

1. The 'Climate-Smart Village' approach in India is a part of a project led by the Climate Change, Agriculture and Food Security (CCAFS), an international research programme.
2. The project of CCAFS is carried out under Consultative Group on International Agricultural Research (CGIAR) headquartered in France.
3. The International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) in India is one of the CGIAR's research centres.

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

**Ans: (d)**

**Q.2 Which of the following best describes/describe the aim of 'Green India Mission' of the Government of India? (UPSC 2016)**

1. Incorporating environmental benefits and costs into the Union and State Budgets thereby implementing the 'green accounting'.
2. Launching the second green revolution to enhance agricultural output so as to ensure food security to one and all in the future.
3. Restoring and enhancing forest cover and responding to climate change by a combination of adaptation and mitigation measures.

Select the correct answer using the code given below.

- (a) 1 only
- (b) 2 and 3 only
- (c) 3 only
- (d) 1, 2 and 3

**Ans: (c)**

**Q.3 With reference to 'Global Climate Change Alliance', which of the following statements is/are correct? (USPC 2017)**

1. It is an initiative of the European Union.
2. It provides technical and financial support to targeted developing countries to integrate climate change into their development policies and budgets.
3. It is coordinated by World Resources Institute (WRI) and World Business Council for Sustainable Development (WBCSD).

Select the correct answer using the code given below:

- (a) 1 and 2 only
- (b) 3 only
- (c) 2 and 3 only
- (d) 1, 2 and 3

**Ans: (a)**

Topics: Disaster and management.

## 2. STATE OF FIRE SAFETY STANDARDS IN INDIA

#### Context:

Recent tragedies at a children's hospital in Delhi and a gaming zone in Rajkot, claiming 34 lives, have underscored the state of safety standards in India.

In the Delhi hospital fire, **seven newborns died**, and concerns were raised about illegal cylinder refilling. The **Rajkot gaming zone fire**, which killed 27, was due to an electrical short circuit.

#### Status of Fire Accidents in India:

1. In 2022, In India, **7,435 people were killed in over 7,500 fire accidents** (NCRB report 2022).
2. **Maharashtra and Gujarat**, our two most highly urbanised states, account for about 30% of the country's fire accident deaths.
3. **The India Risk Surveys 2018** has placed **India in 3rd position in fire incidents**. This signifies the grave risks of fire incidents to urban habitats.

#### Challenges in preventing fire outbreaks:

1. **Absence of uniform safety legislation:** Fire services are managed by states, leading to inconsistencies in safety standards due to resource constraints at the municipal level.
2. **National Building Code of India, 2016:** While it includes provisions for '**Fire and Life Safety**' audits, these are only **recommendatory**, not mandatory.
3. **Inadequate Fire Services:** There is a significant shortfall in the number of fire stations and personnel compared to what is required, as revealed by the Central Government's reply in Parliament in 2019.
4. **Poor Compliance:** Examples include a hospital in Delhi operating with an inadequate and expired license, lacking fire extinguishers and emergency doors, and an indoor gaming centre in Rajkot lacking a no-objection certificate and conducting welding work during business hours.
5. **Suboptimal government oversight:** Weak in-

spections and rare follow-up actions after major disasters indicate critical shortcomings in oversight and regulatory enforcement.

**Causes for increased vulnerability of Urban areas to Fire Hazards:**

1. **Rapid and unplanned urbanisation** is becoming predominant, especially in Asia and Africa. This, in turn, increases the **vulnerabilities to multiple hazards** including a fire in especially urban agglomerations such as Mumbai, Delhi, Bengaluru, etc.
2. **The high density of settlements** resulted in narrow and constricted circulation spaces.
3. **Limited access to structures** by firefighting equipment because of flouting of planning regulations; Narrow lanes that **hinder quick response** to fires.
4. **Settlements are made up of flammable materials**; a small fire can **become a conflagration** quickly.
5. **High use of electrical equipment and machinery, faulty electric connections and gadget failures**; Unsafe electric practices by residents.
  - a. Past incidents show that most fire accidents take place majorly due to **electrical short circuits and gas cylinder/stove bursts, human negligence, and ill-formed habits**.

**Notable incidents:**

- **Uphaar cinema blaze** in Delhi that killed 59 people in 1997.
- **Kumbakonam school fire** in Tamil Nadu in 2004 in which 94 children died.
- **The Mumbai Kamala Mills fire** in 2017 killed 14 people and injured many.
- **Fire in a Surat coaching centre** in 2019 resulted in the death of more than 20 young people.
- **Ahmednagar Hospital fire tragedy** where 11 COVID-19 patients lost their lives.

**Aspect of fire safety standards in India:**

Aspect	Details
Fire Service Authority	State subject and included in the <b>XII schedule of the Constitution</b>
Establishment of Fire Services	Many states have established <b>Fire &amp; Emergency Services through statutory Acts</b>
Legislation Basis	Acts based on the <b>Model Fire Service Bill</b> circulated by the Ministry of Home Affairs
Responsibility at the Local Level	<b>Municipal corporations and local bodies</b> in some states are responsible for fire services
Fire Safety Norms	<b>National Building Code -2016</b> serves as the basis for fire safety norms in India
Central Level Mechanisms	Director-General of Civil Defense, Home Guards, & Fire Services under the Ministry of Home Affairs oversees fire management. Assisted by the Fire Adviser for deliberations. Standing Fire Advisory Committee provides inputs for improvement
Training and Education	<b>National Fire Service College, Nagpur</b> provides training and education for fire service personnel

**Initiatives Taken for Fire Safety:**

1. **Scheme for Expansion and Modernization of Fire Services in the States:** Launched by the Centre in 2023, aimed at strengthening fire services in the States until 2025-26.
2. **Model Bill to Provide for the Maintenance of Fire and Emergency Service for the State:** Circulated by the Centre to facilitate the maintenance of fire and emergency services at the state level.
3. **National Disaster Management Authority (NDMA) guidelines:** NDMA has released guidelines covering scaling, types of equipment, and training for fire services across the country.

**Roles and responsibilities of the government for risk mitigation:**

- **Policy-driven planning:**
  - A policy should be written to **address cities** that are expected to **grow significantly** in size in the near future.
  - Through this, cities should be required to **reserve physical spaces for fire stations**, fire hydrants, and fire lanes/parking spots, thus **ensuring ready access**.

- **Increasing the investment:**
    - Growing high-rises in urban areas necessitate the **procurement of specialised equipment** for fire-fighting.
    - There must be continued **investments in equipment and infrastructure** to guarantee the safety of the citizens.
      - Sadly, the fire and disaster management budget for Mumbai has declined by 38% over 3 years to 2020.
  - **Prevention measures:**
    - **Fire drills and evacuation drills** should be conducted regularly in consultation with the city Fire Brigades and a log of the same shall be maintained.
    - Also, in Mumbai, for instance, often, buildings or shops that hold less than 50 people do not have fire code restrictions.
      - Such loopholes should be closed, ensuring **clear guidelines for all kinds of establishments**. Also, they should be **actively enforced** by the city governments.
  - **Capacity building:**
    - There is a considerable **gap in the operational capabilities** of fire and emergency services in Indian cities.
    - **Measures needed** in this regard include -
      - Installation of firefighting systems
      - Restriction of cooking to designated spaces
      - The use of safer cooking energy sources and lighting means
      - Improvements in vehicle access routes to neighbourhoods
  - **Focusing on residential buildings:**
    - Most fire-related fatalities happen in residential buildings; **58% of the fatalities in 2019**. In contrast, around 2% of fatalities were in factories.
    - So, the focus has to be on residential buildings in order **to cut down on both accidents and related fatalities**.
    - Here, proper implementation of the [National Building Code \(NBC\) of 2016](#) that sets out guidelines has to be ensured. E.g.,
      - i. Carrying out a **fire safety audit** in all buildings over 15 metres once in 2 years by an independent entity.
      - ii. Constructing the building with **fire-resistant/retardant materials** and installing **smoke detection systems and fire alarms**.
      - iii. **Fire compartmentalisation** (area/floor wise) should be made mandatory to restrict the spread of fire through horizontal and vertical spaces.
    - iv. Once electrical and fire installations are in place, they should be **certified by authorised persons** and agencies.
  - **Ensuring easy access:**
    - There have to be **dedicated access lanes** for the quick movement of **emergency vehicles**.
    - Under the Smart Cities Mission, '**smart control rooms**' should be able to guide emergency vehicles through the shortest route and **enable coordination** among various departments.
- Measures needed at the civilian level:**
- **Awareness generation:**
    - In **schools, the curriculum** should have a chapter on fire safety.
      - **Regular drills** should be conducted so that children are prepared to handle such incidents.
    - **Communities** managing housing and commercial premises need to **regularly organise awareness programmes** with assistance from authorised persons and agencies.
      - These need to be not only on fire safety but also on other disasters such as earthquakes and floods.
  - **Community-based fire risk management:**
    - Local communities should be actively engaged in the **identification, analysis, treatment, monitoring, and evaluation of fire risks** to reduce their vulnerabilities and enhance their capacity.
  - **Capacity building at the root level:**
    - **Efficient communication links** should be established between civilian groups in vulnerable areas and city fire brigades.
    - The social and **informal networks within the settlement** should be capitalised for rescue and assistance during fire outbreaks.
      - For this to work effectively, the **fire hydrants** existing within the settlement's boundaries should be **kept in working condition** through **regular monitoring, and necessary replacements** will have to be made.

**Conclusion**

India and all countries around the world must see the **importance of fire safety when building and extending cities**. It is high time safety is taken seriously and **violators are brought to book**. An **integrated mechanism** involving **government players and the community** could go a long way in reducing risks and bringing down fatalities.

**Insta Links:**

- [FIRE SAFETY IN INDIA](#)

**3. RISING HEAT STRESS AND ITS MITIGATION**

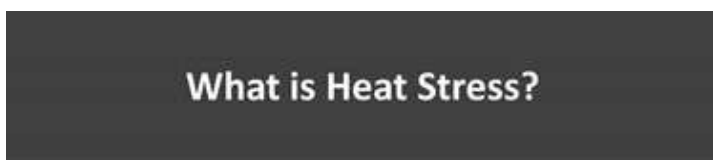
**Context:**

Rising temperatures in urban India are not solely due to climate change but also a result of increased concretization and urban sprawl, **contributing to severe heat stress**.

India’s major cities, including **Delhi, Mumbai, Chennai, Bengaluru, Kolkata, and Hyderabad**, are facing worsening **heat stress** due to rising relative humidity over the past two decades and increasing **Urban Heat Island Effect**, according to a study by the **Centre for Science and Environment**.

**What is Heat stress?**

It occurs when the **body cannot effectively release excess heat**, leading to a rise in core temperature and increased heart rate. It’s a **physiological strain** experienced in high-temperature environments. Causes include high ambient temperatures, **humidity, physical exertion, inadequate hydration**, and poor ventilation. Symptoms include difficulty concentrating, irritability, sickness, and loss of thirst, progressing to fainting and potentially death if not cooled down.



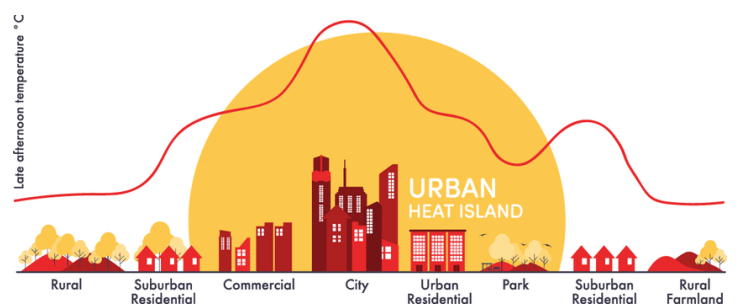
**What other factors exacerbate Heat Stress?**

In major Indian cities, heat stress is exacerbated by factors such as **air and land surface temperature, relative humidity, and rapid urbanization** with increased concretization. Climate change has worsened heat waves by **raising temperatures and humidity levels**. Additionally, changes in land use and urban sprawl contribute to the **“urban heat island effect,”** trapping heat in city centres. This poses a significant risk to vulnerable groups like the elderly, infants, pregnant women, slum dwellers, and outdoor workers.

According to the World Health Organisation **heat stress linked to climate change** is likely to cause **38,000 extra deaths a year** worldwide between 2030 and 2050.

**What is the Urban Heat Island Effect?**

The Urban Heat Island (UHI) effect describes **urban areas experiencing higher temperatures than rural surroundings** due to human activities and urban characteristics. Causes include surface materials like asphalt and concrete, heat from industrial processes and vehicles, reduced vegetation, building density, and waste heat.



**Impact of heat stress/heat waves:**

- **On Human Health:**
  1. **Heat-related illnesses:** Heat waves can cause heat exhaustion, heat cramps, and heatstroke, which can lead to dehydration, fatigue, and even death.
  2. **Exacerbation of existing conditions:** People with existing health conditions such as respiratory diseases and cardiovascular diseases are more vulnerable during heat waves.
  3. **Mental health:** Heat waves can also

impact mental health, causing stress, anxiety, and other mental health issues.

4. **Affected Regions:** Southern Asia and western Africa are expected to be the hardest hit, with approximately 5% of working hours lost by 2030. India could **lose 5.8% of its working hours**, affecting 34 million jobs, mainly in agriculture and construction.
  5. **Social Consequences:** Heat stress may deepen inequality between low and high-income countries, worsen conditions for vulnerable workers, and lead to increased migration as people seek better opportunities, impacting both men and women in agriculture and construction.
- **On Environment:**
    1. **Water resources:** Heat waves can lead to droughts, reducing the availability of water resources for agriculture and domestic use.
    2. **Wildlife:** Heat waves can impact wildlife, leading to habitat loss and increased mortality rates.
    3. **Air quality:** Heat waves can worsen air quality, leading to respiratory issues and other health problems.
  - **On Economy:**
    1. **Economic Loss:** Heat stress may cost the global economy **\$2.4 trillion** annually, with a projected 2% loss in total working hours worldwide.
    2. **Affected Sectors:** Agriculture, particularly for women, and construction will suffer the most, with an estimated 60% and 19% loss in working hours by 2030, respectively.
    3. **Agriculture:** Heat waves can impact crop yields and agricultural productivity, leading to economic losses for farmers and the agricultural industry.
    4. **Energy consumption:** Heat waves can lead to increased energy consumption as people use more air conditioning and other cooling systems.
    5. **Tourism:** Heat waves can impact the tourism industry, leading to decreased revenues for businesses that rely on tourism.

#### Measures Already Taken:

1. **National Level:** The Indian government has launched a **National Action Plan on Climate Change**, which includes measures to address heat waves and other climate-related issues.
  - a. **National Action Plan for Climate Change (NAPCC):** Includes 8 national

missions focusing on various aspects of climate change mitigation and adaptation.

- b. **India Cooling Action Plan (ICAP):** Aims to reduce cooling demand by 20-25% and refrigeration demand by 25-30% by 2037.
  - c. **NDMA Guidelines:** Comprehensive guidelines issued in 2016 by the National Disaster Management Authority for mitigating the impact of heat-waves.
2. **State and City Level:** Many state governments and city administrations have taken measures such as opening cooling shelters, distributing free drinking water, and implementing heat wave warning systems.
  3. **Civil Society Organizations (CSOs):** Several CSOs are working to raise awareness about the impacts of heat waves and provide support to vulnerable communities.

#### Measures that Need to be Taken:

1. **Heatwave preparedness:** There is a need for increased heat-wave preparedness, including the development of early warning systems and emergency response plans. **E.g. Heatwave early warning systems**
2. **Urban planning:** Urban planning should focus on designing cities that are more resilient to heat waves, such as increasing green cover and promoting the use of reflective materials. e.g. urban heat wave preparedness plans
3. **Sustainable agriculture:** There is a need for sustainable agricultural practices that are more resilient to heat waves, such as crop diversification and better water management.
4. **Community engagement:** There is a need for community engagement and awareness-raising activities to ensure that vulnerable populations are aware of the risks of heat waves and can take necessary precautions.
5. **Green infrastructure:** India can promote the use of green infrastructure, such as **green roofs and urban green spaces, green transport** which can help to reduce the heat island effect in cities and lower temperatures.
6. **Climate resilient infrastructure:** E.g. heat-resistant buildings and water conservation measures
7. **Policies and Guidelines:** Develop weather variability and urban heat management policies.
8. **Public Awareness:** Educate people about heat-wave risks and reducing carbon footprint.
9. **Agricultural Adaptation:** Support farmers with resilient farming practices
10. **Disaster Management:** Develop emergency response plans and cool shelters.
11. **Short-term Measures:** Establish an early warning system and integrate it with public health services.
12. **Long-term Measures:** Implement structural in-

frastructure changes for heat adaptation.

**Conclusion:**

Heat waves are a serious threat to human health, the environment, and the economy. While some measures have already been taken to mitigate their impacts, more needs to be done to ensure that vulnerable populations are protected and that the country is better prepared for future heat waves.

**What is a Heatwave?**

The IMD says a heatwave is considered when the maximum temperature of a station touches at least **40 degrees Celsius or more for plains, 37 degrees Celsius** or more for coastal regions and at least 30 degrees Celsius or more for hilly regions. A 'Heatwave' is declared when the departure from normal temperature is by **4.5 to 6.4** degrees Celsius and a 'severe heatwave' is when the departure from normal is more than **6.4 degrees Celsius**.

Heat wave Scenario	40°C	30°C
Maximum Temperature	Plains	Hills
<b>Heat wave conditions prevail when...</b>	<b>Severe heat wave conditions prevail when....</b>	
Normal maximum temperature	Normal maximum temperature	Normal maximum temperature
Deviation from normal	Deviation from normal	Deviation from normal
Above	Above	Above
40°C	40°C	40°C
4-5°C or more	6°C or more	7°C or more
At or below	At or below	At or below
40°C	40°C	40°C
5-6°C or more	7°C or more	

**Insta Links:**

- [Heat stroke](#)

**Mains Links:**

Q: Bring out the causes for the formation of heat islands in the urban habitat of the world.

**CONTENT FOR MAINS ENRICHMENT**

Context	Usage in Answers
<p><b>1. INDIA'S 'ALL WE IMAGINE AS LIGHT' WINS GRAND PRIX</b></p>	<p><b>Context:</b> Indian director <u>Payal Kapadia's debut film "All We Imagine As Light"</u> won the Grand Prix prize.</p> <p><u>All We Imagine As Light is an Indo-French production</u> about a nurse, Prabha, and her friend, Anu, who embark on a transformative road trip. Kapadia's previous documentary, <u>A Night of Knowing Nothing</u>, won the Golden Eye award at Cannes.</p> <p><b>What is the Cannes Film Festival?</b> The Cannes Film Festival is a <u>prestigious annual event held in Cannes, France</u>, showcasing international films and attracting global attention for its film premieres, red-carpet events, and exclusive industry gatherings. It <u>began in 1946</u> and is renowned for awarding <u>the prestigious Palme d'Or</u> to outstanding films.</p> <p><b>Festival Highlights</b></p> <ol style="list-style-type: none"> <li>1. <u>Features film premieres</u>, screenings, and exclusive industry events.</li> <li>2. <u>Red carpet events</u> attract global media attention.</li> <li>3. <u>Notable for awarding the prestigious Palme d'Or</u>, with films like "Taxi Driver," "Pulp Fiction," and "Parasite" among winners.</li> <li>4. The only Indian film to win the Palme d'Or was <u>"Neecha Nagar" in 1946</u>.</li> </ol>

<p><b>2. ANSHU JAMSENPA</b></p>	<p><b>Context:</b> Anshu Jamsenpa, the <b>first woman from Arunachal Pradesh's Nyishi tribe</b>, has <b>scaled Mount Everest</b>.</p> <p><b>Values are shown by Her:</b>          Anshu Jamsenpa embodies <b>perseverance, resilience, and dedication</b>. She promotes the importance of hard work and <b>determination</b> in achieving one's goals. Her journey emphasizes the value of <b>courage and overcoming challenges</b>, serving as an inspiration for <b>aspiring mountaineers and adventurers</b>. Anshu's success also highlights the significance of <b>cultural pride</b> and the <b>empowerment of women</b> in traditionally male-dominated fields.</p> <p><b>About the Nyishi tribe, previously known as the Daffla</b>          It is the <b>largest ethnic group in Arunachal Pradesh</b>. They consider themselves descendants of Abo Tani, believed to be the first human, thus <b>aligning with the Tani Group of Tribes</b>, which includes the <b>Adi, Gallo, and Apatani</b>. Their society <b>lacks a caste system</b> and rigid class distinctions. <b>Polygyny</b> is practised, and their major festival is Longte.</p>
<p><b>3. MAJOR RADHIKA SEN</b></p>	<p><b>Context:</b> Major Radhika Sen, an <b>Indian military peacekeeper</b> serving with the United Nations in the Democratic Republic of the Congo, will receive the <b>2023 United Nations Military Gender Advocate of the Year Award</b>.</p> <p><b>Her Contributions:</b>          She led efforts to engage with <b>conflict-affected communities</b>, particularly women and girls, in North Kivu. Her dedication and leadership exemplify the <b>principles of UN Security Council resolution 1325 on women, peace, and security</b>. Major Sen facilitated community alert networks, provided education and vocational training, and advocated for women's rights. She becomes the second Indian peacekeeper to receive this prestigious award.</p> <p><b>About the Award:</b>  <b>The UN Military Gender Advocate of the Year Award</b>, established by the Office of Military Affairs in the Department for Peace Operations, honours a military peacekeeper who has effectively <b>integrated a gender perspective into peacekeeping activities</b>. Awardees are selected from nominees recommended by Force Commanders and Heads of Mission across all peace operations. The award acknowledges individuals' commitment to promoting the principles of <b>UN Security Council Resolution 1325 on Women, Peace, and Security</b>.</p>

## FACTS FOR PRELIMS

### GS-1

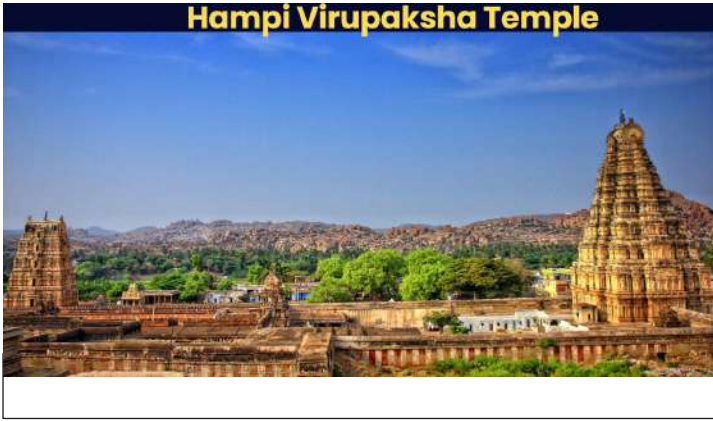
#### Art & Culture

### 1. HAMPPI'S VIRUPAKSHA TEMPLE

**Context:** A portion of **Hampi's Virupaksha temple collapsed** due to heavy rains.

**About the Temple:**

The **Virupaksha Temple in Hampi**, dedicated to **Lord Virupaksha (a form of Shiva)**, is a **UNESCO World Heritage Site** in Karnataka. Constructed by **Lakkan Dandesha** under **Prauda Deva Raya** of the Vijayanagara Empire, it's one of India's oldest temples, dating back to the **7th century**. The temple features **intricate Dravidian architecture** with a nine-tiered entrance gate and mathematical patterns. It has survived through the **Chalukyan and Hoysala periods**, despite damage during Mughal rule. Notable festivals include the marriage of Virupaksha and Pampa in December and the chariot festival in February.



## 2. ANCIENT ROCK PAINTINGS

### Context:

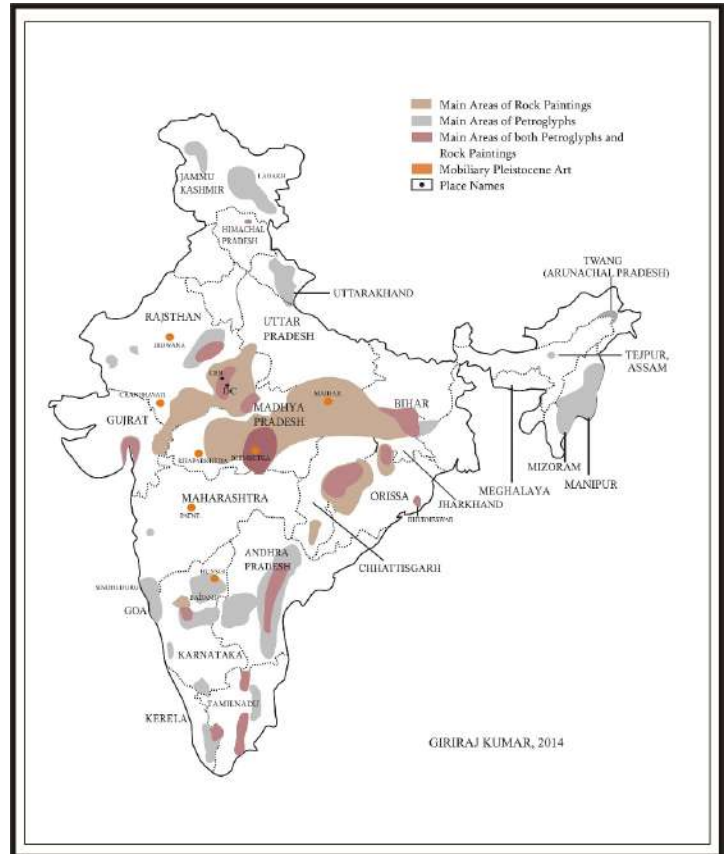
In Mauji village, Goa, rock carvings dating back to the Neolithic age were confirmed by the Archaeological Survey of India (ASI).

### More about the News:

Rock carvings, including depictions **of zebus, bulls, and antelopes** alongside footprints and cupules, were discovered on a metabasalt rock along the dry riverbed of the Zarme River.

These carvings represent prehistoric art in India, spanning various periods:

- Upper Palaeolithic Period:** Earliest paintings, such as linear representations of animals like bison, elephants, and tigers, **alongside stick-like human figures**, found at sites like **Bhimbetka and Jwalapuram**.
- Mesolithic Period:** Predominantly depicting human scenes of hunting and community dances, with animals painted in a naturalistic style and humans in a stylistic manner. Major sites include **Pachmarhi and Adamgarh Hills**.
- Neolithic-Chalcolithic Period:** Characterized by **pottery and metal tools** depicted in rock paintings, with predominant colours of white and red possibly made from grinding haematite and limestone. Men are portrayed as **adventurous, and animals appear youthful and majestic**. Notable sites include the **Chambal region and Daimabad in Maharashtra**.



## 3. BELA BLOCK PRINTING

### Context:

Bela block printing in Kutch is a **lesser-known traditional craft** that has seen a significant decline over the years

### About the Printing:

Bela block printing is a traditional **textile art known for its bold designs, striking colour combinations, and graphic motifs** on textured fabrics. Kachchh in Gujarat is a significant producer of this style, with the **Khatri community** renowned for practising the craft.



## History

### 4. VIVEKANANDA ROCK MEMORIAL

#### Context:

PM will meditate at Tamil Nadu's Vivekananda Rock Memorial to mark the end of the Lok Sabha campaign.

#### About Vivekananda Rock Memorial:

1. Located on a **small island off Kanyakumari, Tamil Nadu, 500 meters** from Vavathurai.
2. **Surrounded by the Laccadive Sea** where the Bay of Bengal, Indian Ocean, and Arabian Sea meet.
3. **Built in 1970 to honour Swami Vivekananda**, who attained enlightenment on the rock.
4. Includes the **'Shripada Mandapam' and 'Vivekananda Mandapam'**.
5. Features a **life-sized bronze statue of Swami Vivekananda**.
6. Funded by both State and Central Governments.

#### Who was Swami Vivekananda?

**Swami Vivekananda (1863-1902)**, born Narendranath Datta, was a Hindu monk and a celebrated spiritual leader. A disciple of **Sri Ramakrishna**, he was known for his teachings on **Vedanta, the four yogas**, and the harmony of religions. He emphasized combining **Indian spirituality with Western progress** and believed in self-purification through helping others. He represented **Hinduism at the 1893 World's Parliament of Religions** in Chicago and founded the Ramakrishna Order in 1897.

### 5. AHILYA BAI HOLKAR

#### Context:

31<sup>st</sup> May 2024 marks the **300th birth anniversary of Ahilya Bai Holkar**, a visionary Maratha queen and exceptional administrator. Often overlooked in history, she was more than the wife of Khande Rao Holkar—she was a leader who **brought 30 years of peace and financial stability to her kingdom**.

Her 30-year reign brought peace and stability, marked by significant contributions in various domains:

1. **Leadership:** Defying patriarchal norms, she appointed Tukoji Holkar as army commander and led her kingdom effectively.
2. **Spiritual and Architectural Contributions:** Renovated jyotirlingas across India and secured temple idols.
3. **Cultural Unity:** United subjects against the Mughal rule, fostering a shared cultural identity.
4. **Economic Development:** Promoted Maheshwari sari weaving, empowering women and boosting

the economy.

5. **Environmental Protection:** Developed Indore, conserved forests, and enhanced trade.
6. **Inclusive Governance:** Created a model of Ram Rajya with social harmony and inclusivity, uplifting Bhil and Gond castes.

#### More about Ahilyabai Holkar (1725-1795):

**She was a prominent ruler of the Holkar dynasty** in the Maratha Empire. Married to Khanderao Holkar at age 8, she **became a widow in 1754** when he died in battle. Renowned for her philanthropy, **she built forts, roads, temples, ghats, wells, tanks, and rest houses** across India. Ahilyabai welcomed notable figures like poet **Moropant and scholar Khushali Ram** to her court. British **historian John Keay** called her **'The Philosopher Queen'** for her insightful political observations.

## Geography

### 6. HEAT INDEX

#### Context:

The mercury in Delhi **reached 41°C recently**, but with high humidity, the heat index soared to a blistering 50°C.

IMD now **measures the heat index, factoring in both temperature and humidity**, providing a more accurate sense of discomfort. Expectations are for the index to hit 54-56°C in the next 48 hours.

#### Heat Index (HI):

Launched by the India Meteorological Department (IMD) on an **experimental basis**. Also known as **Apparent Temperature**, it reflects what the temperature feels like to the human body when relative humidity is combined with the air temperature. It provides information **about the impact of humidity on high temperatures** and serves as an indicator of human discomfort.

#### Color codes used for HI:

1. **Green:** HI less than 35°C
2. **Yellow:** HI between 36-45°C
3. **Orange:** HI between 46-55°C
4. **Red:** HI greater than 55°C

### 7. VOLCANOES ON VENUS: FRESH LAVA FLOWS DETECTED

#### Context:

Radar footage has revealed **fresh lava flows on Venus**, indicating active volcanoes.

Researchers from Italy’s International Research School of Planetary Sciences compared recent images with those **from the 1990-1992 Magellan spacecraft**, confirming new rock formations. These findings suggest **Venus is more volcanic than previously thought**, with active flows identified in the regions of **Sif Mons and Niobe Planitia**.

**About Magellan Mission**

Launched by **NASA in 1989**, the **Magellan mission was the first spacecraft** to image the entire surface of Venus. It used **Synthetic Aperture Radar (SAR)** to create high-resolution maps, revealing signs of volcanism, tectonic activity, and turbulent surface winds on Venus.

**GS-2**

Salient features of Indian Constitution & Functioning

**8. SPECIAL CATEGORIES OF VOTERS**

Type of Voting	Description	Eligible Voters
<b>In-Person Voting</b>	Voters cast their ballots at designated polling stations on the specified election day using EVMs.	All registered voters.
<b>Postal Ballots</b>	Allows remote voting outside the polling station, without EVMs, before the designated poll date. <b>Postal Voting Centers (PVC):</b> Centers where essential service absentee voters can obtain and cast their postal ballots before the election day.	Special voters, Essential service workers (railways, telecom, health, media, etc.), voters on election duty, detainees, and certain absentee voters.
<b>Electronically Transmitted Postal Ballot System (ETPBS)</b>	Encrypted ballots are sent electronically to service voters, who return completed ballots by post.	Service voters (armed forces, paramilitary, government employees abroad).
<b>Home Voting</b>	Election teams visit homes of <b>85+ aged voters, PwD, and COVID-19</b> -affected voters to facilitate postal voting.	Voters aged 85+, persons with disabilities, COVID-19 affected voters.
<b>Election Duty Certificate (EDC)</b>	Allows election duty personnel to vote at their duty polling station within the same constituency.	Election duty personnel.
<b>Proxy Voting</b>	Service voters appoint a proxy to vote on their behalf at their designated polling station.	Armed and paramilitary forces (Classified Service Voters).
<b>Assisted Voting</b>	Allows a companion to assist a blind or disabled voter in casting their vote.	Voters with blindness or other disabilities.

**9. ARTICLE 329 (B)**

**Context:**

The Supreme Court adjourned an application by the **Association for Democratic Reforms (ADR) seeking directions to the Election Commission (EC)** regarding the publication of voter turnout figures, citing **Article 329(b) of the Constitution**, which prohibits judicial intervention during elections.

### About Article 329(b):

1. Article 329(b) of the Constitution, found in **Part XV alongside articles 324-329**, governs electoral matters.
2. **Article 324 grants** the Election Commission powers to oversee elections, while **Article 329 addresses** the judiciary's role in electoral affairs.
3. **Article 329(a)** prohibits the judiciary from challenging laws regarding electoral district boundaries or seat allocation.
4. **Article 329(b)**, as amended by the Constitution (19th Amendment) Act, 1966, mandates that elections can only be questioned through an election petition presented according to laws made by the appropriate Legislature.
5. **The Representation of the People Act, 1951**, further establishes the authority of high courts to hear and decide on election petitions, with Supreme Court review possible.
6. In past rulings, the Supreme Court clarified that **"election" in Article 329(b)** encompasses the entire electoral process, from notification to result declaration, and barred judicial interference at intermediary stages.

## 10. ELECTION MANIFESTO

### Context:

The Supreme Court ruled that **promises in a political party's manifesto** benefiting the public financially are not corrupt practices. This decision came from an appeal challenging the **election of B.Z. Zameer Ahmed Khan**, a Congress candidate, in the 2023 Karnataka Assembly election.

The petitioner argued that **such promises were corrupt, but the court found this view too "far-fetched,"** stating that policy commitments leading to financial benefits for the public are legitimate and not corrupt practices.

### What is an Election Manifesto?

**An election manifesto is a published declaration** of a political party's intentions, views, policies, and programs, often released before elections to inform voters.

### What are Freebies?

It refers to **goods and services like bicycles, smartphones, and bill waivers** offered by parties. Unlike subsidies, which are essential for governance, freebies aim to attract voters.

The Supreme Court, in the **2013 S Subramaniam Balaji vs Government of Tamil Nadu case**, noted that **unrealistic poll promises and freebies disrupt** fair elections but do not constitute corrupt practices under the law.

### Government Policies

## 11. PRAGATI-2024

### Context:

The **Central Council for Research in Ayurvedic Sciences (CCRAS)** launched "PRAGATI-2024" (Pharma Research in AyurGyan And Techno Innovation), fostering collaborative research in **Ayurveda**.

The CCRAS is an **autonomous body of the Ministry of AYUSH** (Ayurveda, Yoga & Naturopathy, Unani, Siddha and Homeopathy). It is an apex body in India for the formulation, coordination, development and promotion of research on scientific lines in the Ayurveda and Sowa-Rigpa systems of medicine.

### International Relations

## 12. MANAMA DECLARATION

### Context:

Recently, the Arab League called for **UN peacekeeping forces in the Palestinian territories** during a summit in Manama, Bahrain.

The "Manama Declaration" (Manama is the capital and largest city of **Bahrain**) urged **international protection and UN peacekeeping** forces in the occupied Palestinian territories until a **two-state solution** is achieved. It also demanded an **immediate ceasefire in Gaza** and an end to forced displacement in the region.

### About the Arab League:

**It is a regional organization of Arab states in the Middle East and parts of Africa.** Formed in **Cairo on March 22, 1945**, it aims to **promote Arab interests** and coordinate **political, cultural, economic, and social programs** among its members. The League also seeks to **settle disputes among member states** and provide mutual military support. Its headquarters is in Cairo, Egypt, and its official language is Arabic. The League has **22 members**, with founding members including Egypt, Syria, and Iraq. Four nations have observer status: **Brazil, Eritrea, India, and Venezuela.**

## 13. SMALL ISLAND DEVELOPING STATES (SIDS4)

**Context:** At the Fourth International Conference on Small Island Developing States (SIDS4) in St. John's, Antigua and Barbuda, the Global Environment Facility (GEF) emphasizes **sustainable development for SIDS.**

The GEF, alongside partners, has **provided \$1.9 billion in grant finance to SIDS**, supporting green and blue economy approaches, biodiversity conservation, climate resilience, renewable energy, and more. The ongoing **GEF-8 funding cycle (2022 - 2026)** prioritizes the needs of SIDS and Least Developed Countries (LDCs).

### What are Small Island Developing States (SIDS)?

**They are a group of countries characterized by their small land area**, limited resources, and vulnerability to environmental and economic challenges. They are typically located in the Caribbean, Pacific, and Indian Ocean regions. SIDS face unique developmental issues, including climate change impacts, natural disasters, and limited economic diversification opportunities.

#### About GEF:

**The Global Environment Facility (GEF) was established in 1992** during the Rio Earth Summit. It comprises funds dedicated to addressing **biodiversity loss, climate change, pollution, and land and ocean health** issues. Governed by an Assembly, Council, Secretariat, and various agencies, it supports **five major international conventions**, including the Minamata Convention on Mercury and the UN Framework Convention on Climate Change. **With 184 member countries, including India**, its secretariat is in Washington, D.C., and the **World Bank serves as its trustee**, managing the GEF Trust Fund.

## 14. COLOMBO PROCESS

#### Context:

India has assumed the chair of the Colombo Process for 2024-26, the first time since the forum's inception in 2003.

#### About Colombo Process

The Colombo Process is a **Regional Consultative Process** focused on managing overseas employment and contractual labour. It comprises **12 Asian member states**, including Bangladesh and Sri Lanka, with India as a founding member. Priority areas include **skills and qualification recognition** and fostering ethical recruitment practices. **The UN's International Organization for Migration** provides technical and administrative support.

**About the IOM:** Established in 1951 as part of the UN System, headquartered in Geneva, Switzerland. It comprises 175 member states and aims to address displacement issues and facilitate pathways for regular migration. It leads initiatives like the Global Compact For Migration.

## 15. UN GLOBAL SUPPLY CHAIN FORUM

#### Context:

The UN Global Supply Chain Forum emphasizes the need for resilience in supply chains amid disruptions in world trade, calling for efforts to decarbonize global shipping and promote investments in digital solutions

#### What is a supply chain?

A supply chain is a **network of organizations, resources, activities, and technology** involved in the creation and distribution of goods or services from the supplier to the customer. It encompasses the entire process from raw material acquisition to production, distribution, and delivery to the end consumer.

**The UN-GSCF, co-hosted by UN Trade and Development and the Government** of Barbados, aimed to tackle growing disruptions in global supply chains. Supply chain resilience, vital for minimizing disruption effects on revenue, costs, and customers, was a key focus.

Initiatives like the **Global Supply Chain Resilience Initiative** and the **Indo-Pacific Economic Framework for Prosperity**, in which India is a signatory, aim to enhance supply chain resilience. India's domestic efforts include the **PM Gati Shakti National Master Plan** and the **National Logistics Policy**. Initiatives like **Atmanirbhar Bharat** and **PLI schemes** aim to boost manufacturing, complemented by a liberalized FDI policy.

### GS-3

#### Indian Economy

## 16. INDIA'S TRADE DEFICIT

#### Context:

According to recent official data, India recorded a **trade deficit with nine of its top 10 trading partners**, including China, Russia, Singapore, and Korea, in 2023-24.

#### What is Trade Deficit?

A trade deficit occurs when a **country's imports exceed its exports**, meaning it buys more goods and services from other countries than it sells to them. This results in a negative balance of trade, indicating that more money is flowing out of the country to pay for imports than is coming in from exports.

India's total trade deficit narrowed to about **\$238 billion in 2023-24, down from \$265 billion** the previous year. The trade deficit widened with **China, Russia, Korea,**

and Hong Kong but narrowed with the **UAE, Saudi Arabia, Russia, Indonesia, and Iraq.**



China became **India's largest trading partner with over \$118 billion** in bilateral trade, surpassing the U.S., which had over **\$118 billion in trade**. India maintains free trade agreements with **Singapore, the UAE, Korea, and Indonesia**. Significant trade surpluses were recorded with the U.S. (of over \$36 billion), the U.K., Belgium, Italy, France, and Bangladesh.

## 17. WIPO TREATY

### Context:

WIPO member states approved a **historic new Treaty on intellectual property (IP), genetic resources (GR), and traditional knowledge (TK)**, following decades of negotiations.

### Need for the Treaty:

- Addressing Biopiracy:** Ensures traditional knowledge is not exploited without permission or compensation.
- Utilization:** Genetic resources and traditional knowledge are often used in patented inventions and scientific research.

### About the Treaty:

- Inclusive:** It marks the first WIPO Treaty to include provisions for Indigenous Peoples and local communities.
- New Disclosure Requirement:** Patent applicants must disclose the country of origin or source of GR and the Indigenous Peoples or local community that provided the associated TK.
- Membership:** Any WIPO member state can join.
- Non-Retroactivity:** The treaty does not apply to patents filed before its entry into force.

### About WIPO:

**The World Intellectual Property Organization (WIPO)** was established in 1967 through the **WIPO Convention**, transforming the earlier **United International Bureau for the Protection of Intellectual Property (BIPRI)**

into WIPO. As a specialized agency of the United Nations, WIPO serves as a **global forum for intellectual property (IP) services**, policy, information, and cooperation. **Headquartered in Geneva**, Switzerland, WIPO boasts a membership of **193 member states**, including India. WIPO administers several key treaties, such as **the Berne Convention, Washington Treaty, Paris Convention, and the Singapore Treaty on the Law of Trademarks**, among others

## 18. SOVEREIGN BOND YIELDS

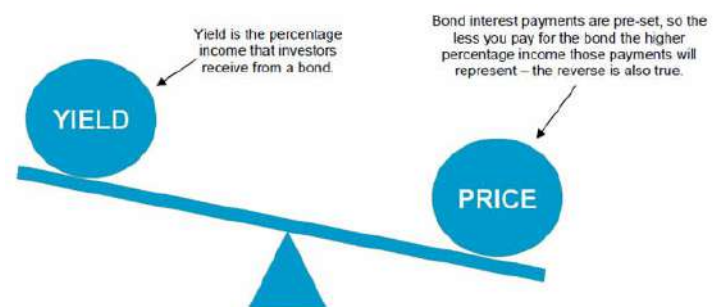
### Context:

Sovereign bond yields fell to near one-year lows following **RBI's record dividend payout to the government**. The **10-year benchmark yield closed at 6.978%**, its lowest since June 6, 2023.

Expectations of **lower government borrowing and improved fiscal deficit** contributed to the decline. Additionally, **easing crude oil prices** and resumption of overseas investment boosted market sentiment.

### What is Bond Yield?

Bond yield represents the **return on capital invested in a particular bond**. It is inversely related to bond price, meaning as the price of a bond increases, its yield decreases, and vice versa. This relationship is crucial in the bond market, as **fluctuations in yield** impact the attractiveness of bonds to investors.



**A decline in government bond yields** has significant implications, as it lowers borrowing costs across the economy, with **sovereign debt yields** serving as benchmarks for determining corporate borrowing rates. The recent decrease in sovereign bond yields can be attributed to the record-high **dividend payout of Rs 2.11 lakh crore by the Reserve Bank of India** to the government, which is expected to bolster the government's financial position.

Additionally, improved market sentiment due to **falling crude oil prices** has spurred buying interest in bonds, further contributing to the decline in yields.

**Sovereign bonds are specific debt instruments** issued

by governments and play a crucial role in financing government expenditures.

**Factors Affecting Sovereign Bond Yield:**

1. **Creditworthiness:** Perceived ability of the issuing country to repay debts.
2. **Country Risk:** External/internal factors affecting stability.
3. **Exchange Rates:** Impact of economic volatility and inflation on bond interest rates.

## 19. ZIMBABWE' ZIG

**Context:**

Zimbabwe has launched its **newest currency, the ZiG**, which is backed by gold and aimed at addressing the country's **long-standing issues with currency instability** and hyperinflation.

The ZiG, introduced on April 5, 2024, co-circulates with other foreign currencies in the economy.

**About Gold-backed currency:**

It has a fixed value directly tied to gold and is convertible into the precious metal. Its money supply is constrained by **available gold reserves**, offering inherent value and potential long-term stability.

In contrast, **fiat currency lacks intrinsic value** and is designated as legal tender by governments. Its value is dictated by supply and demand dynamics and isn't backed by any physical commodity. Fiat currency affords central banks greater control over printing money as needed.

## 20. INITIATIVES LAUNCHED BY RBI

**Context:**

The Reserve Bank of India (RBI) launched three major initiatives.

1. **G-Sec Mobile App:** Enables retail investors to transact in government securities (G-Secs) using smartphones.
2. **PRAVAAH Portal:** A centralized web-based platform for individuals or entities to apply for authorizations, licenses, or regulatory approvals from the RBI, enhancing efficiency in processing applications.
3. **Fintech Repository:** A data storehouse for Indian FinTech firms to help understand the sector better and design appropriate policies. Additionally, the **EmTech Repository for RBI-regulated entities** will track the adoption of emerging technologies like AI and blockchain.

These initiatives aim to improve accessibility, efficiency, and data management in financial and regulatory processes.

## 21. SRO-FT FRAMEWORK

**Context:**

The RBI has introduced a framework **for recognizing Self-Regulatory Organizations (SROs) in the FinTech sector**. After releasing a draft framework in January 2024 and gathering feedback, the final framework has been established.

**About SROs:**

Term	Definition
<b>Definition of FinTech</b>	Entities providing technological solutions for delivering financial products or ensuring regulatory compliance, often in collaboration with traditional financial institutions.
<b>What are SROs?</b>	Self-Regulatory Organization, is an industry-led entity responsible for establishing and enforcing regulatory standards within its sector.
<b>Need of SROs</b>	The Self-Regulatory Organization Framework for FinTech Firms (SRO-FT) <b>ensures adherence to industry standards and best practices</b> while <b>empowering FinTech firms</b> to operate responsibly, even in the absence of formal regulations. Additionally, it fosters collaboration among stakeholders to identify and address challenges, promoting an environment conducive to innovation.

**Key Highlights of SRO-FT**

<b>Domiciled/registered in India</b>	Requirement for SRO-FT to be established and registered within India's jurisdiction.
<b>Not-for-profit entities</b>	Applicants for SRO-FT must be established as organizations operating for purposes other than profit-making.
<b>Shareholding structure</b>	The distribution of ownership in an organization, with specific requirements for <b>diversification to prevent undue influence</b> .
<b>Operational guidelines</b>	Instructions and principles governing the functioning of SRO-FT, including <b>objectives, responsibilities, and oversight mechanisms</b> .
<b>Independence</b>	SRO-FT should <b>be independent of influence</b> and should not set up entities/offices overseas without prior approval of RBI.

<b>Managing 'User Harm'</b>	SRO-FT should put in place systems for <b>managing 'user harm'</b> instances that come to its notice or are referred to by RBI or any other stakeholder. User harm includes fraud, unfair practices, unauthorized transactions, etc.
<b>Members</b>	SRO-FT could have FinTech companies domiciled outside India as members.

## 22. NIFTY EV & NEW AGE AUTOMOTIVE INDEX

### Context:

NSE Indices Limited, a subsidiary of the National Stock Exchange of India, has launched **India's inaugural Electric Vehicle (EV) Index**, named the Nifty EV & New Age Automotive Index.

This **index tracks the performance of companies involved in the EV ecosystem** and advanced automotive technologies. Its inception aligns with the Indian government's push for EV manufacturing and investment attraction, supporting the **Make in India initiative**. The index, established with a **base date of April 2, 2018, and a base value of 1000**, will undergo semi-annual reconstitution and quarterly rebalancing to ensure accuracy and relevance. It **comprises EV manufacturers, automotive technology developers, battery producers, and other relevant entities**. Stocks forming a **part of the Nifty 500** are eligible to be a part of the index

### About NSE:

**National Stock Exchange of India Limited (HQ: Mumbai; founded: 1992)** is one of the leading stock exchanges in India. NSE is under the ownership of various financial institutions such as **banks and insurance companies**.

### Agriculture

## 23. RADIATION PROCESSING

### Context:

The government plans to expand the **radiation processing of onions** to create a buffer stock of 100,000 tonnes this year, aiming to prevent shortages and price rises.

**With output expected to drop by 16%, radiation technology** will be used to increase shelf life, reducing hoarding and price volatility.

### Radiation Processing:

1. **Uses ionizing radiations** like gamma rays, accelerated electrons, and X-rays.

2. **Delayed ripening** extends shelf life by eliminating spoilage microbes.
3. **Cannot eliminate microbial toxins** and pathogen viruses.
4. Causes minimal chemical changes.
5. **Least impact on nutritional value** compared to other methods.

### Regulation:

1. Radiation Processing is mandated by the **Prevention of Food Adulteration (Fifth Amendment) Rules, 1994**.
2. **Requires packages of irradiated foods** to display the green irradiation logo endorsed by Codex Alimentarius Commission and the phrase **'Processed by Irradiation method'**.

### About Onions:

**The onion, an herb in the lily family**, is globally grown for culinary and medicinal purposes. India is the **world's second-largest producer**, with major states including **Maharashtra, Karnataka**, and others. **Maharashtra leads in production** (42%), followed by Madhya Pradesh (15%) in 2021-22.

**Key export destinations** include Bangladesh, Malaysia, UAE, Sri Lanka, and Nepal. Onion **farmers lack government MSP-based support** and depend solely on market forces.

## 24. KENDU LEAVES

### Context:

In Koraput district, Odisha, 4,000 tribal farmers are facing a critical delay as they await approval from the forest department to sell kendu leaves worth Rs 34 lakh.

### About Kendu Leaf:

Kendu leaf, known as the **green gold of Odisha**, is a **nationalized product like bamboo and sal seed**. It is a vital **non-wood forest product**, also referred to as tendu leaf, used for rolling bidis (local cigarettes). Major producing states include Madhya Pradesh, Chhattisgarh, Odisha, Andhra Pradesh, Jharkhand, Gujarat, and Maharashtra, with **Odisha** being the third-largest producer.



## 25. ASTROSAT

### Context:

AstroSat has facilitated the discovery of ‘aperiodic modulation’ in high-energy X-ray photons during an ‘unusual’ outburst phase in a black hole **X-ray binary (BH-XRB) system**

- **BH-XRB system consists of a black hole** and a companion star that is locked in gravitation.

### About AstroSat:

It was launched by ISRO in 2015 via PSLV-C30 into Low Earth Orbit and stands as **India’s premier multi-wavelength** space observatory. Designed to explore **celestial sources across X-ray, optical, and UV spectral bands** simultaneously, it hosts five payloads for comprehensive multi-wavelength observations. Its objectives include unravelling high-energy processes in binary star systems, identifying new transient X-ray sources, and investigating star birth regions, among others

## 26. NEPHROTIC SYNDROME

### Context:

A recent study has unveiled a breakthrough in identifying and tracking renal diseases associated with nephrotic syndrome.

Employing a hybrid methodology, scientists discovered that **anti-nephrin autoantibodies** serve as a reliable **biomarker** for monitoring disease progression, offering the potential for personalized therapeutic strategies. **Biomarkers**, like blood pressure, are used in clinical assessments.

### About Nephrotic syndrome:

It is a kidney disorder characterized **by excessive protein loss from blood into urine**, leading to scarring or damage to the kidney’s filtering units called glomeruli. These small blood vessels filter waste and excess water from the blood, excreting them as urine. Various disorders, including diabetes and lupus, can cause nephrotic syndrome by affecting different parts of the body.

## 27. HEALTH FOR ALL MANDATE OF WHO

### Context:

The World Health Organization (WHO) launched its **inaugural Investment Round to revamp its funding model** in the face of global challenges such as climate change,

pandemics, and geopolitical instability.

### What is Health For All?

The concept of “Health for All” originated from **the Alma-Ata Declaration of 1978** by WHO, emphasizing **Primary Health Care**. The Investment Round, targeting the next four years (2025-2028), aims to raise \$7 billion to bolster countries’ capacity to address health challenges.

The initiative, introduced ahead of the **Seventy-Seventh World Health Assembly**, aims to secure **flexible, predictable, and resilient** funding for WHO’s strategy from 2025 to 2028. **Brazil, France, Germany, Norway, and Qatar** have pledged their support, with **Brazil** set to host a major pledging event in November.

### Funding for WHO:

**WHO’s funding primarily comes from two sources: assessed contributions**, which are dues paid by member countries based on a **percentage of their GDP**, and **voluntary contributions** from members or other partners. These voluntary contributions include core and specified funds. However, challenges persist **as assessed contributions cover less than 20% of the total budget**, and there are instances of funding withdrawal, such as the temporary suspension by the US.

### About WHO:

The World Health Organization (WHO), established in **1948, is the specialized health agency of the United Nations**. Based in Geneva, Switzerland, it **operates with 194 Member States**, 150 country offices, and six regional offices. Working closely with member states, typically through **Ministries of Health**, WHO leads global health initiatives, sets standards, conducts research, and offers technical support. Its responsibilities include **shaping health policy, advocating evidence-based practices**, and monitoring health trends. **World Health Day**, celebrated annually on **April 7th**, marks the organization’s founding date.

## 28. GOLDEN RICE

### Context:

The Philippine Court of Appeals recently **revoked biosafety permits** for the commercial production of **genetically modified golden rice and Bt eggplant**. The court cited the government’s failure to establish **safety monitoring mechanisms**.

### About Golden Rice:

Golden Rice (approved for commercial production in 2021) is **genetically engineered to contain beta carotene**, giving it a yellow-orange colour. Unlike ordinary rice, which **does not have beta carotene** in its grain,

Golden Rice's beta carotene is identical to that found in vegetables and fruits. It does not require special cultivation practices and has the **same yield and taste as regular rice**. This rice is a valuable tool in combating **Vitamin A deficiency**, which is crucial for growth, immune health, and vision.

## 29. ASTRONOMICAL TRANSIENTS (2024 SHAW PRIZE FOR ASTRONOMY)

### Context:

Shrinivas Kulkarni has won the **2024 Shaw Prize for Astronomy** for his studies of astronomical transients.

### His contributions:

Recognized for pioneering research on millisecond pulsars, gamma-ray bursts, supernovae, and other transient astronomical objects. He led the development of the Palomar Transient Factory and Zwicky Transient Facility, transforming our comprehension of the time-variable optical sky.

### About Astronomical Transients

Astronomical transients are celestial objects that undergo rapid changes in brightness, often associated with violent space events. Astronomers study them to understand their origins and mechanisms, providing insights into stable astronomical phenomena.

### Examples:

- Supernovae:** Explosions resulting from large stars exhausting fusionable elements, sometimes outshining entire galaxies due to their intense brightness.
- Active Galactic Nucleus (AGN):** Supermassive black holes at the centres of galaxies actively consume matter, causing fluctuations in brightness.
- Fast Radio Burst (FRB):** Discovered in 2007, emitting energy exceeding ten times that of the sun in milliseconds.

### About the Prize:

Founded by **Mr. Run Run Shaw in 2002**, the Shaw Prize celebrates outstanding achievements in **astronomy, life science and medicine**, and **mathematical sciences**. Each year, the Prize honours individuals who have made significant contributions to their fields, promoting excellence and societal progress.

## 30. CYBERCRIMES FROM SOUTHEAST ASIA

### Context:

Criminals based in Southeast Asia, particularly in **Myanmar, Laos, and Cambodia**, are orchestrating online scams that have caught a significant number of Indians. According to the **Indian Cybercrime Coordination Cen-**

**tre (I4C)**, **46%** of reported frauds from January to April, amounting to a staggering **Rs 1,776 crore in losses**, originated in these countries.

### Types of Crimes:

Types	Description
Trading Scam	Scammers use <b>social media to advertise free trading tips</b> , falsely using well-known stock market experts to lure victims into exclusive groups.
Digital Arrest	Victims receive <b>misleading calls claiming their involvement with illegal packages</b> , with impersonators posing as law enforcement officials demanding money to resolve these fabricated issues.
Investment Scam	Individuals are <b>promised easy money for completing simple online tasks</b> aimed at boosting social media ratings.
Romance/Dating Scam	Scammers create <b>fake online dating profiles</b> to establish romantic relationships, then concoct emergencies that supposedly require financial assistance.

## 31. DAKSHA PROJECT

**Context:** The Daksha project aims to **build two high-energy space telescopes** to study explosive astrophysical sources like **gamma-ray bursts (GRBs)** and electromagnetic counterparts to gravitational wave sources.

Each telescope will have sensors covering **1 keV to > 1 MeV**. With two satellites orbiting opposite sides of Earth, Daksha offers significantly better coverage than existing missions and is expected to discover **thousands of GRBs and dozens of high-energy counterparts** to binary neutron star mergers over a five-year mission.

### Other Gamma Ray Detection Missions:

- Astrosat:** India's multi-wavelength space observatory.
- Fermi Gamma-ray Space Telescope:** NASA's wide-range gamma-ray observatory.
- Swift Observatory:** NASA's mission to study gamma-ray bursts.

## 32. LIGNOSAT

**Context:** Japanese researchers from Kyoto University and Sumitomo Forestry have developed the **world's first**

**wooden satellite, LignoSat.**

This tiny cuboid craft, made from **magnolia wood**, measures 10 centimetres on each side and will be launched on a **SpaceX rocket in September**. The wooden material is expected to burn up **completely upon re-entry**, avoiding the creation of harmful metal particles.

### 33. MANAGED CARE ORGANIZATIONS (MCOS)

**Context:**

Managed care organizations (MCOs) could play a role in India's quest for universal health care, resembling practices in the United States but adapted to local needs

**What are MCOs?**

Managed Care Organizations (MCOs) are entities that **combine insurance and healthcare provision functions under one roof**, emphasizing cost containment, prevention, and early management of health issues.

An example of an MCO is a **health maintenance organization (HMO)**, which originated in the United States and focuses on **providing comprehensive health care services** to its members for a fixed premium. These organizations often have networks of healthcare providers and employ various strategies to control costs while promoting quality care.

**MCOs in the U.S. emerged in response to escalating healthcare costs** in the 1970s. They blend insurance and healthcare provision, focusing on preventative care and cost control with fixed premiums for enrollees.

**Challenges facing MCOs in India** include limited targeting of the urban, wealthier population, lack of standard clinical protocols, and high operational costs. However, opportunities lie in the significant outpatient care market and potential government support through initiatives like the **Ayushman Bharat Mission**.

### 34. AGNIBAAN SORTED (SUBORBITAL TECHNOLOGICAL DEMONSTRATOR)

**Context:**

**Chennai-based start-up Agnikul Cosmos Private Limited** achieved a historic milestone by launching the world's first rocket, Agnibaan SOrTeD, with a **fully 3D-printed engine from Sriharikota**.

- This launch marks **India's first from a private launchpad** and the **first semi-cryogenic engine-powered rocket** launch globally.

**More about the News:**

**The rocket, Agnibaan SOrTeD** aims to validate in-house technologies and ensure optimal functioning for Agnikul's orbital launch vehicle. It features a **two-stage design capable of carrying payloads from 30kg to 300 kg** to heights of 700 km. Launched from the **privately developed 'Dhanush' launchpad at Sriharikota**, it employs a semi-cryogenic engine using **a liquid oxygen and kerosene** propellant combination. This initiative aligns with India's efforts to **privatize the space sector, allowing 100% FDI and emphasizing private sector engagement through IN-SPACe**.

**Environment & Ecology**

### 35. COMBATING OIL SPILLS AT SEA

**Context:**

The **Indian Coast Guard (ICG)** organised a 'Pollution Response Seminar and Mock Drill' recently.

Topic	Details
<b>What is an Oil Spill?</b>	The release of <b>liquid petroleum hydrocarbons into the environment, especially marine areas</b> , from tankers, platforms, rigs, or wells.
<b>Substances</b>	Refined products like gasoline, diesel, bunker fuel, or oily refuse.
<b>Examples of Incidents</b>	<b>International:</b> El Palito refinery (Venezuela, 2020), MV Wakashio (Mauritius, 2020), Norilsk diesel spill (Russia, 2020), Deepwater Horizon (Gulf of Mexico, 2010) <b>India:</b> <b>Chennai</b> (2023 and 2017), Sundarban (2014), ONGC Uran (2013), Mumbai (2010)
<b>Damage</b>	<b>Environmental:</b> Harm to fish, birds, and mammals; habitat contamination; <b>Fisheries:</b> Reduced fish populations, damaged fishing gear; <b>Tourism:</b> Decline due to polluted beaches; <b>Health:</b> Toxic exposure causing respiratory problems, and skin irritation.
<b>International Efforts for Oil Spill Management</b>	<b>MARPOL (1973):</b> International Maritime Organisation's convention to prevent pollution from ships (India is a signatory); <b>Oil Pollution Preparedness, Response and Cooperation Convention (1990):</b> Framework for international cooperation and mutual assistance in oil spill response (India is a signatory)

<b>Indian Efforts for Oil Spill Management</b>	<b>National Oil Spill Disaster Contingency Plan</b> (NOS-DCP): Managed by the Indian Coast Guard, it ensures effective spillage reporting, prompt response, public health protection, and use of science and technology; <b>Merchant Shipping Act, 1958</b> : Grants the government authority to enforce compliance with shipping regulations to prevent oil spills.
<b>Control Measures for Oil Spills</b>	<b>Bioremediation</b> : Using microorganisms to remove toxins (e.g., TERI's Oil Zapper bacteria). <b>Oil Booms</b> : Floating barriers to contain spills. <b>Dispersants</b> : Chemicals sprayed to aid natural oil breakdown.

## 36. MANGROVE ECOSYSTEM

### Context:

The first **global mangrove assessment by the International Union for Conservation of Nature (IUCN)**, warns of the imminent collapse of South India's mangrove ecosystems due to pollution, deforestation, and coastal development.

- Unlike the ecosystems in **western and eastern India**, those in the south are highly vulnerable to collapse, threatened further by rising sea levels and severe storms linked to climate change.

**The IUCN Red List of Ecosystems (RLE)** has assessed mangrove ecosystems globally for the first time, revealing alarming findings.

1. **Half of the assessed global mangrove ecosystems** are at risk of collapse, with nearly 20% classified as high risk.
2. **Major threats include** climate change, deforestation, development, pollution, and dam construction.
3. **Climate change** alone jeopardizes **one-third of assessed mangrove** ecosystems.
4. **Sea-level rise** is predicted to submerge 25% of global mangrove area in the next 50 years.
5. **Without significant intervention, by 2050**, climate change and sea-level rise could lead to the **loss of 1.8 billion tonnes of stored carbon and expose 2.1 million lives** to coastal flooding.
6. **Indian mangroves vary in status**: Andaman and Bay of Bengal are classified as Least Concern, while South India is Critically Endangered, and West India is Vulnerable.

**Mangroves play a crucial role in disaster risk reduction**, carbon sequestration, and supporting biodiversity and fisheries.

### Initiatives for Mangroves:

#### Global:

1. **Mangrove Breakthrough**: Introduced at UNFCCC COP27 by UN High-Level Climate Champions and Global Mangrove Alliance (GMA).
2. **Global Mangrove Alliance (GMA)** was established at the World Ocean Summit in 2018.
3. **Mangrove Alliance for Climate**: Led by UAE in collaboration with Indonesia.

#### India:

1. **Mangrove Initiative for Shoreline Habitats & Tangible Incomes (MISHTI)**.
2. **Conservation and Management of Mangroves and Coral Reefs** under National Coastal Mission Programme.

## 37. CLIMATE LITIGATION

### Context:

**Environmental activists have sued Norway**, challenging its proposal for seabed mineral exploration, claiming inadequate impact assessment. Norway's parliament approved the plan in January, citing minimal impact from the study.

### Deep-Sea Mining Explained

1. Involves extracting minerals from the ocean floor.
2. **Types**: Polymetallic nodules, seafloor sulphide deposits, cobalt crusts.
3. **Materials**: Nickel, cobalt, rare earth elements, essential for renewable energy and technology.
4. **Environmental concerns**: Ecosystem damage, pollution, sediment plumes affecting marine life.

### Climate Litigation Overview

1. **Definition**: Legal action to hold countries and companies accountable for climate efforts and contributions.
2. **Rising trend**: 2,180 cases in 65 jurisdictions by December 2022 (up from 884 in 2017).
3. **Key Cases**:
  - a. **2,000 Swiss women** sued their government over climate inaction.
  - b. **Young plaintiffs in Montana** won against the state for neglecting climate change.
  - c. **A 9-year-old girl in India** filed a case for greater climate action, later rejected.

### 38. GLOBAL SPECIES ACTION PLAN ONLINE KNOWLEDGE PLATFORM (GSAP SKILLS)

**Context:**

IUCN launched the Global Species Action Plan Online Knowledge Platform, known as **GSAP SKILLS**, at the Fourth meeting of the Subsidiary Body on Implementation, Convention on Biological Diversity.

**About GSAP Skills:**

The **Global Species Action Plan (GSAP) SKILLS** platform brings GSAP content online, enabling **real-time updates of technical tools** and resources. Its purpose is to facilitate **global collaboration and partnerships** by connecting decision-makers, species conservation practitioners, and experts at all levels. The platform’s objectives include providing real-time updates on technical resources and ensuring their accessibility and relevance. It also offers **information on species conservation interventions**, actions, and sub-actions for each **Global Biodiversity Framework** target, along with details on actors and technical tools.

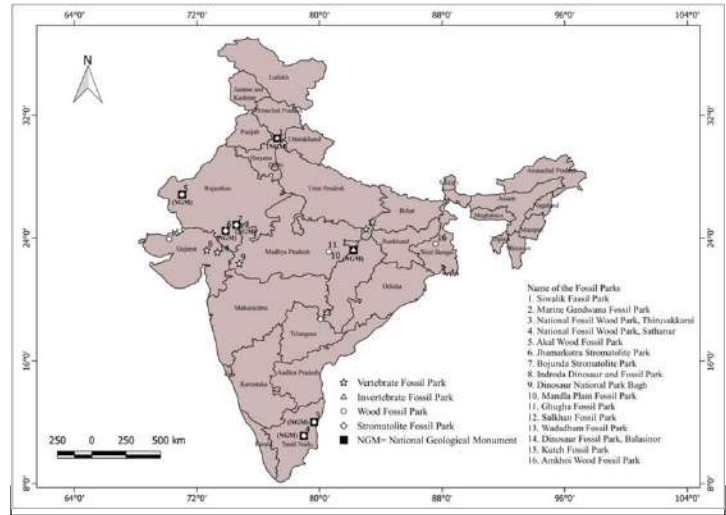
Managed by IUCN, the platform **meets the needs of governments and stakeholders for species conservation actions**. Additionally, it receives support from the Ministry of Environment, the Republic of Korea, and the **Tech4Nature Initiative** launched by IUCN and Huawei in 2020.

### 39. NATIONAL FOSSIL PARK IN GHUGWA, MADHYA PRADESH

**Context:**

Archaeologists from **Ashoka University recently unearthed prehistoric artefacts made from fossil wood** at the **National Fossil Park in Ghugwa, Madhya Pradesh**.

**About Ghughwa National Fossil Park:**  
**Located in the Dindori district, Madhya Pradesh**, was established as a National Park in 1983. Situated in a **tropical dry deciduous landscape**, it boasts fossilized plants dating back between **40 million and 150 million** years ago. The park is renowned for its preserved fossils of various woody plants like eucalyptus, date palm, and neem, as well as climbers, leaves, flowers, fruits, and even dinosaur egg fossils.



### 40. EUCALYPTUS TREES

**Context:**

The Kerala government allowed the **Kerala Forest Development Corporation (KFDC) to plant eucalyptus trees** for financial reasons, sparking protests from environmentalists who argued it would harm forests and increase human-animal conflicts.

- The government later **amended the order to restrict planting eucalyptus only on KFDC land**, aligning with a **2021 eco-restoration policy** aimed at replacing invasive species with indigenous flora.

**Issues with the order:** In conflict with the **2021 Eco-restoration Policy**, which aims to replace invasive species with native ones to support wildlife, the widespread planting of eucalyptus faces opposition. Studies like the **Chinnakanal Example** demonstrate that replacing eucalyptus with native fruit-bearing species could mitigate human-wildlife conflicts. Instances of successful restoration, such as the **Marayoor Sandal Division**, highlight the benefits of removing exotic species, supported by international organizations.

**About Eucalyptus:**  
**It is native to Australia, Tasmania, and nearby islands**, and is an **evergreen tree** primarily planted for **fuel and furniture wood**, as well as paper and pulp production. However, concerns arise due to **its high water consumption**, toxicity to animals, and flammable oil emissions. Despite being a biomass production champion, its rapid growth **exacerbates water depletion and soil fertility reduction**, leading to ecological concerns.

### 41. STELLARIA MCCLINTOCKIAE

**Context:** A new plant species, *Stellaria mcclintockiae*, was discovered in **Kerala’s Nelliampathy hills** and named

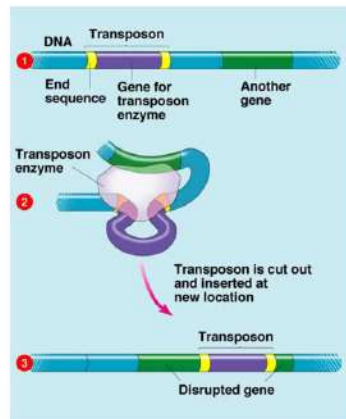
after **Nobel laureate Barbara McClintock** (one who discovered Jumping Genes). This is the first *Stellaria* species reported from South India. The annual herb, found at elevations of 1,250-1,400 meters, has unique petals, pollen, bracts, sepals, and seeds.

### About Jumping Genes

Jumping genes, or transposable elements, are DNA sequences that move within the genome, activating or deactivating nearby genes. They can replicate and insert copies at new locations, causing genetic mutations and contributing to genome evolution.

## Jumping Genes

- In the 1940's, while studying corn, Barbara McClintock discovered that sometimes genes could move from one location to another in a chromosome or even to other chromosomes.
- The movement could result in the genes landing in the middle of another gene and disrupting them.
- These "jumping genes" are now called transposons.



## 42. ALASKA'S RIVERS ARE TURNING ORANGE

### Context:

Alaska's rivers are **turning orange due to toxic metals** released from thawing permafrost, a study from the University of California, Davis reveals.

As the earth warms, **permafrost melts, exposing minerals like iron, zinc, copper, nickel, and lead, which taint the water**. This phenomenon, visible even from space, has been observed since 2018 and poses concerns for aquatic life and drinking water.

### About Alaska:

**It is a state of the USA**, located in the extreme northwest of North America, bounded by the Beaufort Sea, Arctic Ocean, Gulf of Alaska, Pacific Ocean, Bering Sea, and Chukchi Sea. It shares a land boundary with Canada and a maritime boundary with Russia.



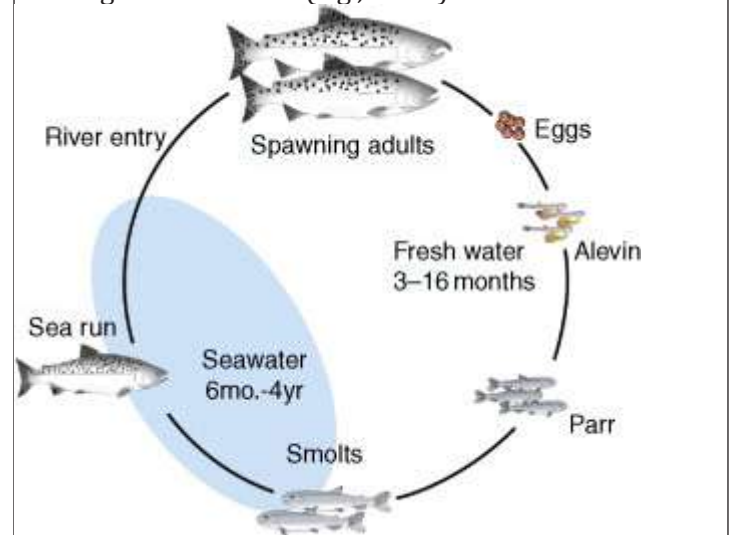
## 43. DIADROMOUS FISH

### Context:

A study published in the **British Ecological Society's Journal of Applied Ecology** found that 62% of Marine Protected Areas (MPAs) for migratory fish species (such as diadromous fish) do not align with their core habitats.

### About Diadromous fish:

**Diadromous fish** are those fishes which migrate between saltwater and freshwater environments (e.g. such as the Bull Shark). They transport **energy and nutrients between these ecosystems**. This group includes anadromous fish, which live in saltwater but breed in freshwater (e.g., **Chinook salmon**), and catadromous fish, which live in freshwater but breed in saltwater (e.g., North American eel). They face threats like habitat destruction and migration barriers (e.g., dams).



### Marine Protected Areas (MPAs)

**MPAs are designated regions** managed for conserving marine resources, ecosystem services, or cultural heritage, with specific restrictions to achieve conservation goals. They can include **regulated fishing, research, and other activities**. At COP15 in 2022, nations committed

to **protecting 30% of the planet's lands and oceans by 2030**. However, 70% of MPAs are underfunded, with most located in coastal areas and only 2% protecting the high seas.

**MPAs in India:**

India **has notified 130 Marine Protected Areas** (under the Wildlife Protection Act, 1972) across the Coastal States and Islands; in addition, **106 coastal and marine sites** have been identified and prioritized as Important **Coastal and Marine Biodiversity Areas (ICMBAs)** to take care of marine species conservation. They are vital for marine habitat conservation and can help protect against global warming impacts.

### 44. MONSOON CROAKS BIOBLITZ

**Context:**

The **"Monsoon Croaks Bioblitz"** is a four-month citizen science program organized by the Centre for Citizen Science and Biodiversity Informatics at the Kerala Forest Research Institute (KFRI).

It aims to **document frog species in Kerala** during the monsoon season, utilizing the **iNaturalist app** for public participation. The project seeks to raise awareness about **frog biodiversity and habitat conservation**, with observations contributing to the Global Biodiversity Information Facility database. The initiative follows a **successful 2023 edition**, emphasizing citizen engagement in biodiversity conservation.

**Significance of Frogs:**

Frogs play a crucial role in the **ecosystem as indicators of environmental health and contributors to biodiversity**. They control insect populations, serve as prey for various animals, and contribute to nutrient cycling through their diet and waste. Frog populations face threats from altered rainfall, climate change, habitat loss, pollution, and road accidents. About 41% of frog species worldwide are classified **as endangered on the IUCN Red List**.

**Defence**

### 45. INDIAN NAVAL SHIPS CONCLUDE SOUTH CHINA SEA DEPLOYMENT

**Context:**

Indian Navy ships **INS Delhi, INS Shakti, and INS Kiltan** completed their operational deployment to the South China Sea, visiting Singapore, Malaysia, Vietnam, the Philippines, and Brunei.

This deployment underscores **India's expanding maritime engagement in Southeast Asia**, focusing on cooperation in the Indo-Pacific. The visit included exchanges, exercises, and community outreach programs aimed at enhancing naval cooperation and interoperability.

**About INS Kiltan:**

INS Kiltan, a state-of-the-art indigenous warship, is on the brink of being commissioned into the Indian Navy. It represents the **third vessel in the Kamorta-class corvettes** constructed under **Project 28**. It is named after an island in the strategically significant Lakshadweep and **Minicoy group**.



Type of Warship	Description	Examples
Aircraft Carriers	Large ships capable of carrying and launching aircraft.	INS Vikramaditya, INS Vikrant (under construction)
Destroyers	Versatile warships with anti-air, anti-ship, and anti-submarine capabilities.	INS Kolkata, INS Visakhapatnam, INS Imphal
Frigates	Smaller than destroyers, with multi-role capabilities.	INS Shivalik, INS Nilgiri
Corvettes	Compact warships designed for coastal defense and patrol duties.	INS Kamorta, INS Kiltan
Submarines	Submersible vessels used for stealthy underwater operations.	INS Kalvari, INS Arihant
Patrol Vessels	Smaller craft used for patrolling, search and rescue, and other coastal missions.	INS Saryu, INS Sunayna
Mine Countermeasures Vessels	Designed for mine-clearing operations.	INS Nireekshak, INS Karwar
Landing Platform Docks	Amphibious assault ships for launching troops and equipment ashore.	INS Jalashwa, INS Shardul
Offshore Patrol Vessels	Used for patrolling and surveillance in offshore waters.	INS Vikram, INS Vajra
Research Vessels	Ships dedicated to scientific research and oceanographic studies.	INS Sagardhwani, INS Sindhughosh (research variant)
Training Ships	Used for training purposes and instruction of naval cadets.	INS Tarangini, INS Sudarshini

### 46. RUDRAM-II AIR-TO-SURFACE MISSILE

**Context:**

Recently, Defence Research & Development Organisation (DRDO) successfully flight-tested the RudraM-II air-to-surface missile from a Su-30 MK-I aircraft of the Indian Air Force off the Odisha coast.

**About RudraM-II**

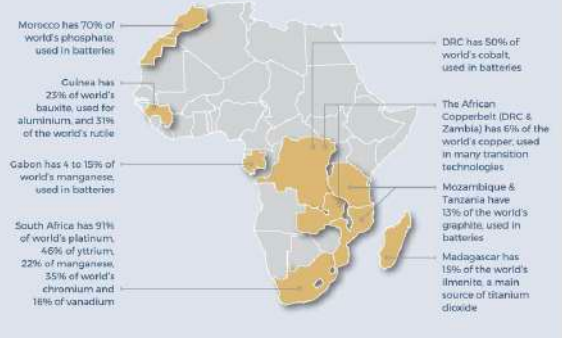

RudraM-II is an **indigenously developed solid-propelled air-launched missile** designed for air-to-surface operations by the DRDO. Following the successful 2020 test of RudraM, a **new-generation anti-radiation missile (NGARM)** and the first indigenous ARM of the Indian Air Force, RudraM-II is equipped with an **Inertial Navigation System (INS)**, Global Positioning System (GPS), and a **Passive Homing Head (PHH)**. The PHH can detect, classify, and engage targets across a wide frequency band.

### Types of Missiles Used by Indian Military

Missile Type	Name(s)	Description
<b>Ballistic Missiles</b>	<a href="#">Agni</a> Series, Prithvi	Long-range missiles capable of delivering nuclear and conventional warheads.
<b>Cruise Missiles</b>	BrahMos, Nirbhay	Subsonic and supersonic missiles for precision strikes, <a href="#">BrahMos</a> being the fastest supersonic cruise missile.
<b>Anti-Tank Missiles</b>	Nag, HELINA, MPATGM	Designed to destroy tanks and armoured vehicles.
<b>Surface-to-Air Missiles</b>	Akash, Barak-8	Used for air defence to intercept and destroy enemy aircraft and missiles.
<b>Air-to-Air Missiles</b>	Astra, Python-5	Fired from aircraft to target enemy aircraft.
<b>Anti-Ship Missiles</b>	BrahMos, Dhanush	Used to target and destroy enemy ships and naval vessels.
<b>Anti-Radiation Missiles</b>	RudraM, NGARM	Designed to detect and destroy enemy radar installations.
<b>Surface-to-Surface Missiles</b>	Prahaar, Shaurya	Short to medium-range missiles for targeting enemy installations and strategic points on the ground.
<b>Submarine-launched ballistic Missiles (SLBMs)</b>	K-15 Sagarika, K-4	Launched from submarines for nuclear deterrence.
<b>Man-Portable Air-Defense Systems (MANPADS)</b>	Igla-S, Starstreak	Portable systems for targeting low-flying aircraft and helicopters.

**MAPPING**

INTERNATIONAL

Area	Why in News
<p><b>1. AFRICA: CRITICAL MINERAL ACQUISITION PLAN BY INDIA</b></p>	<p><b>Context:</b> India aims to <b>bolster its access to critical minerals in Africa</b> to enhance resource security and challenge China's dominance in the region.</p> <ul style="list-style-type: none"> <li>With a list of 30 crucial minerals, including lithium and cobalt, India seeks partnerships in countries like Tanzania, Zimbabwe, Congo, and Zambia.</li> </ul> <div data-bbox="384 477 948 913"> <p><b>Figure 1 African countries with large shares of critical minerals</b></p>  <p>Source: Pado-Schoups Diane et al., Triple Win: How Mining Can Benefit Africa's Citizens, Their Environment and the Energy Transition, Research Report New York: Natural Resource Governance Institute, 2023</p> </div> <p><b>Khanij Bidesh India Limited (KABIL)</b> was established in 2019 as a joint venture of <b>NALCO, HCL, and MECL</b> to secure strategic minerals like lithium and cobalt from overseas. <b>KABIL</b> handles the identification, acquisition, exploration, and processing of these minerals to meet India's commercial needs.</p> <p><b>The Mineral Security Partnership (MSP)</b> is a US-led coalition of 14 countries, including <b>India</b>, focusing on ensuring stable supply chains for critical minerals like <b>Cobalt, Nickel, Lithium, and rare earth minerals</b>. Its mandate includes diversifying and stabilizing global supply chains, promoting investment, upholding environmental and social standards, and increasing mineral recycling.</p>
<p><b>2. INDONESIA'S MOUNT IBU</b></p>	<p><b>Context:</b> <b>Indonesia's Mount Ibu on Halmahera island erupted</b>, sending ash 4 km high with purple lightning flashing around its crater.</p> <p><b>About Mount Ibu</b> Mount Ibu is a stratovolcano on the northwest coast of Halmahera Island, Indonesia. It stands 1,377 meters above sea level and spans 16 km east-west and 13 km north-south. Known for frequent eruptions, it recorded 21,100 eruptions in 2023, making it the second most active volcano in Indonesia.</p> <p><b>About Stratovolcanoes</b> Stratovolcanoes are <b>tall, steep, cone-shaped volcanoes</b> found mainly above subduction zones, forming major parts of regions like the <b>Pacific Ring of Fire</b>. They differ from the flatter shield volcanoes and makeup about <b>60% of the Earth's volcanoes</b>.</p> <div data-bbox="384 1697 927 2056">  </div>

### 3. CAMPI FLEGREI 4. (ITALY)

**Context:** Recently, a **4.4** magnitude earthquake struck **Italy's Campi Flegrei supervolcano region**, causing mild damage in Pozzuoli and Naples. This quake, part of a recent "**seismic storm**," occurred at a depth of three kilometres.

**What is Campi Flegrei?**

Campi Flegrei (Phlegrean Fields) is an **active volcanic area near Naples, Italy**, known for its complex **volcanic system** rather than a single volcano. The region's caldera, formed **39,000 years ago, spans 12-15 km in diameter**, with one-third under the **Tyrrhenian Sea**. It is the largest active caldera in Europe and more active than nearby **Mount Vesuvius**. Campi Flegrei has been restless since 1950 due to **bradyseism**, a phenomenon involving surface movement from underground magma chamber activity. Its last eruption in 1538 created Monte Nuovo.

**About Italy:**

**Italy, a European country with a long Mediterranean coastline**, has its capital, **Rome**, and is home to the Vatican as well as landmark art and ancient ruins.

**Italy has many volcanoes** because it is located on a tectonic plate boundary where the **African Plate is subducting beneath the Eurasian Plate**. This geological activity creates conditions favourable for volcanic activity, leading to the formation of several active and dormant volcanoes.



### 5. ZAMBIA

**Context:** The inaugural **Kavango-Zambezi (KAZA) Trans-Frontier Conservation Area (TFCA)** Summit is taking place in Zambia.

**KAZA TFCA was formally established in 2011** and encompasses the Kavango and Zambezi river basins, where **Angola, Botswana, Namibia, Zambia, and Zimbabwe** converge. This region includes notable landmarks such as the **Okavango Delta, the world's largest inland delta**, and Victoria Falls, a **UNESCO World Heritage Site** and one of the seven natural wonders of the world.

**Zambia, a landlocked country in southern Africa**, boasts rugged terrain and abundant wildlife, featuring numerous parks and safari areas. Along its border with Zimbabwe, the renowned Victoria Falls, locally known as Mosi-oa-Tunya or "Smoke That Thunders," cascades a misty 108 meters into the narrow Batoka Gorge.



INDIAN

Area	Why in News
<p><b>1. KUMAON HIMALAYAS</b></p>	<p><b>Context:</b> The Supreme Court has temporarily halted a <b>90-acre hotel and township project</b> in the Kumaon Himalayas, challenging the <b>“single window” clearance system</b>. SC argued that <b>single-window clearances</b> cannot replace <b>mandatory environmental approvals</b> in such ecologically sensitive areas.</p> <p><b>Kumaon Himalayas:</b></p> <ol style="list-style-type: none"> <li><b>Location:</b> West-central Himalayas in northern India, within Uttarakhand, northwest of Nepal.</li> <li><b>Boundaries:</b> Between the Sutlej River (west) and Kali River (east).</li> <li><b>Ranges:</b> Part of the Siwalik Range (south) and Great Himalayas (north).</li> <li><b>Highest Peaks:</b> Nanda Devi and Kamet.</li> <li><b>Lakes:</b> Naini Lake, Sattal, Bhimtal, Naukuchiya Tal.</li> <li><b>Hill Stations:</b> Nainital, Ranikhet, Almora.</li> <li><b>Indigenous People:</b> Tharus, Bhutiyas, Jaunsaris, Buksas, Rajis.</li> <li><b>Concerns:</b> Ecologically fragile and seismic-prone area.</li> </ol> <div data-bbox="331 824 1056 1211" data-label="Image"> </div> <p style="text-align: center;">FIG. 3.7. Regional Divisions of the Himalayas</p> <p><b>Shiwalik Range:</b></p> <ol style="list-style-type: none"> <li><b>Extent:</b> 1,600 km from the Teesta River (Sikkim) through Nepal and India to northern Pakistan.</li> <li><b>Parallel:</b> Runs with the Himalayan system from Haridwar (Ganges) to the Beas River.</li> <li><b>Height:</b> Average 900 to 1,200 meters.</li> <li><b>Composition:</b> Low sandstone and conglomerate hills.</li> </ol> <div data-bbox="304 1464 1086 1839" data-label="Image"> </div>

## 2. NAMERI TIGER RESERVE

**Context:** The **Himalayan serow** was recently spotted for the first time in the central region of Nameri National Park and Tiger Reserve.

### About Himalayan Serow

1. **Species:** Subspecies of the mainland serow (*Capricornis sumatraensis*)
2. **Appearance:** Resembles a mix of goat, donkey, cow, and pig
3. **Habitat:** Found at altitudes of 2,000-4,000 meters in the eastern, central, and western Himalayas
4. **Characteristics:** Medium-sized, large head, thick neck, short limbs, long ears, dark coat
5. **Diet:** Herbivorous
6. **Distribution:** Restricted to the Himalayan region in Asia
7. **Conservation Status:** Vulnerable (IUCN), CITES Appendix I, Wildlife Protection Act, 1972: Schedule I

### About Nameri Tiger Reserve

Nameri Tiger Reserve, located in the **northern Sonitpur district of Assam** near the foothills of Arunachal Pradesh, shares its northern boundary with **Pakke Tiger Reserve**, creating a continuous habitat. The reserve comprises **Nameri National Park, Sonai-Rupai Wildlife Sanctuary, and the Naduar and Balipara Reserve Forests**, and is defined by the **Jia-Bhoreli River** to the west and **the Bor-Dikorai River** to the east. The vegetation includes tropical evergreen and semi-evergreen forests, moist deciduous forests, cane breaks, and grasslands. The reserve's diverse fauna features the rare white-winged wood duck, leopard cat, common otter, black giant squirrel, and several other species.

