

# CURRENT AFFAIRS MAGAZINE



**SEPT. 2024**



- ▶ **What India Can Do to Reduce Food Wastage**
- ▶ **The Great Stupa of Sanchi**
- ▶ **SC Strengthening Law Against Child Pornography in India**
- ▶ **Textile Sector in India**
- ▶ **White Revolution 2.0**
- ▶ **Making India a Start-Up Nation**



## **Mains Daily Analysis** **3**

### **General Studies I** **3**

1. What India Can Do to Reduce Food Wastage 3
2. Why Extending National Health Insurance Scheme to Elderly is Not Enough 5
3. Why Supreme Court Must Look into Compensation for Surrogates 7
4. Typhoon Yagi - Asia's most powerful storm 9
5. Port Blair renamed as Sri Vijaya Puram 11
6. The Great Stupa of Sanchi 13
7. Mission Mausam 15
8. Challenges to Road Safety in India 16
9. Uncommon Cyclones in the Arabian Sea 18

### **General Studies II** **20**

1. New draft guidelines on passive euthanasia 20
2. How can the Judiciary Discipline Judges? 21
3. India grapples with China Shock 2.0 22
4. Bilkis Bano case - Supreme Court dismisses Gujarat review plea 24
5. Clause 6 of Assam Accord 27
6. India joins US-led Mineral Security Network 28
7. SC Strengthening Law Against Child Pornography in India 30
8. With Recent decisions, Supreme Court Has Deepened Constitutional Idea of Personal Liberty 31
9. How do Emergency Provisions Impact Centre-State Relations? 33

### **General Studies III** **35**

1. Digital Personal Data Protection Act 35
2. Why Digitisation is Not Enough to Reform Land Laws 36
3. Textile Sector in India 38
4. A Legal Void: How to Deal with the National Security Risk from FDI and Trade 40
5. DeepTech: Revolutionizing the Future of Technology 42
6. India Needs a National Security Strategy 43
7. Pitfalls of Estimating GDP 46
8. Food Processing Sector Reforms in Last 10 Years 47
9. White Revolution 2.0 48
10. Rs 6,000-crore scheme to boost precision farming 50
11. The Shock of Crumbling Infrastructure and the Solution 52
12. Making India a Start-Up Nation 54

**13. India's Digital Public Infrastructure: How to Ensure Healthy Competition** 56

**14. The Grave Threat from Antimicrobial Resistance** 59

**PRELIMS BOOSTER-THE HINDU & INDIAN EXPRESS** 61

**PRESS INFORMATION BUREAU (PIB)** 72

**PLACES IN NEWS** 91

**EDUFACTS** 94

## General Studies I

### 1. What India Can Do to Reduce Food Wastage

#### Context

- The **issue of food loss and waste (FLW)** is a **critical global challenge** that has profound implications for food security, environmental sustainability, and economic efficiency.
- Recognising the urgency of the matter, **the United Nations designated September 29 as the International Day of Awareness of Food Loss and Waste (FLW)**.
- It is **important to have an assessment on the scale of food loss and waste, its environmental impact, and India's specific challenges** and efforts to mitigate these losses.

#### Global Impact of Food Loss and Waste

- **According to a 2023 Food and Agriculture Organisation (FAO) report**, food lost between harvest and retail **accounts for 13.2% of global food production**, while UNEP estimates that **17% of food is wasted** at the retail and consumption stages.
- Combined, **this amounts to nearly 30% of global food production being lost or wasted each year**.
- **If just half of this food could be saved, it would be sufficient to feed all the world's hungry people**, thus contributing to the global fight against hunger.
- Furthermore, **reducing FLW would lead to a significant decrease in greenhouse gas (GHG)**
- It is estimated that **FLW contributes to 8-10% of global GHG emissions and accounts for 38% of total energy usage in food production**.

#### An Assessment on Causes of Food Loss in India

- **Lack of Mechanisation**
  - The **All-India Debt and Investment Survey (AIDIS)** in 2019 revealed that only **4.4% of cultivator households in India owned tractors**, and only **5.3% owned essential farm equipment** such as power tillers, combine harvesters, or threshers.
  - **Small and marginal farmers**, who make up over 86% of India's agricultural households, often **cannot afford these machines**.
  - As a result, **manual methods are still widely used, which increases the risk of food loss** during harvesting and processing.
  - For instance, **combine harvesters, when used in paddy cultivation, significantly reduce grain losses** compared to traditional methods, but their use is limited to **regions like Punjab, where 97% of paddy-producing households use mechanized equipment**.
  - In contrast, **only 10% of paddy farmers in Bihar have access to such equipment**.
- **Inadequate Cold Chain Infrastructure**
  - India's **cold chain infrastructure is underdeveloped**, particularly for perishable goods like fruits, vegetables, and dairy products.
  - Due to the lack of proper refrigeration and temperature-controlled transport, **a large proportion of horticultural crops are lost** before they even reach the market.
  - The **absence of efficient cold chains results in spoilage and wastage**, reducing both the availability of fresh produce and the potential income for farmers.
  - According to a survey, **horticultural crops are especially vulnerable**, with nearly 50 MMT lost annually due to this deficiency.
- **Traditional Drying and Storage Methods**
  - While **sun drying is a low-cost option**, it **exposes food to contamination from dust, pests, and uneven moisture levels**, leading to quality degradation and food loss.
  - Furthermore, **inadequate storage facilities exacerbate post-harvest losses, with 10% of total food grain production is lost** due to poor and inadequate storage infrastructure.

- **Without access to modern drying technologies such as solar dryers or proper storage infrastructure** like warehouses and silos, **farmers face significant challenges** in preserving their produce, especially during the monsoon season.
- **Transportation and Supply Chain Inefficiencies**
  - India's vast geography, coupled with poor road infrastructure in rural areas, means that **transporting crops from farms to markets can take considerable time.**
  - During this period, **perishable goods are particularly prone to spoilage** due to exposure to heat, moisture, and handling damage.
  - **Even non-perishable items such as grains can suffer from poor handling and packaging** during transit, leading to further losses.

### Impact of Food Loss in India

- **Economic Consequences**
  - The monetary value of food loss in India is alarming, **with Rs 1.53 trillion worth of food wasted annually.**
  - This **translates into lost income for farmers, especially small and marginal farmers** who cannot absorb these losses.
  - Food loss **also affects the country's GDP, as agriculture accounts for a significant portion** of India's economy.
  - Additionally, **the lost produce could have been sold domestically or exported,** reducing potential revenue streams for both the government and farmers.
- **Environmental Impact**
  - **Agriculture is a resource-intensive sector,** requiring large amounts of water, energy, and land, therefore, **when food is lost or wasted, all the resources that went into producing it are wasted as well.**
  - **In India, this is particularly concerning** given the country's ongoing struggles with water scarcity and land degradation.
  - Furthermore, **food that is discarded often ends up in landfills,** where it decomposes and produces methane, a potent greenhouse gas.
  - **Reducing food loss would not only conserve resources but also lower the country's greenhouse gas emissions,** contributing to the fight against climate change.
- **Social and Food Security Implications**
  - According to the Global Hunger Index, **India ranks poorly in terms of hunger and malnutrition,** with millions of people unable to access sufficient nutritious food.
  - **The fact that such a large quantity of food is lost each year while millions go hungry is a stark indicator of systemic inefficiencies.**
  - **If even a portion of the food lost post-harvest could be saved, it would significantly improve food security in the country** and reduce the incidence of malnutrition, particularly in rural areas.

### Solutions to Address the Food Loss Problem in India

- **Mechanization and Technological Interventions**
  - **Expanding the use of mechanised farming equipment,** particularly among small and marginal farmers, is essential for reducing post-harvest losses.
  - Initiatives such as **Farmer Producer Organisations (FPOs) and Custom Hiring Centres (CHCs) can help farmers access machinery** through group leasing or shared services.
  - Additionally, **investing in green technologies like solar dryers and modern storage facilities can further reduce losses,** particularly for perishable goods.
- **Improving Cold Chain Infrastructure**
  - **Building a robust cold chain infrastructure is crucial** for reducing the spoilage of perishable products.
  - Government initiatives to **encourage private investment in cold chains, as well as public-private partnerships, can help bridge the infrastructure gap.**
  - **Expanding cold storage facilities and improving refrigerated transportation would enable farmers to extend the shelf life of their produce** and reach wider markets, thereby reducing food loss.
- **Policy Reforms**
  - **Policy interventions are necessary** to ensure that small and marginal farmers can benefit from technological advancements and infrastructure improvements.

- For instance, **revisiting the Jute Packaging Material Act (JPMA) to allow for the use of airtight bags in place of jute bags could significantly reduce storage and transit losses.**
- Similarly, **government programs that offer subsidies** for modern storage facilities, cold chains, and mechanised equipment **would support farmers in reducing food loss.**
- **Education and Awareness Campaigns**
  - **Educating farmers** about best practices in harvesting, drying, and storage **is crucial for minimising losses.**
  - **Training programs on the use of modern technologies**, such as combine harvesters and solar dryers, **can empower farmers to adopt more efficient methods.**
  - Additionally, **raising awareness among consumers about food waste at the household level, especially in urban areas** where waste from weddings and events is high, could help reduce food wastage.

### Conclusion

- **India's food loss and waste problem presents both a challenge and an opportunity.**
- **Reducing food loss is not merely an economic necessity but a moral obligation**, especially in a country where millions still suffer from hunger and malnutrition.
- **By prioritising solutions, India can contribute to global efforts to tackle food loss and waste** while fostering a more sustainable and resilient agricultural system.

## 2. Why Extending National Health Insurance Scheme to Elderly is Not Enough

### Context

- The **Centre's decision to extend the Ayushman Bharat Pradhan Mantri Jan Arogya Yojana (AB-PMJAY)** with an additional Rs 5 lakh coverage **for individuals aged above 70 is commendable.**
- However, **it raises several questions about its sufficiency, long-term sustainability, and policy gaps** in the broader healthcare coverage.
- Therefore, **it is important to critically evaluate the implications of this extension, focusing on how it addresses the healthcare needs of the elderly population**, its financial viability, and the broader healthcare policy gaps that remain unaddressed.

### An Overview of India's Ageing Population and its Healthcare Needs

- India's demographic profile is **rapidly changing** and while life expectancy in the country has reached 70 years, the **healthy life expectancy is significantly lower at 63.5 years.**
- This **gap highlights a growing burden of non-communicable diseases (NCDs), disabilities, and an ageing population increasingly requiring long-term healthcare.**
- With private health insurance out of reach (especially for those engaged in informal labour [92% of the workforce]) for many elderly individuals due to exorbitant premiums, **the government's intervention is critical.**
- Currently, **only 20% of people over 60 years have health insurance coverage, contributing to high levels of impoverishment** due to catastrophic healthcare expenditures (CHE), particularly among the elderly.
- The **government's move to extend health coverage through AB-PMJAY, thus, appears timely and necessary.**

### A Critical Gap in the Announcement: Financial Burden and Insufficient Allocation

- While the government claims that the extension will benefit 4.5 crore families, **preliminary estimates suggest otherwise.**
- The **allocated Rs 3,437 crore appears insufficient to cover all eligible beneficiaries.**
- According to population projections and hospitalisation rates derived from the Longitudinal Ageing Survey of India (LASI), **5.6 crore households could be eligible for the scheme.**
- After accounting for those already covered under employer-based schemes, **the remaining 43.5 lakh families would need healthcare coverage.**
- Using average hospitalisation costs derived from LASI data (Rs 32,804 per year), **the scheme's actual cost would be Rs 14,282 crore annually**, over four times the current budget allocation.
- This **discrepancy points to a serious financial shortfall**, suggesting that the scheme, while well-intended, is **not adequately funded** to achieve its stated objectives.

## Broader Healthcare Coverage Gaps in ABPMJAY Extension

- **The Exclusion of Outpatient Care for Elderly**

- Outpatient care plays a critical role in preventive healthcare, early detection of diseases, and the ongoing management of chronic conditions.
- In fact, **outpatient services account for nearly 46% of total healthcare expenditure** in India.
- **For elderly individuals, regular doctor visits, medical tests, and minor treatments are necessary** to keep their health in check.
- **Most NCDs require periodic consultations** with healthcare professionals, diagnostic tests, and adjustments in treatment protocols — all of which fall under outpatient care.
- For example, **a person with diabetes needs regular blood sugar monitoring**, medication adjustments, and dietary consultations.
- Similarly, **individuals with hypertension need regular blood pressure checks** and medication management.

- **Risk of Out-of-Pocket Expense**

- By excluding outpatient services, **the AB-PMJAY forces elderly individuals to bear out-of-pocket expenses for these essential services**, which is particularly burdensome for those in lower-income brackets.
- It **contradicts the scheme's goal of protecting households** from catastrophic healthcare expenditures (CHE), as outpatient costs accumulate over time, potentially leading to significant financial stress.
- **Without insurance coverage for outpatient services, the elderly, who are more likely to have frequent healthcare needs, are left vulnerable** to impoverishment despite having hospitalization coverage under the scheme.

- **Exclusion of Long-Term Care**

- Another major gap in the AB-PMJAY is the **exclusion of long-term care, a critical aspect of healthcare for the elderly**.
- With ageing, **the prevalence of chronic conditions and disabilities increases**, requiring continuous care over an extended period.
- Conditions such as stroke, Parkinson's disease, dementia, and severe arthritis often render elderly individuals bedridden or significantly disabled, necessitating long-term medical and caregiving support.
- **Many of these conditions are not curable but can be managed to improve the quality of life** through sustained care.

- **Risk of Decline in Health**

- The **current AB-PMJAY scheme does not provide for long-term care services**, leaving a significant gap in the continuum of care for the elderly.
- This **omission is especially problematic given that many chronic diseases, such as cancer, cardiovascular diseases, and respiratory conditions, require ongoing treatment and rehabilitation even after hospitalisation**.
- **Without coverage for long-term care, elderly individuals are at risk of experiencing a decline in their overall health and quality of life** once they are discharged from the hospital.

- **Lack of Public Health Infrastructure and Over Reliance on Insurance**

- One of the central limitations of the AB-PMJAY extension is that **it focuses too heavily on insurance-based coverage** without addressing the critical need for improved public health infrastructure.
- **India's public health spending has stagnated between 0.9% and 1.35% of GDP** for the past seven decades.
- The over-reliance on insurance-based schemes without strengthening the public healthcare system may lead to a more expensive healthcare model, **similar to the one in the US, which has been criticised for its high costs and inequitable access**.
- By contrast, **the Canadian and European models of healthcare view health as a public service and treat it as a human capital investment**, leading to better health outcomes overall.

## Ways Ahead to Address Healthcare Coverage Gaps

- **Inclusion of Outpatient and Long-Term Care**

- To truly ensure the well-being of India's ageing population, **the AB-PMJAY must evolve to include outpatient and long-term care services**.
- The **current focus on secondary and tertiary care is insufficient** in addressing the complex and continuous healthcare needs of the elderly.

- Policy reforms that integrate these services into the public healthcare system would not only improve health outcomes for the elderly but also help reduce the financial burden on families and the healthcare system.
- **Investment in Public Health Infrastructure and Training Facilities**
  - Furthermore, the government must invest in training healthcare professionals, including geriatric specialists, nurses, and caregivers, to meet the specific needs of an ageing population.
  - Infrastructure improvements, such as the development of geriatric care centres and the inclusion of home-based healthcare services, are also necessary to support the growing demand for long-term care.

### Conclusion

- The extension of AB-PMJAY to cover older adults is an important policy intervention, but it is insufficient to address the healthcare challenges faced by India's ageing population.
- The scheme's limited scope, financial inadequacy, and exclusion of critical healthcare services like outpatient and palliative care hinder its effectiveness in promoting healthy ageing.
- To truly support the elderly and ensure their well-being, India must significantly increase its public healthcare spending, improve healthcare infrastructure, and integrate preventive care into its healthcare policies.

## 3. Why Supreme Court Must Look into Compensation for Surrogates

### Context

- The Surrogacy (Regulation) Act and the Assisted Reproductive Technologies (ART) (Regulation) Act, enacted in 2021, have created a framework for regulating surrogacy and other reproductive technologies in India.
- The Supreme Court of India is currently examining challenges to certain provisions, particularly the prohibition on compensating surrogate mothers.
- Amid these developments, it is important to have an assessment of the legal developments, ethical dilemmas, and the ongoing debate around the compensation model for surrogates in India.

### Historical Context and the Court's Role in Surrogacy Cases

- **Historical Context**
  - The Indian judiciary first encountered surrogacy-related cases in the early 2000s.
  - These cases often dealt with the legal status of children born through transnational surrogacy arrangements, which were common before being banned in 2016.
  - Such cases frequently involved the risk of children being rendered stateless, as legal systems struggled to determine their nationality and parental rights.
  - More recently, the courts have explored surrogacy from the perspective of parental rights, particularly concerning maternity leave entitlements for women who become mothers through surrogacy.
- **The Case of Jayashree Wad vs Union of India (2016)**
  - It stands out as a landmark legal event, which led to the prohibition of commercial surrogacy through the enactment of the Surrogacy Act.
  - However, the broader questions concerning compensation for surrogate mothers such as the nature of their labour and whether their contribution warrants payment remain inadequately addressed in the current legal framework.

### Provisions of the Surrogacy Act: A Ban on Commercial Surrogacy and the Rationale Behind It

- The Surrogacy Act explicitly prohibits commercial surrogacy, disallowing any payments to surrogate mothers beyond medical expenses and insurance coverage.
- The Act allows any willing woman between the ages of 25 and 35 to serve as a surrogate once in her lifetime on an altruistic basis, meaning she cannot receive any form of remuneration or reward.
- The surrogate must sign an agreement relinquishing all rights to the child after birth, framing her role as one of helping the intended parents.
- The rationale for banning payments stems from concerns about exploitation, especially in cases where economically disadvantaged women might be coerced into surrogacy by intermediaries or clinics.



- The law aims to eliminate the commercial aspects of surrogacy, attempting to prevent the commodification of women's bodies and the potential trafficking of children.
- Nonetheless, this raises significant ethical questions regarding whether the prohibition of compensation truly addresses the core issue of exploitation.

### Ethical Dilemmas Surrounding Compensation and the Nature of Surrogacy

- **The Altruism Model: Ethical Justifications and Criticisms**
  - The Surrogacy Act reflects a strong ethical stance in favour of altruism, portraying surrogacy as an act of compassion where a woman helps another couple realise their desire to become parents.
  - The altruistic model is built on the notion that surrogacy should not be commodified—if surrogates are paid, the relationship risks becoming transactional, reducing the pregnancy to a commercial service.
  - This aligns with the concern that introducing money into surrogacy could lead to the exploitation of vulnerable women, particularly those from economically disadvantaged backgrounds who might be coerced into surrogacy by financial necessity.
- **Commodification of Women's Bodies and the Sale of Children**
  - One of the primary ethical arguments against compensating surrogates is the fear that it could lead to the commodification of women's bodies.
  - Critics argue that if surrogacy is treated as a paid service, it risks turning women's wombs into rental spaces, thereby reducing their bodies to mere instruments for procreation.
  - This perspective aligns with broader ethical concerns about the commercialisation of human reproduction, where pregnancy becomes something that can be bought and sold like a product.
- **Exploitation and Economic Vulnerability**
  - The heart of the ethical dilemma around compensation lies in the potential for exploitation.
  - Opponents of a payment model fear that it may disproportionately affect poor women, who may be coerced into surrogacy out of financial desperation.
  - There is concern that commercial surrogacy may exacerbate existing social inequalities, turning surrogacy into a form of reproductive labour that is outsourced to the economically disadvantaged.
  - The risk is that women from poorer backgrounds may be pressured either by intermediaries or by their own economic circumstances into becoming surrogates, thereby deepening their vulnerability rather than empowering them.
- **Autonomy and the Right to Self-Determination**
  - At the core of the ethical debate on surrogacy compensation is the issue of autonomy.
  - A blanket ban on compensation, as imposed by the Surrogacy Act, restricts women's ability to make autonomous decisions about their own reproductive capacities.
  - By framing surrogacy as an act of altruism rather than a service, the law implicitly assumes that women would not willingly undertake surrogacy for payment unless they were being exploited or coerced.
  - This assumption undermines the notion of women as rational agents capable of making informed decisions about their bodies and labour.

### Parliamentary Committee Recommendation on Compensation and Challenges of Implementation

- **Parliamentary Committee Recommendation on Compensation**
  - The 2016 Surrogacy Bill was examined by several Parliamentary Committees before its enactment.
  - The Rajya Sabha's Department-related Parliamentary Standing Committee in its 102nd Report made a critical observation: pregnancy is a long, arduous process that impacts a woman's health, time, and family.
  - The committee noted that while everyone else involved in the surrogacy process doctors, lawyers, and hospitals gets paid, surrogate mothers are expected to provide their services altruistically.
  - The committee recommended that surrogates should receive reasonable compensation in addition to medical expenses and insurance coverage.
  - The committee's recommendation sought to balance the need to prevent exploitation with the necessity of recognising the surrogate's labour.
- **The Challenges of Implementation and Unintended Consequences**
  - The transition from a commercial surrogacy model to one based on altruism has not been smooth.

- **There have been reports of surrogacy arrangements going underground**, with illegal rackets exploiting women in unregulated markets.
- At the same time, **many couples seeking to become parents through surrogacy have struggled to find women** willing to act as surrogates under the current altruistic model.
- **Both these phenomena point to the challenges in enforcing the current legal framework** and the need to reconsider the prohibition on compensation.

#### Way Forward: Supreme Court's Crucial Role

- As the SC reviews the constitutional validity of certain provisions of these laws, **it remains to be seen whether the Court will distinguish between the logic of prohibition and the question of fairness in compensation.**
- What is clear is that a more balanced regulatory framework **one that acknowledges the labour involved in surrogacy and provides for fair compensation could help resolve many of the ethical dilemmas** and practical challenges that have emerged since the enactment of these laws.

#### Conclusion

- The **ongoing debate surrounding the Surrogacy Act and ART Act revolves around a fundamental issue which is fairness.**
- **While the prohibition on compensation was designed to protect women from exploitation**, it has, in some cases, **created new challenges.**
- The **failure to recognise pregnancy as a form of labour deserving of compensation undermines the contribution of surrogate mothers**, while also leading to unintended consequences, such as underground surrogacy markets.

## 4. Typhoon Yagi- Asia's most powerful storm

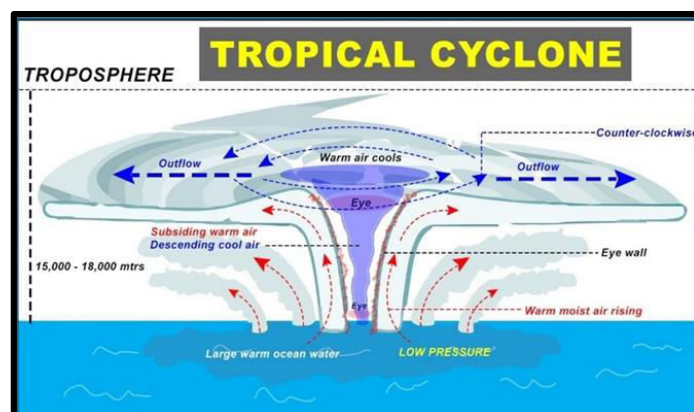
#### Why in news?

Typhoon Yagi, the **strongest tropical cyclone in Asia this year and second only to Hurricane Beryl globally**, has caused widespread devastation across Southeast Asia.

Countries like the **Philippines, China, Laos, Myanmar, and Thailand have been severely affected**, but **Vietnam has borne the brunt of the storm**, with around 233 deaths. Torrential rains, floods, and landslides have added to the challenges faced by millions in the affected areas.

#### Tropical Cyclones

- **About**
  - Cyclones that develop in the regions between the **Tropics of Capricorn and Cancer are called tropical cyclones.**
  - The World Meteorological Organisation uses the term 'Tropical Cyclone' to cover weather systems in which **winds exceed 'Gale Force' (minimum of 34 knots or 63 kph).**
  - Tropical cyclones are the progeny of ocean and atmosphere, powered by the heat from the sea; and driven by **easterly trades and temperate westerlies, high planetary winds and their own fierce energy.**
- **Formation of cyclones**



- Tropical Cyclone is a **weather phenomenon**, which is formed **only over warm ocean waters near the equator.**

- **Characteristics of a Tropical Cyclone:**
  - The **centre of a cyclone is very calm and clear with very low air pressure**. The average speed is **120 kmph**.
  - They have **closed isobars** which leads to greater velocity.
    - Isobars are **imaginary lines on a weather map that connect locations with equal atmospheric pressure**.
  - They **develop over oceans and sea only**.
  - They **move from east to west** under the influence of trade winds.
  - They are **seasonal** in nature.
- **Classification of cyclones**
  - Cyclones are classified **on the basis of wind speed** by the Indian Meteorological Department (IMD):
    - **Depression:** Wind speeds of between 31–49 km/h
    - **Deep Depression:** Between 50-61 km/h
    - **Cyclonic Storm:** Between 62–88 km/h
    - **Severe Cyclonic Storm:** Between 89-117 Km/h
    - **Very Severe Cyclonic Storm:** Between 118-166 Km/h
    - **Extremely Severe Cyclonic Storm:** Between 167-221 Km/h
    - **Super Cyclonic Storm:** Above 222 Km/h
- **Category of a tropical cyclone**
  - The category of a tropical cyclone is determined by its sustained wind speed, as measured by the **Saffir-Simpson Hurricane Wind Scale**.
  - It is classified into five categories — **Category 1 to Category 5**.
  - While Category 1 tropical cyclones bring winds of 119 to 153 kmph, **Category 5 tropical cyclones, which are the strongest, have winds of 252 kmph or higher**.
    - Storms that reach Category 3 and higher are considered major tropical cyclones due to their potential to inflict significant damage.
- **Tropical cyclones are known by different names in various regions**
  - **Hurricanes** – In the in the West Indian islands in the Caribbean Sea and Atlantic Ocean.
  - **Tornados** - In the Guinea lands of West Africa and southern USA
  - **Typhoons** – In the Northwest Pacific Ocean, particularly affecting East and Southeast Asia (e.g., Japan, Philippines, China, Taiwan).
  - **Cyclones** – In the Southwest Indian Ocean (off the coast of Africa, Madagascar), the Southeast Indian Ocean, and the Southwest Pacific Ocean.
  - **Willy-Willies** – An informal term used for tropical cyclones in Australia.

#### Reasons behind Typhoon Yagi becoming the strongest storm in Asia

- **Warm waters of South China Sea**
  - Typhoon Yagi started as a tropical storm in the western Philippine Sea. It **made landfall in the Philippines and started to weaken**.
  - However, due to unusually warm waters in the South China Sea, the storm intensified again.
  - Later, it **became a Category 5 typhoon with peak maximum sustained winds of 260 kmph**.
    - Typhoon Yagi is one of four Category 5 storms recorded in the South China Sea, after **Pamela in 1954, Rammasun in 2014, and Rai in 2021**.
  - The storm was subsequently downgraded to a tropical depression but still brought heavy rains last week in countries such as Myanmar, where it triggered severe floods around the remote capital, Naypyidaw.
- **Role of climate change**
  - Scientists are still debating how climate change affects tropical cyclones, as many factors influence storm formation and development.
  - However, there is **agreement that rising global temperatures are making tropical cyclones more intense**.
  - A recent study suggests that in Southeast Asia, **cyclones are now forming closer to coastlines, intensifying faster, and lingering longer over land**.
  - This is likely due to warmer sea surface temperatures, which have increased by nearly 0.9°C since 1850.

- **Hotter oceans fuel storms with more water vapor and heat, leading to stronger winds, heavier rainfall, and increased flooding when storms make landfall.**

### **Operation Sadbhav by India**

- India launched **Operation Sadbhav to provide humanitarian assistance and disaster relief (HADR) to Laos, Myanmar and Vietnam** that have been hit by severe flooding caused by Typhoon Yagi.
- India has committed \$1mn worth of flood relief assistance to Vietnam and \$1,00,000 worth of assistance to Laos.
- **India has been among the first responders in providing HADR to the region.**
- This Operation is part of India's broader effort to contribute to HADR within the ASEAN region, in line with its longstanding Act East Policy.

## **5. Port Blair renamed as Sri Vijaya Puram**

### **Why in news?**

The **Centre has decided to rename Port Blair as Sri Vijaya Puram**. This move is aimed at **shedding the colonial legacy associated with the former and to recognise Andaman and Nicobar Islands' contribution to the Indian freedom struggle.**

The decision to give an Indian name to the Andaman and Nicobar capital follows nearly six years after the Centre, in a move to honour Netaji Bose, renamed three islands of the Union territory. While **Ross Island** was rechristened as **Subhash Chandra Bose Dweep (island)**, **Neil Island** was renamed **Shaheed Dweep** and **Havelock Island** as **Swaraj Dweep**.

### **Process to rename a state (the term 'state' is inclusive of states and union territories)**

- **Constitutional provision**
  - The Parliament has the power to change the name of a state.
  - The Constitution of India gives the parliament power to alter the name of a state under Article 3.
    - **Article 3 of the Constitution explicitly lays down a procedure to alter the area, boundaries, or name of a state.**
- **Proposal**
  - The process of renaming of a state can be initiated by **either the Parliament or the state assembly**.
    - The state legislature sends a proposal in the form of a resolution to the Central government.
  - The **bill cannot be presented without a recommendation from the President**, who then refers it to the state legislature for their views.
- **Procedure**
  - States which are going to get affected by such changes, the legislation of that state must be presented with the bill.
  - The State Legislature may present its views on the bill within the prescribed time period.
  - The **views or suggestions of the State Legislature are not enforceable against the President or the Parliament**.
    - **If Parliament wants, it can dismiss the opinion of the state legislature.**
  - After receiving the suggestions of the State Legislative Assembly or after the expiration of the limited time period the bill goes back to the Parliament.
  - Then the bill gets further deliberated upon in the Parliament.
- **Passing of the bill**
  - The bill like any ordinary bill must be passed with a **simple majority of 50%+1 vote**.
  - The bill is then sent to the President for approval. After the said bill gets approved, it becomes a law and the name of the state stands modified.

### **Colonial background of Port Blair**

- **Origins of Port Blair: Named After Lieutenant Archibald Blair**
  - The **city of Port Blair is the entry point of the Andaman and Nicobar Islands**.
  - Originally a fishing hamlet, it was named after Lieutenant Archibald Blair, a British naval officer who served in the early 18th century.

- In December 1778, Blair embarked on his first surveying expedition to the Andaman Islands from Calcutta with two ships, **Elizabeth and Viper**.
- The voyage, lasting until April 1779, took Blair around the west and east coasts of the islands, where he discovered a natural harbour.
- Initially, he named it Port Cornwallis, after Lord William Cornwallis. The island was later renamed in Blair's honour.
- Blair's career was marked by significant contributions to British colonial expansion, particularly in the Andaman and Nicobar Islands.
- **Establishment of a Penal Colony in 1789**
  - In 1789, the Government of Bengal founded a penal colony on Chatham Island, in the Great Andaman southeast bay, naming it after Blair.
    - This was part of a broader British strategy to control the region.
  - However, the British had abandoned by 1796 because of disease.
- **Blair's Role in Surveying and Developing the Islands**
  - Blair surveyed the Andaman and Nicobar Islands, helping establish early British administration.
  - His efforts in mapping the area laid the foundation for Port Blair to become a colonial hub, vital for **military, administrative, and trade activities**.
  - His work helped the British exert control over the islands and integrate them into their maritime network.
- **Establishment of new penal colony**
  - The Revolt of 1857 resulted in a large number of prisoners for the British, prompting the immediate renovation and resettlement of Port Blair as a penal colony.
  - The first batch of 200 prisoners arrived in March 1858.
- **Cellular Jail**
  - The British built the Cellular Jail, also known as Kala Pani (Black Waters), to house Indian convicts, mostly political prisoners, in solitary confinement.
    - With the strengthening of the Indian Independence Movement in the late 19th century, a huge cellular jail was established here by 1906.

#### **Port Blair's connection with the imperial Cholas and Srivijaya**

- **Used as a strategic base by the Chola emperor**
  - Srivijaya was the ancient name of an empire that had its base in Sumatra, with influence across South East Asia.
  - It was also instrumental in the expansion of Buddhism.
  - The empire was supposed to have declined around the 11 century AD after a series of naval raids by the Cholas on its ports.
    - Historical records suggest that the Andaman Islands were used as a **strategic naval base by the Chola emperor Rajendra I** in the 11th century.
    - It was used to **launch an attack on the Srivijaya Empire, located in present-day Indonesia**.
    - Chola invasion of Srivijaya was unique, marking a rare conflict in India's otherwise peaceful relations with Southeast Asia.
    - Scholars suggest that the attack was either due to Srivijaya obstructing Chola trade or Rajendra I's ambition to extend his empire and enhance his prestige.
    - American historian G.W. Spencer views the attack as part of Chola expansionism.
- **Inscription at Thanjavur and the name of Nicobar Island**
  - As per an inscription found at Thanjavur dated to 1050 CE, the Cholas referred to the island as **Ma-Nakkavaram** land (great open/ naked land), which possibly led to the modern name of Nicobar under the British.
- **A Tribute to Independent India**
  - Renaming Port Blair to Sri Vijaya Puram is seen as a fitting recognition of the city's contribution to the making of a new Independent India, moving away from its colonial past.

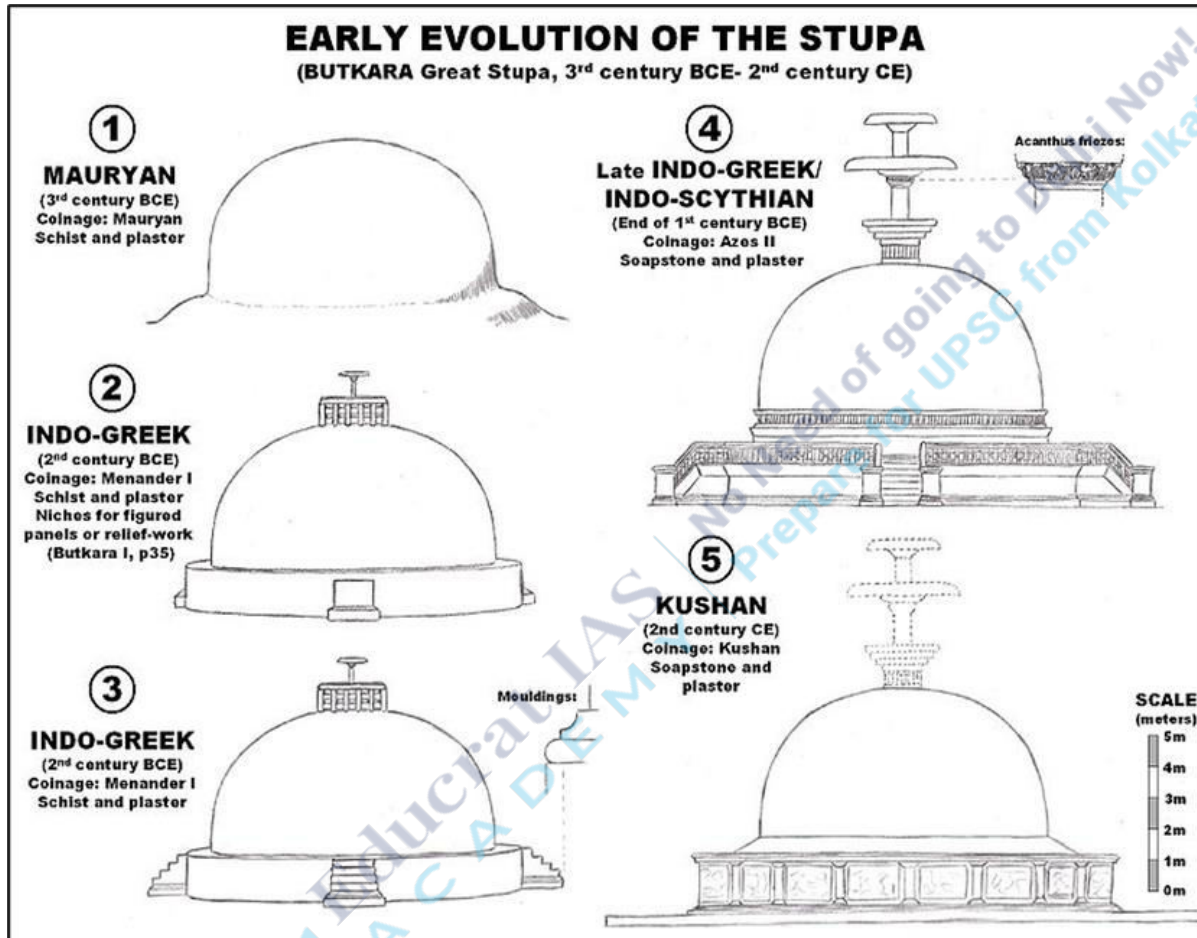
## 6. The Great Stupa of Sanchi

### Why in News?

During his recent visit to Germany, the External Affairs Minister of India paid a visit to the replica of Sanchi's Great Stupa's East Gate standing in front of Humboldt Forum Museum in Berlin.

### What is a Stupa?

- **Meaning:** In Buddhism, a **stupa** is a mound-like or hemispherical structure containing relics (typically the remains of Buddha and other Buddhist monks or nuns) that is used as a place of meditation.
- **Origin:** Stupas were pre-Buddhist burial mounds in ancient India. They had no religious significance and were simply memorials that were less elaborate and conspicuous than they are today.
- **Structure:**

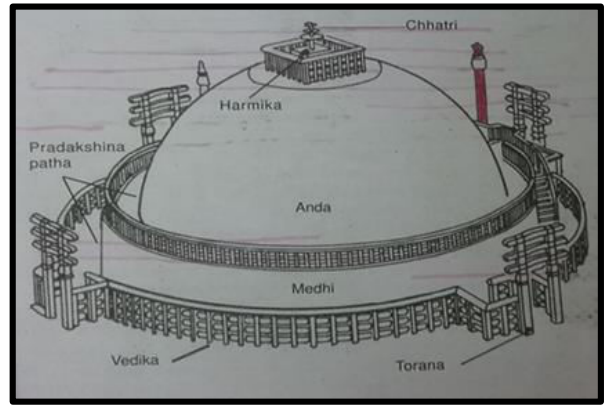


- **Development:**
  - **Expansion under Ashoka (250 BCE):** According to Buddhist tradition, **Emperor Ashoka recovered the relics of the Buddha from the earlier stupas** and erected 84,000 stupas to distribute the relics across India.
  - **Decorated stupas (from 125 BCE):** Stupas were soon to be richly decorated with sculptural reliefs. **For example**, Bharhut (115 BCE), Bodh Gaya (60 BCE), Mathura (125–60 BCE), Sanchi (for the elevation of the toranas), etc.
  - **Development in Gandhara (3rd century BCE - 5th century CE):** Since Buddhism spread to Central Asia, China, Korea and Japan through Gandhara, the stylistic evolution of the Gandharan stupa was very influential.
- **Significance:** It is thought that the **temple** in the shape of a truncated pyramid may have derived from the design of the stepped stupas that developed in Gandhara. **The Mahabodhi Temple in Bodh Gaya is one such example.**

## The Great Stupa of Sanchi:

- **About:**

- Commissioned in the **3rd century BCE by Emperor Ashoka**, it is the oldest stone structure in India and is considered one of the best-preserved groups of Buddhist monuments in the country.
- It was built over the relics of Buddha and his two disciples - **Sariputra and Maudgalyayan**.
- The most recent construction in Sanchi can be dated to as late as the 12th century CE, after which the site was abandoned.
- British General Henry **Taylor** rediscovered the Sanchi Stupa in **1818** and Alexander Cunningham led the first formal survey and excavations at Sanchi in 1851.
- The site was restored to its present condition by ASI director-general John Marshall in the 1910s with funding from the begums of nearby Bhopal.
- It was designated as a **UNESCO World Heritage Site in 1989**.



- **Location:** It is located on a hilltop at Sanchi Town in Raisen District of the State of **Madhya Pradesh**.
- **Significance:** It provides a broad and instructive field for researching the origins, development, and decline of Buddhist art and architecture in India.
- **Gateways/ Toranas of the Great Stupa**
  - While the original stupa was a plain hemispherical structure crowned by a chhatra (parasol), **the 4 ornamental gateways or toranas** (oriented to the four cardinal directions) were constructed in the first century BCE
  - These were constructed within a few decades of each other during the reign of the **Satavahana**
  - These gateways are made of two square pillars adorned with beautiful sculptures depicting scenes from the Buddha's life (not the Buddha in his human form) and stories from the **Jataka**
  - The art impresses immensely by its rhythm, symmetry, visual splendour and exquisite treatment of the flower and plant elements.

## The East Gate of the Sanchi Stupa and its Replica:

- **Features:**

- **The upper architrave of the gate** represents the seven Manushi Buddhas (previous Buddhas, with the historical Buddha being the latest incarnation).
- **The middle architrave** depicts the scene of the Great Departure, when prince Siddhartha leaves Kapilavastu to live as an ascetic in search of enlightenment.
- **The lower architrave** depicts Emperor Ashoka visiting the Bodhi tree under which the Buddha attained enlightenment.
- **Other decorative elements** include the shalabhanjika (a fertility emblem represented by a yakshi grasping the branch of a tree), elephants, winged lions, and peacocks.



- **Why is the East Gate the most famous of the Sanchi toranas in Europe?**

- There is a **historical reason** behind this. The East Gate was cast in plaster by Lieutenant Henry Hardy Cole for the Victoria and Albert Museum (London, UK) in the late 1860s.
- Later, this cast was replicated and displayed all over Europe. The latest Berlin replica too traces its origin to this original cast.

## 7. Mission Mausam

## Why in the News?

The Union Cabinet approved a mission to upgrade the capabilities of India's weather department in forecasting, modelling and dissemination. Mission Mausam will have a budget of ₹2,000 crore for the first two years of its implementation.

## About Mission Mausam:

- The Union Cabinet, chaired by Prime Minister Narendra Modi, has approved the ambitious Mission Mausam with an outlay of **₹2,000 crore over two years**.
- This initiative, led by the Ministry of Earth Sciences (MoES), **aims to revolutionize India's capabilities in weather and climate science, research, and services**.

## Objectives of Mission Mausam:

- **The key objectives of the mission include:**
  - **Improving Weather Prediction Accuracy:** By utilizing advanced technologies, Mission Mausam aims to provide highly accurate and timely weather and climate forecasts.
  - **Strengthening Climate Resilience:** The mission will equip various stakeholders, including citizens and last-mile users, to better tackle extreme weather events and the impacts of climate change.
  - **Broadening Capacity in Weather Sciences:** Through research and development, the mission will strengthen India's capability in atmospheric sciences, including weather modelling, forecasting, and surveillance.

## Key Focus Areas:

- Mission Mausam will focus on several critical areas that impact India's economy and public safety:
  - **Monsoon Forecasts:** Enhanced predictions for the monsoon season, critical for agriculture and water management.
  - **Air Quality Alerts:** Providing accurate air quality forecasts to help manage pollution.
  - **Extreme Weather Events:** Timely alerts for cyclones, floods, and other extreme weather conditions.
  - **Weather Interventions:** Techniques for managing fog, hail, and rain to minimize disruptions in daily life and business activities.

## Technological Advancements Under Mission Mausam:

- Mission Mausam will leverage cutting-edge technologies to enhance India's weather forecasting systems:
  - **Advanced Observation Systems:** The mission will deploy next-generation radars, satellite systems, and sensors to capture real-time data.
  - **High-Performance Computing:** Supercomputers will be integrated into the system to process vast amounts of data efficiently.
  - **Artificial Intelligence (AI) and Machine Learning (ML):** AI and ML technologies will be used to predict weather patterns with higher precision.
  - **Earth System Models:** Improved models will help forecast a variety of weather conditions, including monsoon patterns, cyclones, and extreme weather events.
  - **GIS-Based Automated Decision Support Systems:** These systems will provide real-time data dissemination and alerts.

## Sectors Benefiting from Mission Mausam:

- The mission will have a widespread impact across multiple sectors in India, including:
  - **Agriculture:** Accurate weather forecasts will help farmers plan crop cycles and reduce losses due to unpredictable weather.
  - **Disaster Management:** Early warnings and accurate predictions will enhance disaster preparedness and reduce the impact of natural calamities.
  - **Defence and Aviation:** Real-time weather data will support operations in defense and aviation by ensuring safer travel and military operations.
  - **Environment and Health:** Better environmental monitoring will contribute to sustainable development, while improved air quality forecasts will protect public health.



- **Transport and Energy:** Weather forecasts will aid urban planning, road transport, offshore operations, and energy production, especially in renewable sectors like wind and solar power.

#### Implementing Institutions:

- Mission Mausam will be spearheaded by three key institutes under the Ministry of Earth Sciences:
  - **India Meteorological Department (IMD):** Responsible for daily weather forecasts and warnings.
  - **Indian Institute of Tropical Meteorology (IITM):** Engaged in tropical weather and climate research.
  - **National Centre for Medium-Range Weather Forecasting (NCMRWF):** Specializes in medium-range weather forecasting.
- These institutions will be supported by other MoES bodies such as the **Indian National Centre for Ocean Information Services (INCOIS)**, **National Centre for Polar and Ocean Research (NCPOR)**, and **National Institute of Ocean Technology (NIOT)**.

#### Conclusion:

Mission Mausam is a **transformative step towards strengthening India's weather and climate resilience**. By harnessing cutting-edge technology and international collaborations, it **will enhance the country's ability to manage extreme weather events, making India a global leader in climate sciences**.

Through this initiative, various sectors of the Indian economy will benefit from more accurate and reliable weather data, driving better decision-making and planning for a sustainable future.

## 8. Challenges to Road Safety in India

#### Background:

- Road safety remains a critical public health issue in India, with a high number of fatalities and injuries resulting from road accidents every year.
- The "**India Status Report on Road Safety 2024**," prepared by the TRIP Centre at **IIT Delhi**, sheds light on the slow progress made in reducing road accident deaths and emphasizes the need for focused interventions.
- This article delves into the key findings of the report, the current state of road safety in India, and potential strategies for improvement.

#### The Current State of Road Safety in India:

- **Disparities in Road Accident Death Rates:**
  - The report highlights significant disparities in road accident death rates across different states in India.
  - Some states, such as **Tamil Nadu, Telangana, and Chhattisgarh, report high death rates of over 17 per 100,000 people**.
  - On the other hand, states like **West Bengal and Bihar have much lower rates, around 5.9 per 100,000 people**.
  - Despite improvements in other sectors, road traffic injuries continue to be a major cause of death and health loss in India.
  - **In 2021, road injuries were the 13th leading cause of death and the 12th leading cause of health loss**, as measured by Disability-Adjusted Life Years (DALYs).
  - Alarming, in six states, **including Uttar Pradesh and Rajasthan, road injuries ranked among the top ten causes of health loss**.
- **Vulnerability of Motorcyclists and Pedestrians:**
  - **Motorcyclists, pedestrians, and cyclists** are particularly vulnerable to road accidents in India.
  - The report reveals **that two-wheeler riders, in particular, face high risks, with low helmet usage contributing significantly to fatalities**.
  - Shockingly, in only seven states, more than half of two-wheeler riders wear helmets, despite the fact that helmets can drastically reduce the risk of death and serious injury.
  - **Trucks are another major cause of accidents**. They are often involved in fatal crashes, contributing to the high number of deaths on India's roads.
- **Lack of Road Safety Measures:**

- Most Indian states are struggling to implement basic traffic safety measures. **Traffic calming mechanisms, road markings, and signage are often lacking, especially in rural areas.**
- Furthermore, only a few states have conducted audits of their highways to assess road safety, leaving many stretches of road without adequate safety infrastructure.
- **Trauma Care and Response:**
  - **The inadequacy of trauma care facilities is another significant issue.** In many parts of India, especially rural areas, access to timely medical care after a road accident is limited.
  - This **lack of infrastructure contributes to higher fatality rates**, as victims do not receive critical care quickly enough.

#### **Importance of Crash Surveillance:**

- One of the major challenges in improving road safety is the **lack of a robust national crash surveillance system.**
- Currently, **road safety data in India is compiled from First Information Reports (FIRs) filed at police stations**, which are then aggregated at district, state, and national levels.
- However, this system only allows for basic analyses and often contains inaccurate information.
- **The report calls for the establishment of a comprehensive national database for fatal crashes**, which would allow for better analysis of road safety risks and more effective interventions.
- Such a system would provide policymakers with the tools needed to identify specific risk factors and evaluate the success of road safety programs.

#### **India's Global Road Safety Standing:**

- When compared to developed countries, **India's road safety performance is alarming.**
- In 1990, an Indian was 40% more likely to die in a road accident than someone in countries like Sweden. By 2021, this figure had risen to a staggering 600%.
- While **Scandinavian countries have excelled in road safety governance, India's progress has been slow, leading to a sharp rise in road fatalities.**
- The report also questions whether simply equipping vehicles with advanced safety features is enough to solve India's road safety problem.
- Since two-wheeler riders, pedestrians, and cyclists account for the majority of fatalities, focusing on vulnerable road users is critical.

#### **Way Forward - Strategies to Improve Road Safety:**

- **Scale-Up of Road Safety Interventions:**
  - The report emphasizes the need for both central and state governments to prioritize road safety interventions.
  - This includes scaling up efforts to implement road safety measures such as **traffic calming, proper signage, and helmet enforcement**, especially in rural areas where these measures are often neglected.
- **Establishment of a National Crash Database:**
  - Creating a national database for road crashes, with public access, is essential for understanding the specific risks faced by different road users and the effectiveness of the interventions implemented by the states.
  - This would allow for more accurate data collection and enable policymakers to tailor interventions based on real-time information.
- **Improving Trauma Care Infrastructure:**
  - **Strengthening trauma care facilities and ensuring quicker medical responses after accidents** is crucial for saving lives.
  - Investments in healthcare infrastructure, particularly in rural areas, can make a significant difference in reducing fatalities from road accidents.

#### **Conclusion:**

- India's road safety challenge is multifaceted and requires urgent attention.
- The **"India Status Report on Road Safety 2024"** calls for a **differentiated, state-specific approach to tackling these challenges.**
- By prioritizing road safety interventions, establishing a national crash database, and improving trauma care, India can make meaningful progress toward reducing road fatalities and ensuring safer roads for all.

## 9. Uncommon Cyclones in the Arabian Sea

### Background:

- The **North Indian Ocean plays a crucial role in influencing India's weather patterns, especially during the summer monsoon.**
- It supplies a significant amount of moisture, which is critical for the monsoon rains.
- Despite this, the region experiences fewer cyclones compared to other oceanic basins globally.
- This article analyzes the unique nature of the North Indian Ocean, how climate change is impacting it, and the recent developments concerning cyclones in the region.

### Why is the Indian Ocean Unique?

- The Indian Ocean stands out due to its complex climate interactions. It is **connected to both the Pacific and Southern Oceans through "oceanic tunnels".**
- The Pacific Ocean brings warm water into the Indian Ocean, while the Southern Ocean brings cooler water.
- This unique combination leads to varied sea temperatures, which in turn impact monsoon winds and cyclogenesis (the formation of cyclones).

### Monsoonal Influence on Cyclogenesis:

- The **Arabian Sea** and the **Bay of Bengal**, both parts of the Indian Ocean, warm up significantly before the monsoon.
- The **Bay of Bengal, in particular, becomes a hotbed for atmospheric convection**, which leads to rainfall and low-pressure systems.
- These systems, however, rarely turn into cyclones because of a phenomenon known as **"vertical shear"**.
- This shear strips cyclones of their energy, especially during the monsoon season.

### Impact of Climate Change on the Indian Ocean:

- Climate change is significantly altering the Indian Ocean's dynamics.
- Increased warming from the Pacific Ocean and changes in atmospheric conditions are causing rapid warming of the Indian Ocean itself.
- This warming is influencing the monsoon and leading to new challenges in terms of **cyclogenesis** and extreme weather events.
  - **Cyclogenesis refers to the process of cyclone formation and intensification, which occurs when favorable atmospheric and oceanic conditions come together.**

### The Role of the Indian Ocean in Global Warming:

- The **Indian Ocean acts as a clearinghouse for global ocean warming**, impacting other oceans like the Pacific and the North Atlantic.
- As the Indian Ocean warms, it **alters global ocean currents and affects climate patterns across the world.**
- This has had a direct impact on cyclogenesis, contributing to the increasing unpredictability of cyclones in the region.

### Cyclone Seasons in the North Indian Ocean:

- The **North Indian Ocean is unique** in that it has two distinct cyclone seasons, one **before the monsoon** and one **after**, unlike other regions of the world, which typically experience only one cyclone season.
- During the pre-monsoon season, the **Arabian Sea experiences less cyclone activity due to cooler sea temperatures and limited convection.**
- On the other hand, the **Bay of Bengal remains more active during both seasons.**

### Cyclones in the Arabian Sea and Bay of Bengal:

- The **Arabian Sea sees fewer cyclones compared to the Bay of Bengal.**
- This is due to **lower convective activity**, stronger wind shear, and cooler sea temperatures, especially after the monsoon season.

- While the number of cyclones in the Bay of Bengal has remained relatively stable, the **Arabian Sea has seen a slight increase in cyclone activity since 2010, although it has been calm in recent years.**

#### **Cyclone Asna:**

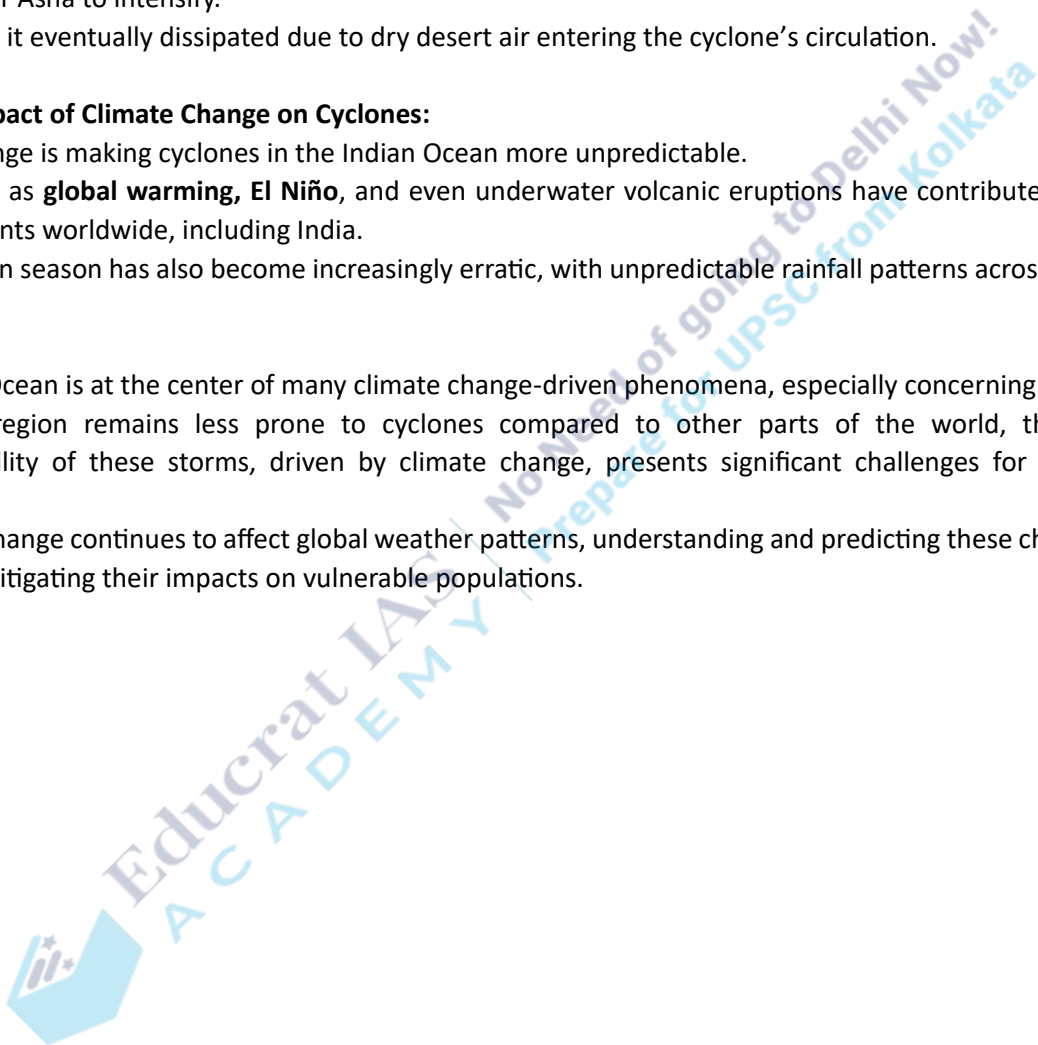
- It was an unusual cyclone that formed in August 2023, marking the **first North Indian Ocean cyclone in August since 1981.**
- What made it particularly unusual was that it originated from a land-based low-pressure system.
- Such systems typically form over the Bay of Bengal and bring heavy monsoon rains to India.
- However, this particular system transitioned into a full-fledged cyclone after moving into the Arabian Sea.
- **Unusual Nature of Asna:**
  - The transition of this low-pressure system into a cyclone over land and its subsequent growth over the Arabian Sea was unexpected.
  - The warming Arabian Sea, fueled by global warming and regional weather patterns, provided the necessary energy for Asna to intensify.
  - However, it eventually dissipated due to dry desert air entering the cyclone's circulation.

#### **The Broader Impact of Climate Change on Cyclones:**

- Climate change is making cyclones in the Indian Ocean more unpredictable.
- Factors such as **global warming, El Niño**, and even underwater volcanic eruptions have contributed to extreme weather events worldwide, including India.
- The monsoon season has also become increasingly erratic, with unpredictable rainfall patterns across the country.

#### **Conclusion:**

- The Indian Ocean is at the center of many climate change-driven phenomena, especially concerning cyclones.
- While the region remains less prone to cyclones compared to other parts of the world, the increasing unpredictability of these storms, driven by climate change, presents significant challenges for India and its neighbors.
- As climate change continues to affect global weather patterns, understanding and predicting these changes will be crucial for mitigating their impacts on vulnerable populations.



## General Studies II

### 1. New draft guidelines on passive euthanasia

#### Why in news?

The '**Draft Guidelines for Withdrawal of Life Support in Terminally Ill Patients**,' was released by the **Union Health Ministry**. Feedback and suggestions have been invited from the stakeholders on the draft by October 20.

While doctors have been informally advising families to withdraw care for terminal patients, there was no formal legal framework.

#### Euthanasia

- **About**

- It is defined as the **hastening of death of a patient to prevent further sufferings**.

- **Types**

- **Active Euthanasia**

- **Active euthanasia refers to the physician deliberate act, usually the administration of lethal drugs, to end an incurably or terminally ill patient's life.**
- There are three types of active euthanasia, in relation to giving consent for euthanasia, namely:
  - **Voluntary euthanasia** – at patient request,
  - **Non voluntary** – without patient consent,
  - **Involuntary euthanasia** – patient is not in a position to give consent.

- **Passive Euthanasia**

- **Passive euthanasia refers to the intentional withholding or withdrawal of medical treatments or life-sustaining interventions, allowing a person to die naturally from their underlying condition.**
- This can include stopping treatments like **ventilators, feeding tubes, or medications that keep the patient alive.**
- Decisions for passive euthanasia are typically made based on the patient's wishes, advance directives, or through family members and healthcare proxies when the patient cannot make decisions themselves.

- **Legality in India**

- **Passive euthanasia**

- A five-judge bench of the Supreme Court in **Common Cause vs Union of India (2018)** recognised a person's **right to die with dignity**.
- It said that a **terminally ill person can opt for passive euthanasia and execute a living will to refuse medical treatment**.
- The Court permitted an individual to draft a living will specifying that she or he will not be put on life support if they slip into an incurable coma.
- The Court recognised **the right to die with dignity as a fundamental right and an aspect of Article 21 (Right to Life)**.

- **Active euthanasia**

- **In India, active euthanasia is a crime.** Only those who are brain dead can be taken off life support with the help of family members.

- **Legality in other parts of the world**

- Euthanasia is legal in several countries. **Euthanasia is legal in the Netherlands, Belgium, Luxembourg, and Spain.**
- **Switzerland allows assisted suicide.**
- Canada permits both euthanasia and assisted suicide, while certain U.S. states, such as Oregon, Washington, and California, allow assisted suicide under strict regulations. **Colombia has legalized euthanasia.**

- Each country or region has specific criteria, such as terminal illness or unbearable suffering, that must be met for euthanasia or assisted suicide to be performed legally.

### Draft guidelines on passive euthanasia

- **Defined terminal illness**
  - The draft has defined terminal illness as an irreversible or incurable condition from which death is inevitable in the foreseeable future.
- **Based on four conditions**
  - The **guidelines for withdrawing or withholding medical treatment in terminally ill patients are based on four key conditions:**
    - The individual has been declared brainstem dead.
    - There is a medical assessment that the patient's condition is advanced and unlikely to improve with aggressive treatment.
    - The patient or their surrogate has provided informed refusal to continue life support after understanding the prognosis.
    - The procedure follows the directives set by the Supreme Court.
- **Allow patients to decide on life support and resuscitation**
  - Developed by AIIMS experts, these guidelines allow patients to decide on life support and resuscitation.
  - They also permit the withdrawal of supportive care such as ventilation or dialysis if a patient is brain dead, unlikely to benefit from further intervention, and if the patient or surrogate refuses care.
- **Provisions related to advance medical directives**
  - The **guidelines also mention advance medical directives, where individuals document their treatment preferences in case they lose decision-making capacity.**
  - The physician, upon deeming life-sustaining treatments inappropriate, will refer the case to a primary medical board for review.
  - If the board agrees, a shared decision is made with the family, and a secondary medical board's approval is required before withdrawing support.

## 2. How can the Judiciary Discipline Judges?

### Why in News?

A Bench of the five senior-most Supreme Court judges headed by Chief Justice of India (CJI) expressed serious concern about **objectionable comments made by a Karnataka High Court Justice** (V Srishananda).

### Comments Made by the Karnataka HC Judge:

- During a hearing, he had referred to a particular locality of Bengaluru as being in Pakistan. In another hearing, he had made an objectionable comment against a female lawyer.
- Though the SC withdrew its intervention after the judge submitted an apology, **even a slight reprimand** from the apex court to a judge of a constitutional court is **uncommon and conveys a powerful message.**
- The situation also **highlights the constitutional limitations** on how the judiciary can discipline judges.

### Watchdog of the Judges of Constitutional Courts:

- **The Constitution of India [Article 124(4)]:**
  - A judge of the SC (or any HC) can be **removed from office only by an order of the President passed after an address by each House of Parliament** supported -
    - By a majority of the total membership of that House and
    - By a majority of not less than two-third of the members of the House present and voting
  - And has been presented to the President in the same session for such removal on the ground of **proved misbehaviour or incapacity.**
- **Significance of the above provision:** It gives a great degree of protection to the judges to ensure that they can **exercise their powers without fear of interference from the executive.**
- **Issues with the above provision - Impeachment or nothing:**

- **The impeachment**, which is a political process, is the **only recourse** to dealing with errant judges.
- “Proved misbehaviour” or “incapacity” are the **only two grounds for removal of a judge** of the constitutional court.
- **The level of political consensus required** to pass an impeachment motion, makes the standard for impeachment very high.

#### Previous Instances of Impeachment Proceedings Against the Judges:

- **Only five instances of impeachment proceedings in history:**
  - **Against Justice V Ramaswami (SC, 1993),**
  - **Justice Soumitra Sen (Calcutta HC, 2011),**
  - **Justice J B Pardiwala (Gujarat HC, 2015),**
  - **Justice C V Nagarjuna (HC of Andhra Pradesh and Telangana, 2017), and**
  - **Then CJI Justice Dipak Misra (2018).**
- **Results of these proceedings:** These proceedings were **never successful**. Justice Sen was impeached by Rajya Sabha and subsequently resigned.
- **Alternatives to impeachment:** Over the years, the SC has created substitute methods of disciplining judges because, under the current legal framework, the alternative to impeachment is to just turn a blind eye.

#### Judicial Interventions to Discipline Judges:

- **Judicial actions:**
  - **As the court of last resort, the SC’s word is final and binding.** This means that through judicial action, it can send a message to errant judges, even if such a power is not defined in the letter of the law.
  - **For example**, a five-judge Bench of the SC headed by then CJI Jagdish Khosla held Calcutta HC’s C S Karnan guilty of contempt of court, and **sentenced him to six months’ imprisonment in 2017.**
    - Karnan retired less than a month after the SC verdict, and was taken into custody to serve his sentence.
  - **This resulted in an uneasy precedent**, with many voicing concerns about one constitutional court disciplining the judges of another.
- **Transfer policy:**
  - **The SC Collegium**, comprising five senior-most judges of the apex court including the CJI, recommends the transfer of HC judges.
  - Given that the decisions of the Collegium are opaque, **this transfer policy can be deployed as a tool to discipline judges as well.**
  - **In 2010**, the then Karnataka HC judge (P D Dinakaran was facing allegations of land grabbing and corruption) was transferred to the Sikkim HC.
  - The move was **criticised as only “transferring corruption”** rather than dealing with it. However, Justice Dinakaran resigned in 2011.

### 3. India grapples with China Shock 2.0

#### Context:

**Global markets are facing a surge in Chinese exports, referred to as "China Shock 2.0," which has intensified trade tensions.** Major economies like the US, India, and others are responding with heightened tariffs to counter the influx of Chinese goods.

#### China Shock 1.0

- In the 2000s, there was a debate on whether China would become a capitalist powerhouse or retain its communist ideology.
- US President Bill Clinton supported China’s accession to the WTO, believing that economic integration would lead to political reform in Beijing and align it with values like economic freedom.
  - Clinton argued that China’s WTO membership would not only increase imports of American products but also foster democratic principles.
- However, the years **following China’s entry into the WTO became known as the "China Shock".**

- Cheap Chinese goods, driven by a large, inexpensive labor force, flooded global markets, leading to widespread manufacturing job losses internationally.
- This shock disrupted Western economies and had a detrimental impact on Indian manufacturing and trade as well.

### China's increasing share of global export

- **Statistics**

- China's share in global export market has increased by 1-7% in the last five years. From sub 14%, it has moved beyond 15.5% in last five years.
- Between July 2023 and July 2024 the exports of China have increased by \$18.8B (6.67%) from \$282B to \$301B, while imports increased by \$14.8B (7.33%) from \$201B to \$216B.
- Hence, it can be said that China's share of global exports has been increasing. **It is now the world's largest exporter and trading nation.**

- **Factors driving the renewed wave of goods exports by China**

- China's ambition to move up the export value chain to high-tech sectors such as **solar equipment, electric vehicles, and semiconductors.**
- Domestic demand slump, forcing China to export more aggressively.
- **Other supporting factors include:**
  - China's supporting industrial policies which revolve around tax incentives, subsidies and greater access to funds.
  - Increased focus on R&D also forms part of China's Industrial Policy.

- **Made in China 2025 strategy**

- Beijing's '**Made in China 2025**' strategy is a long-term plan to transform China into a global high-tech manufacturing leader by **2049**.
  - **Introduced in 2015, this strategy is aimed at:**
    - achieving 70% self-sufficiency in hi-tech industries by 2025,
    - competing with other manufacturing rivals by 2035, and
    - transforming the country into a global manufacturing powerhouse by 2049.
  - This involves promoting advanced sectors such as **electric vehicles, semiconductors, and renewable energy.**
  - Under this strategy, the government provides subsidies, including low-interest loans and tax breaks, to hi-tech companies.

- **Impact on India and Other Economies**

- IMF recently highlighted concerns about **China's external surpluses**, driven by industrial policies aimed at boosting exports amidst weak domestic demand.
- The IMF warned that this could lead to "**China Shock 2.0**", displacing workers and harming industrial activity in other countries.
- The rise in exports threatens local industries and global trade stability, escalating international trade tensions.
- In order to counter this surge, recently, the US has imposed significant tariff hikes on Chinese imports, aiming to curb the flood of products:
  - 100% duty on electric vehicles (EVs)
  - 50% duty on solar cells
  - 25% duty on steel, aluminum, EV batteries, and certain minerals

### India – China Trade Relation

- **Statistics**

- **China was the top supplier of goods to India in 2023-24**, accounting for imports valued at \$101 billion, while India exported goods worth \$16.65 billion.
- **India's imports from China grew at a much faster pace than from the rest of the world.**
  - This dependence grew so much that despite many economic restrictions on Chinese businesses following the Galwan clash in June 2020, imports from China surpassed a record \$100 billion in 2023-24.

- **Impact**



- For **India**, the impact is already evident, with **imports from China** rising by nearly **60%**—from **\$70 billion in FY19** to **\$101 billion in FY24**, according to official data.
- This surge could further strain India's manufacturing sector, trade balance and ultimately hurt India's ambition to become global power.
- **Steel Industry Struggles with Chinese Influx**
  - Despite slowing exports, **Chinese steel imports** have surged globally, including in India. Key statistics include:
    - India's **iron and steel exports** dropped nearly **19% year-on-year in August 2024** and **29.4%** during April-August 2024-25.
    - **Finished steel imports** from China to India hit a **seven-year high** in the first five months of FY24-25.
    - India's overall **finished steel imports** reached a **six-year high** of **3.7 million metric tons** between April and August 2024.
    - The surge in Chinese steel is eroding profits and threatening the stability of steel industries globally, particularly in Europe and India.
- **China's dominance in electronics**
  - India's **mobile phone exports** have surged over the past two years, driven by investments from global tech companies like **Apple**, which has expanded manufacturing in the country.
  - However, **India's reliance on Chinese imports** for electronic components remains largely unchanged.
  - In **FY24**, India imported:
    - Over **\$12 billion** worth of electronic components from **China**,
    - **\$6 billion** from **Hong Kong**, together accounting for more than half of India's total electronic component imports.
  - Despite growth in **electronics manufacturing**, India's dependence on China persists.
  - **Electronic components** import, valued at **\$34.4 billion**, were the **fifth-largest commodity** imported, following **crude oil, gold, petroleum products, and coal**, according to Ministry of Commerce data.
- **Strategy employed by India**
  - India is utilising both options:
    - imposing anti-dumping and anti-subsidy duties, and;
    - implementing quality control orders (QCO) to check imports of cheap items from China.
  - New Delhi is also considering collaborating with other Western countries to meet the challenge of Chinese hi-tech products capturing a lion's share of the global market.
- **Counter response by China - Blocking India's access to solar equipment**
  - The Economic Survey 2023-24 warned that in response to India's anti-dumping probe against Chinese entities, China has been quietly blocking India's access to solar equipment.
    - India aims to achieve **500 GW** of renewable energy capacity by **2030**.
    - However, **80%** of India's solar cells and modules still come from **China**, which dominates the global solar supply chain.

#### 4. Bilkis Bano case- Supreme Court dismisses Gujarat review plea

##### Why in news?

The **Supreme Court rejected the Gujarat government's plea to review its January 8 verdict, which had canceled the remission granted to 11 men convicted of raping Bilkis Bano and killing seven of her family members during the 2002 Gujarat riots.**

The Gujarat government contested certain "adverse" observations made by the court in the January verdict, arguing that such remarks should not have been made against the state. However, the court found no merit in the review plea and dismissed it.

##### What is Remission?

- **About**
  - **Remission is the complete ending of a sentence at a reduced point.**

- Remission is distinct from both furlough and parole in that it is a reduction in sentence as opposed to a break from prison life.
- **Constitutional Provisions**
  - Both the President and the Governor have been vested with sovereign power of pardon by the Constitution.
  - **Under Article 72**, the President can **grant pardons, reprieves, respites or remissions** of punishment or suspend, remit or commute the sentence of any person.
  - **Under Article 161**, a **Governor can grant pardons, reprieves, respites or remissions of punishment**, or suspend, remit or commute the sentence.
- **Statutory power of remission**
  - The Code of Criminal Procedure (CrPC) also provided for remission of prison sentences. This is because **prisons is a State Subject**.
    - Under **Section 432 of CrPC**, the 'appropriate government' may suspend or remit a sentence, in whole or in part, with or without conditions.
    - Under **Section 433 of CrPC**, any sentence may be commuted to a lesser one by the appropriate government.
    - This power is available to State governments so that they may order the release of prisoners before they complete their prison terms.
  - The **CrPC is now replaced by the Bharatiya Nagarik Suraksha Sanhita**.
    - **CHAPTER XXXIV of the BNSS 2023** deals with the powers of remission or commutation in certain cases under the following sections:
      - **Section 473** - Power to suspend or remit sentences.
        - The Central Government has the power to do so in cases where the sentence is for an offense against a law that comes under the executive power of the Union.
        - In other cases, the Government of the State where the offender is sentenced has the power to do so.
      - **Section 474** - Power to commute sentences. The appropriate Government can commute any punishment to any other punishment without the consent of the offender.
      - **Section 475** - Restriction on powers of remission or commutation in certain cases.
      - **Section 477** - State Government acting after concurrence with the Central Government in certain cases.
  - **Guidelines to be followed while granting Remission**
    - In '**Laxman Naskar v. Union of India**' (2000) case, the Supreme Court laid down five grounds on which remission is considered:
      - Whether the offence is an **individual act of crime that does not affect the society**;
      - Whether there is a chance of the crime being repeated in future;
      - Whether the convict has lost the **potentiality to commit crime**;
      - Whether any purpose is being served in keeping the convict in prison; and
      - **Socio-economic conditions of the convict's family**.
    - Also, convicts serving life sentences are entitled to seek remission after serving a minimum of 14 years in prison.

### What is Bilkis Bano Case?

- **About**
  - In the aftermath of the **Godhra riots in Gujarat in 2002**, Bilquis Bano and her family were attacked by a group of people.
  - Bilquis was brutally gangraped and seven of her family members were murdered.
  - Her case was taken up by the National Human Rights Commission (NHRC) and Supreme Court, which ordered an investigation by the CBI.
  - Due to persistent death threats, the trial was moved out of Gujarat to Mumbai where charges were filed against these people.
  - In January 2008, a special CBI court in Mumbai had sentenced the 11 accused to life imprisonment.
- **Release of these convicts**
  - In 2022, one of the convicts named Radheshyam Shah, after completing 15 years and four months of his life term, moved to the SC for early release.
  - In May 2022, the SC passed this case to the Gujarat government.

- It asked the Gujarat government to consider Shah's application for premature release, as per the state's 1992 remission policy.
- **On August 15, 2022, the Gujarat government released all 11 convicts in the gangrape case under its remission policy.**
- However, this decision sparked a major public backlash, and prompted petitions from opposition MPs.
- **Review petition by Bilkis Bano**
  - Bilkis Bano in 2022 filed an appeal in the Supreme Court to review the decision of the Gujarat government ordering release of the 11 gangrape convicts.
- **January 8 judgement of Supreme Court**
  - In response to the review petition filed by Bilkis Bano, the apex court, on January 8, **overturned** the Gujarat government's decision to release the 11 convicts.

#### Key highlights of the January 8 judgement by SC

- The Gujarat government was not the appropriate government to pass the remission order as the trial was held in Maharashtra.
  - **The exemption order lacks competence. Criminals can be released only by the state where they are tried.**
- The bench also held that the SC order of May 13, 2022 was obtained by fraud and suppression of facts.
- Gujarat government should have filed a plea seeking review of the 2022 order stating they are not the competent government.
- **The Supreme Court came down heavily against its own judgment in May 2022.**
  - In May 2022, the SC ruled that there cannot be a concurrent jurisdiction of two State governments on the issue of remission.
  - Premature release of a convict has to be considered in terms of the policy applicable in the State where the crime was committed
  - Hence, Gujarat government's remission policy was applied for the release of these convicts.
- The rule of law must be preserved unmindful of the ripples of the consequences.

#### News Summary- Supreme Court dismisses Gujarat review plea

- **About the news**
  - The Supreme Court dismissed the Gujarat government's review plea challenging its January 8 judgment that canceled the remission granted to 11 convicts in the Bilkis Bano case.
  - The **January judgment accused Gujarat of being complicit with one of the convicts, Radheshyam Shah, and held that the May 2022, order granting remission was obtained through fraud and suppression of facts.**
  - The Supreme Court also criticized Gujarat for not filing a review against the 2022 order sooner, which could have avoided further litigation.
- **Stand of Gujarat govt**
  - In its review plea, Gujarat argued that it was only complying with the 2022 Supreme Court directive to decide the remission application under its 1992 Remission Policy, though it consistently maintained that Maharashtra was the appropriate authority to decide.
  - The state rejected the court's accusation of "usurpation of power" and emphasized that it had no need to file a review petition as Bilkis Bano herself had done so, but her review was dismissed in December 2022.
  - The state further contended that it was not complicit in any fraud.

## 5. Clause 6 of Assam Accord

### Why in news?

After a meeting with the All Assam Students' Union (AASU), Assam Chief Minister initiated the process to implement **52 recommendations from the Justice Biplab Sarma Committee concerning Clause 6 of the Assam Accord.**

This action follows the finalization of the committee's report in February 2020.

However, 15 key recommendations, which require Constitutional amendments, will not be implemented for now. The Chief Minister stated that these will be discussed with the Centre at an appropriate time.

## Clause 6 of the Assam Accord

- **Background: Assam Accord (1985)**

- The Assam Accord was a **Memorandum of Settlement** signed between the **Rajiv Gandhi-led Union government** and the **All Assam Students' Union (AASU)**.
- This accord ended a **six-year-long agitation** against the entry of Bangladeshi migrants into Assam.
- The agreement, signed in **1985**, marked the conclusion of the Assam Movement.

- **Clause 6 of the Assam Accord**

- Clause 6 of the Assam Accord promises to provide Constitutional, legislative, and administrative safeguards to protect, preserve, and promote the cultural, social, linguistic identity, and heritage of the Assamese people.
- These safeguards aim to address concerns regarding the state's demographic and cultural integrity amidst the influx of migrants.

## Biplab Sarma Committee

- **Formation of the committee**

- In July 2019, the Union Home Ministry formed a **14-member committee**, chaired by **retired Assam High Court Justice Biplab Kumar Sarma**, to provide recommendations on implementing **Clause 6** of the Assam Accord.
- A key issue the committee addressed was defining "**the Assamese people**" eligible for the safeguards under Clause 6.

- **Submission of the report**

- The committee submitted its final report in **February 2020**.
  - However, instead of being presented to the Union Home Ministry, it was received by then Assam Chief Minister **Sarbananda Sonowal**.
- In **August 2020**, four committee members publicly released the confidential report.

- **Key Recommendations:**

- **Definition of Assamese People:** The committee suggested that "Assamese people" should include:
  - Indigenous Tribals
  - Other Indigenous Communities of Assam
  - Indian citizens residing in Assam on or before January 1, 1951, and their descendants
  - Indigenous Assamese People
- **Safeguards:** Based on this definition, the committee recommended reservations for "Assamese people" in **Parliament, the state Assembly, local bodies, and jobs**.

## Recommendations of the report to be implemented

- **Classification of Recommendations**

- **The committee's 67 recommendations are divided into three categories:**
  - 40 recommendations under the state government's jurisdiction
  - 12 recommendations requiring Centre's concurrence
  - 15 recommendations exclusively within the Centre's domain
- The 52 recommendations in the first two categories will be implemented by April 2025, with a roadmap to be submitted to AASU by October 25, 2024.

- **Acceptance of 1951 Cut-off Date**

- The Assam govt has accepted the **1951 cut-off date** for the specific recommendations of the Justice Biplab Sarma Committee report.
- However, the definition of "**Assamese people**" is limited to the context of the report's recommendations.

- **Land Safeguards**

- **Special Revenue Circles:** Designating areas where only Assamese people can own and transfer land.
- **Land Titles:** A three-year program to grant land titles to Assamese people who have long occupied land without proper documentation.
- **Char Areas Survey:** Surveying char areas (riverine regions) to treat newly formed chars as government land, prioritizing allocation to those affected by river erosion.

- **Language Safeguards**

- **Assamese as Official Language:** Retaining Assamese as the official state language per the **1960 Assam Official Language Act**, with provisions for local languages in certain regions.
- **Bilingual Government Documents:** Issuing all state government acts, rules, and orders in both Assamese and English.
- **Autonomous Language Council:** Establishing a council to preserve and promote indigenous languages of Assam.
- **Assamese in Schools:** Making Assamese a compulsory subject in all English medium schools up to Class VIII or Class X.
- **Cultural Heritage Preservation**
  - **Sattras (Neo-Vaishnavite Monasteries):** Setting up an autonomous body to oversee the development of sattras and provide them financial assistance.
  - **Cultural Complexes:** Building multipurpose cultural complexes in every district to preserve the cultural heritage of all ethnic groups.
- **Sixth Schedule Areas**
  - The autonomous councils of Assam's Sixth Schedule Areas, including the Bodoland Territorial Council, the North Cachar Hills Autonomous Council, and the Karbi Anglong Autonomous Council, will decide whether to implement the 52 recommendations.
  - These councils have certain legislative and judicial autonomy under the Sixth Schedule of the Constitution.

#### Recommendations that have been left out by the govt

- **Inner Line Permit**
  - Proposal for implementing an ILP for entry into Assam, similar to existing regulations in Nagaland, Arunachal Pradesh, Manipur, and Mizoram.
- **Reservations for Assamese People**
  - **Parliament and State Assembly:** 80-100% reservation of seats for Assamese individuals in Parliament and state Assembly, as well as in local bodies.
  - **Government Jobs:** 80-100% reservation in Assam government jobs.
  - **Private Sector Collaborations:** 70-100% reservation for vacancies in partnerships between the Assam government and private companies.
  - **Creation of an Upper House:** Proposal for establishing a Legislative Council in Assam, exclusively reserved for Assamese people.

## 6. India joins US-led Mineral Security Network

### Why in news?

India has formally joined the **Minerals Security Finance Network (MSFN)**, a US-led initiative focused on enhancing cooperation among members to secure supply chains for critical minerals. The announcement, made by the US State Department on the sidelines of the UN General Assembly, involves a pact signed by 14 countries and the European Union.

The MSFN is an extension of the Minerals Security Partnership (MSP), launched by the US in 2022. **India had already joined the MSP in June 2023.**

### China's strategy of restricting access to critical minerals

- **China blocking the access to critical minerals**
  - On **August 15, 2023, China announced restrictions on antimony exports**, a critical mineral for military and defense equipment, citing "national security."
  - The move, effective from September 15, was part of a broader pattern of counteractions in response to global efforts to reduce reliance on Chinese minerals.
- **China is using its dominant position**
  - **China dominates the global supply chains for critical minerals, controlling 60% of rare earth and critical minerals production** and 80% of their processing, making other nations, such as the U.S., EU, India, and Japan, strategically vulnerable.

- **Past instances where China weaponized its dominant position**

- China has previously weaponized its mineral dominance, as seen in 2010 when it halted rare earth exports to Japan after a maritime dispute.
- In **2023, China imposed further export restrictions on minerals like gallium, germanium, and graphite, in retaliation against U.S. export controls on advanced technology.**
- These actions signal China's willingness to leverage its control over critical minerals to counter U.S.-led efforts to diversify supply chains and reduce dependency on Chinese resources.
- China's actions aim to undermine Western efforts to decouple from its supply chains and hinder development in areas like submarines and fighter jets, which require large amounts of rare earth elements.
- This shift marks a departure from cooperation to coercion in China's foreign relations, signaling that mineral export controls will intensify as tensions with the West grow.

## MSP

- **About**

- In August **2022, US and 10 other nations agreed for this alliance known as MSP.**
- MSP is an **international alliance that aims to ensure a stable supply of critical minerals for a clean energy transition.**
- It focuses on minerals and metals that are essential for clean energy technologies, such as **lithium, cobalt, nickel, manganese, graphite, rare earth elements, and copper.**

- **Goals**

- **Sustainable supply chains:** The MSP works to create diverse, sustainable, and responsible supply chains for critical minerals.
- **Economic development:** The MSP aims to ensure that the production, processing, and recycling of critical minerals supports economic development.
- **Environmental, social, and governance (ESG) standards:** The MSP's members commit to high ESG standards.
- **Shared prosperity:** The MSP's members work to promote shared prosperity.

- **Members**

- Australia, Canada, Estonia, Finland, France, Germany, India, Italy, Japan, Norway, Republic of Korea, Sweden, United Kingdom, United States, and European Union.

## Minerals Security Finance Network (MSFN)

- **Background: need for MSFN**

- The creation of the MSFN reflects a growing need to **reduce dependence on countries like China for critical resources, particularly rare earth minerals.**
- Signatory nations emphasized that meeting the global demand for these minerals to support the clean energy transition requires collaboration between the public and private sectors.

- **About**

- **MSFN is a new initiative that originates from the MSP, a framework established by the US in 2022.**
- The network aims to bring together institutions from the Indo-Pacific region and Europe, promoting cooperation, information exchange, and co-financing.
- Under this, development finance institutions (DFIs) and export credit agencies (ECAs) from member nations will work together to enhance production capacity and resilience in mineral supply chains.

- **Countries that are part of this initiative**

- The **partnership includes 14 countries and the European Commission.**
- These are the USA, Australia, Canada, Estonia, Finland, France, Germany, **India**, Italy, Japan, the Republic of Korea, Norway, Sweden, the United Kingdom, and the EU.

- **India's participation**

- India's participation in this initiative is **aimed at diversifying and securing its supply of critical minerals from nations like Argentina, Chile, Australia, and select African countries.**
  - Kazakhstan, in Central Asia, is also being explored as a potential source for India's mineral requirements.
- China dominates rare earth production, controlling about 70% of global output, while **India seeks to establish itself in the lithium value chain.**

- **New Delhi is heavily dependent on the imports of critical minerals such as lithium, nickel, cobalt and copper, which resulted in an import cost of around ₹34,000 crore in FY23.**
- It is estimated that India's hunger for minerals will only grow, and so will the import cost, further increasing India's vulnerability.
- This partnership with the US-led network marks a critical step forward for India in its quest to reduce reliance on China for these minerals and build a robust, self-sustaining supply chain for its green energy initiatives.

## 7. SC Strengthening Law Against Child Pornography in India

### Why in News?

Marking a significant move in the fight against child exploitation, the Supreme Court of India emphasised that the consumption of sexually explicit content involving minors is a severe criminal offence under the **POCSO Act**.

The top court **overruled a controversial judgement by the Madras HC**, which held that passive consumption of child pornography did not constitute an offence under the POCSO Act or the Information Technology (IT) Act.

### The Protection of Children from Sexual Offences (POCSO) Act:

#### • About:

- It is the **first comprehensive law** in the country enacted in **2012** for dealing specifically with sexual abuse of children.
- Administered by the **Ministry of Women and Child Development**, the law is **intended to**
  - **Protect children from sexual assault**, sexual harassment and pornographic violations.
  - Establish Special Courts for such trials.
- In **2019**, the Act was amended to strengthen the penalties for specified offences in order to deter abusers and promote a dignified upbringing.

#### • Key provisions:

- **Gender-neutral legislation:** The Act defines a child as "any person" under the age of 18.
- **Non-reporting is a crime:** Any person in charge of an institution (excluding children) who fails to report the commission of a sexual offence involving a subordinate faces punishment.
- **No time limit for reporting abuse:** A victim may report an offence at any time, even years after the abuse has occurred.
- **Keeping victim's identity confidential:** The Act forbids the disclosure of the victim's identity in any form of media unless authorised by the special courts established by the Act.

#### • Concerns:

- **Such abuse is on the rise:** Particularly since the Covid-19 outbreak, when new forms of cybercrime have emerged.
- **Lack of awareness or knowledge:** On the part of minor girls, boys, parents and society as a whole.

### Examining the SC's Decision to Tighten the Law on Child Pornography:

- **The provision of the POCSO Act in question:** The Bench (led by the CJI) expanded the interpretation of **Section 15** of the POCSO Act, which deals with the "**Punishment for storage of pornographic material involving child**".
- **Section 15 of the POCSO Act:**
  - It punishes any person, who stores or possesses pornographic material in any form involving a child,
    - With an intention to share or transmit child pornography;
    - For commercial purposes, etc.
  - With a three-to-five-year jail sentence.
- **SC's verdict:**
  - Section 15 is not limited to punishing the sharing or transmitting of child pornographic material, and **could even be used to punish the "intent"** to commit such an act.
  - **For instance**, the court held that a failure to "delete or destroy or report" child pornography would allow the court to "indirectly" infer that the concerned individual intended to share or distribute it under Section 15.

- Overturning the Madras HC judgement, **the SC expanded the definition of “possession”** in child pornography cases to include cases -
  - Where the individual may not have physical possession of child pornographic material.
  - But they have the power to control the material in question and the knowledge of exercise of such control.
- The court termed this **“constructive possession”** and held that “viewing, distributing or displaying” such material would still amount to it being in the accused’s “possession” under Section 15.

#### **SC’s Recommendations to the Centre to Address the Issue of Child Pornography:**

- **Amend the POCSO Act:** To replace the term “child pornography” with “child sexual exploitative and abuse material” (CSEAM) to better reflect the nature of the crime.
- **Help victims to heal and reintegrate into society:** By providing psychological counselling, therapeutic interventions and educational support to victims.
- **Introducing cognitive behavioural therapy (CBT) programmes:** To help address the cognitive distortions that fuel such behaviour among offenders.
- **Promoting coordinated effort:** Among educators, health care providers, law enforcement and child welfare services to identify individuals with problematic sexual behaviours early and implement intervention strategies.
- **Raising awareness:** Public campaigns should aim to de-stigmatise reporting and encourage vigilance within the community.
- **Formation of an expert committee:**
  - To devise comprehensive programmes for health and **sex education** and increasing awareness of POCSO among children from an early age, and
  - To give effect to above suggestions.

## 8. With Recent decisions, Supreme Court Has Deepened Constitutional Idea of Personal Liberty

### **Context**

- **On December 6, 1948, the Constituent Assembly of India witnessed a heated debate** over a pivotal aspect of the emerging Constitution: the right to life and personal liberty under Article 21.
- **K. M. Munshi, a leading figure in the assembly, delivered a powerful speech advocating for the inclusion of due process protections in Article 21**, arguing that the right to life and liberty should not be at the mercy of ordinary laws.
- **Decades later, this vision seems to be vindicated through various judgments by the Supreme Court of India**, especially in recent years, as the court has reaffirmed the primacy of personal liberty and due process.

### **Historical Debate on Due Process and Personal Liberty**

- **The Philosophical Foundations of Due Process**
  - The **concept of due process is fundamentally rooted in the rule of law** and the protection of individual rights from arbitrary state actions.
  - In legal philosophy, **due process ensures that any deprivation of life, liberty, or property must follow established legal procedures**, and the state's power cannot be used without adequate checks.
  - In the context of India’s independence movement, **the demand for freedom from colonial oppression deeply resonated with the desire to enshrine personal liberties** into the new legal framework.
- **Munshi’s Argument: Ensuring Protections Against Arbitrary Laws**
  - In the Constituent Assembly, **K. M. Munshi emerged as a prominent advocate for incorporating due process rights into Article 21**, which governs the right to life and personal liberty.
  - His **argument was framed around the idea that fundamental rights should not be reduced to the whims of ordinary laws** passed by the legislature.
  - For Munshi, **the lack of explicit due process protection would allow future governments to erode personal liberties** under the guise of maintaining public order or national security.
  - Munshi **emphasised that personal liberty is too crucial to be subject to arbitrary or excessive state interference.**



- **Opposition to Due Process: Concerns of Administrative Efficiency**

- Despite the compelling case made by Munshi and his allies, **there was significant opposition to incorporating explicit due process protections into Article 21.**
- **A key figure in this opposition was N. Rau, the Constitutional Advisor**, who cautioned against the inclusion of due process on the grounds that it could paralyse administrative and legislative efficiency.
- **Rau, along with other members like Dr B.R. Ambedkar, recognized the need to strike a balance** between individual freedoms and the demands of governance in a complex, diverse, and newly independent nation.

### **The Role of Judicial Interpretation in Upholding Personal Liberty**

- **A. K. Gopalan v. State of Madras (1950)**

- The original text of Article 21 reads: **No person shall be deprived of his life or personal liberty except according to procedure established by law.**
- At first glance, **this provision appears to offer basic protection against arbitrary deprivation of life and liberty.**
- One of the earliest instances highlighting the limited interpretation of Article 21 was in the case of **A. K. Gopalan v. State of Madras (1950).**
- In this case, **the petitioner challenged his detention under the Preventive Detention Act**, arguing that his right to life and personal liberty had been violated.
- However, **the SC rejected the claim**, ruling that as long as the procedure laid down by law was followed, the deprivation of liberty was valid.
- This narrow interpretation focused purely on the formal legality of the process, rather than its fairness or substantive justice.
- **As a result, the scope of Article 21 was significantly constrained**, giving the state considerable leeway to impose restrictive laws without concern for individual rights.

- **The Turning Point: Maneka Gandhi v. Union of India (1978)**

- This case is widely regarded as a **watershed moment in Indian constitutional law**, as the **SC fundamentally reinterpreted the scope of Article 21**, embedding **due process** protections within it.
- The **case arose when the government, invoking its powers under the Passport Act, impounded the passport of Maneka Gandhi** without providing any reasons.
- Gandhi challenged this action, arguing that **it violated her right to personal liberty under Article 21, as well as her freedom of movement.**
- In its ruling, the Court dramatically expanded the interpretation of Article 21 by holding that the **procedure established by law** must be **fair, just, and reasonable**, and not arbitrary, oppressive, or fanciful.
- This **judgment reintroduced the due process concept into Indian law**, despite the framers' decision to avoid its explicit mention.

### **Expanding the Scope of Article 21: Judicial Activism and Human Dignity**

- **Francis Coralie Mullin v. The Administrator, Union Territory of Delhi (1981)**

- In this case, the SC ruled that the right to life under Article 21 includes the **right to live with dignity** and encompasses various rights essential for leading a meaningful life.
- The Court held that **personal liberty** means not only freedom from physical restraint, but also the right to personal autonomy and privacy.
- This **judgment was critical in establishing the principle that the right to life is more than mere survival** and includes the quality of life.

- **Bandhua Mukti Morcha v. Union of India (1984)**

- The expansion of Article 21's scope was further solidified in this case, where the Court recognised that the **right to life** includes the right to **livelihood**.
- The **Court held that any deprivation of livelihood**, which is essential for living a life of dignity, **would be considered a violation of Article 21.**
- This **interpretation of the right to life significantly broadened its protective ambit**, making it clear that the state must not only protect life from physical threats but also ensure that citizens can live with dignity and security.

- **The Right to Privacy: Justice K.S. Puttaswamy v. Union of India (2017)**

- **Another major development** in the expansion of personal liberty under Article 21 **came with the recognition of the right to privacy.**
- For years, **the issue of privacy remained a contentious one**, with courts reluctant to explicitly declare it a fundamental right.
- However, the situation changed with this **landmark case**, where the SC unequivocally declared that the **right to privacy** is an integral part of the right to life and personal liberty under Article 21.
- This **case arose in the context of the government's Aadhaar program**, which required citizens to link their personal information to a biometric identification system.
- **Recent Trends: Balancing Security Laws and Personal Liberty**
  - In recent years, the SC's commitment to protecting personal liberty has been tested in cases involving **national security laws** such as the **Unlawful Activities (Prevention) Act (UAPA)** and the **Prevention of Money Laundering Act (PMLA)**.
  - These laws, which impose stringent conditions for bail and allow for prolonged detention, often clash with the right to personal liberty.
  - However, **in several key rulings, the Court has reaffirmed the primacy of Article 21, even when dealing with such restrictive laws.**

### Conclusion

- Through its progressive interpretation of Article 21, **the SC has significantly enhanced the protection of personal liberty in India.**
- **By expanding the meaning of life and liberty** to include dignity, privacy, and autonomy, **the judiciary has ensured that these rights remain central to the country's constitutional framework.**
- Today, **Article 21 stands as a bulwark against arbitrary state action, and the courts continue to uphold its spirit**, ensuring that personal liberty remains at the heart of India's constitutional democracy.

## 9. How do Emergency Provisions Impact Centre-State Relations?

### Introduction:

- The recent surge in violence in Manipur has reignited discussions on the Centre-State relations in India, particularly regarding the use of emergency provisions.
- These provisions allow the central government to intervene in the affairs of state governments under specific circumstances.

### India's Federal Structure:

- **India operates under a federal system**, where governance is shared between the Centre and the States.
- The Constitution, through its **Seventh Schedule**, divides powers between the two levels of government.
- **Law and order are primarily the responsibility of the State governments.**
- However, in cases where there is a breakdown of governance, the Centre has the authority to intervene under certain emergency provisions.

### Understanding Emergency Provisions:

- The emergency provisions are encapsulated in **Part XVIII of the Constitution**, specifically **Articles 355 and 356**.
- **Article 355 mandates the Centre to protect states from external aggression and internal disturbances**, while ensuring that state governments function according to the Constitution.
- **Article 356 grants the Centre the power to impose President's Rule in a state** if it fails to comply with constitutional norms.
- These provisions are unique to India, as similar federal systems like the U.S. and Australia do not allow the central government to remove state governments.

### Historical Context and Judicial Interpretation:

- B.R. Ambedkar, while drafting these provisions, expressed hope that they would remain unused.

- However, **Article 356 has been misused on numerous occasions to remove state governments**, often for political reasons.
- It was only after the landmark 1994 Supreme Court judgment in the **R. Bommai case** that limitations were imposed on the use of Article 356.
  - The court ruled that **it could only be invoked in cases of a constitutional breakdown**, not merely for a law-and-order issue.
  - Additionally, the **court emphasized that the imposition of President's Rule would be subject to judicial review**.
- On the other hand, the scope of Article 355 has expanded through various court rulings.
- Initially interpreted narrowly, cases like **Naga People's Movement of Human Rights vs Union of India (1998)** have broadened its application, allowing the Centre to take a wider range of actions to fulfil its duty of protecting states.

#### **Recommendations from Various Commissions:**

- Several commissions have examined the use of emergency provisions in Centre-State relations.
- The **Sarkaria Commission (1987)**, the **National Commission to Review the Working of the Constitution (2002)**, and the **Punchhi Commission (2010)** all concur that Article 355 places a duty on the Union government, but any actions under Article 356 should be used as a last resort.
- They emphasize that it should only be invoked in extreme situations.

#### **The Case of Manipur:**

- The violence in Manipur has brought the issue of emergency provisions to the forefront once again.
- The situation in the state, marked by **widespread violence, looting of police ammunition, and targeted attacks, goes beyond a simple law-and-order breakdown**.
- Yet, despite the severity of the crisis, Article 356 has not been invoked.
- This is likely due to political considerations, as the same party holds power both at the Centre and the State.
- However, Article 355 is being utilized, and the Centre is taking steps to restore normalcy through various instructions and actions.

#### **Conclusion:**

- While India's federal structure emphasizes state autonomy, emergency provisions like **Articles 355 and 356 give the Centre considerable power to intervene when necessary**.
- However, these provisions must be used judiciously to maintain the delicate balance between the Centre and the States.
- The situation in Manipur highlights the complexities of this relationship, where political, constitutional, and legal factors all play a role in determining the extent of the Centre's involvement.



# General Studies III

## 1. Digital Personal Data Protection Act

### Why in News?

NITI Aayog, the top think tank of the government, had opposed some of the provisions of the Digital Personal Data Protection Act 2023. The Aayog particularly raised concerns regarding the changes proposed to the Right to Information (RTI) Act 2005.

### What is the Digital Personal Data Protection Act (DPDPA) 2023?

- **It is a comprehensive privacy and data protection law** that provides guidelines on processing, storing and securing personal data.
- **It recognises the right of individuals**, referred to as **data principals**, to protect their personal data during the processing of that data for lawful purposes.
- **The law culminates a seven-year journey** that began when the Supreme Court of India (SC), in the **K.S. Puttaswamy case**, ruled the right to privacy was protected under the Constitution of India in 2017.
- **The DPDPA includes provisions regarding** consent, legitimate uses, breaches, data fiduciary and processor responsibilities, and individuals' rights over their data.
- **The law doesn't apply to paper data** unless it's digitised or data collected for personal, artistic and journalistic use.
- **Fines for non-compliance** range from Rs 10,000 for individuals to Rs 2.5 billion for organisations.
- **The law is yet to be operationalised**, with necessary rules for its implementation still pending.

### Key Features of the DPDPA:

- **Applicability:**
  - It applies to all types of data linked to an individual, including name, addresses, ID numbers and behavioural information such as location, web history and preferences.
  - **But it doesn't apply to data** made publicly available by an individual or third parties.
  - This means information that an individual has consented to share is considered protected, **but not data indexed by search engines or social media sites.**
- **Defines data processing:**
  - It includes how the data is collected, recorded, structured, stored, shared or automatically acted on.
  - **This data can be processed in India or other countries** unless specifically barred and applies to all companies that offer goods or services within India, regardless where their headquarters is located.
- **Defines responsibilities of specific entities:**
  - **Data fiduciaries** are businesses and other organisations that interact with individuals to collect, amend and delete data as requested.
    - They need to specify why data is required, how long it's retained and how it can be used.
  - **Significant data fiduciary (SDF):** Companies that process large amounts of data may be designated as a SDF and need to
    - Appoint an Indian data protection officer,
    - Conduct third-party audits and
    - Perform data protection impact assessments.
  - **Data processors** are third-party businesses that process data on behalf of fiduciaries. They can include cloud providers or services in relation to KYC, fraud detection and credit ratings.

### Concerns Regarding DPDPA Raised by the NITI Aayog:

- The DPDP Bill proposed **an amendment to a section [Section 8(1)(j)] in the RTI Act** with such effect that **disclosure of personal information about public officials** would not be allowed even when these are justified in larger public interest.
- The NITI Aayog (then in the inter-ministerial consultations) suggested the Ministry of Electronics and Information Technology (MeitY) **to not pass the proposed law in its current form as it could weaken the RTI Act.**

- The provision to amend the RTI Act was also criticised by the Opposition parties and civil society activists during the consultation period and when the Bill came up for discussion in Parliament.
- However, the MeitY **kept the proposed changes to the RTI Act unchanged** despite the reservations of NITI Aayog.
- The government was of the view that **the right to privacy is a fundamental right** under the Constitution of India, and should be made available to officers in government institutions as well.

## 2. Why Digitisation is Not Enough to Reform Land Laws

### Context

- **India's land governance system is deeply entangled in a complex network of legal, institutional, and administrative challenges** that have hampered the country's economic and social development.
- As highlighted in the Economic Survey 2023-24, **these challenges are barriers to achieving multiple developmental goals.**
- **While the 2024 Budget proposed technological solutions** to modernise India's land administration, **such initiatives do not address the deeply rooted legal and institutional barriers** that hinder effective land governance.

### An Analysis of Barriers in Land Governance

- **Unclear Land Titles and Insecure Tenure**
  - One of the most significant issues in India's land governance is the **lack of clear and secure land titles.**
  - **Ownership of land in India is often ambiguous** due to outdated records, poor maintenance of land registries, and overlapping claims.
  - This **problem is especially prevalent in rural areas** where the majority of landholdings are informal and not officially registered.
  - **Farmers and landowners cannot confidently invest in long-term improvements on their land,** as they lack formal proof of ownership.
  - **Ambiguous ownership frequently leads to land disputes,** which clog the judicial system.
- **Fragmented and Conflicting Legal Framework**
  - **India's land governance is subject to a myriad of conflicting laws** that vary across states and regions, adding to the complexity and inefficiency of the system.
  - **These laws regulate land ownership, transfers, leasing, and land use** in ways that are **often contradictory or overlapping.**
  - **Several laws impose restrictions on the transfer of land,** especially agricultural land.
  - In many states, **only certain individuals or groups can purchase agricultural land, and transfers are subject to rigid regulations** that differ from one state to another.
- **Fragmentation of Land Holdings**
  - Land fragmentation is one of the most pressing challenges in India's agricultural sector.
  - **Over time, as land is passed down through generations, it is divided into smaller and smaller parcels.**
  - **Small landholdings prevent farmers from benefiting from economies of scale,** as they lack the resources to invest in modern machinery, advanced irrigation techniques, or high-quality seeds.
- **Gender Inequality in Land Ownership**
  - Despite several legal provisions that aim to improve women's access to land ownership, **gender inequality remains a pervasive issue in India's land governance.**
  - **Women, especially in rural areas, are often denied their rightful share of property** due to social norms, patriarchal traditions, and legal loopholes.
  - **While legal reforms such as the Hindu Succession Act have been introduced to grant women equal inheritance rights,** in practice, women are often pressured to forgo their claims to family property in favour of their male relatives.
- **Land Use Restrictions and Regulatory Barriers**
  - Many laws in India impose restrictions on how land can be used, particularly in the agricultural sector.
  - **These land use regulations are often rigid and outdated,** preventing landowners from converting their land for more economically viable purposes.

- For instance, land that is designated for agricultural use cannot easily be converted for industrial or commercial purposes, even if such a conversion would lead to higher economic returns.
- These regulations also limit leasing opportunities, thereby stifling investment in the land.

### Proposed Reforms: Digitisation and Its Limitations

#### • Proposed Reforms

- To address some of these challenges, the 2024 Budget proposed several digitisation initiatives, including the digitisation of land records, the creation of land registries, and the assignment of unique identification numbers to land parcels.
- Additionally, efforts to integrate land records with digital platforms such as Agri Stack have been suggested to streamline land administration.
- While these reforms could modernise the way India manages its land records, they fall short of addressing the root causes of land-related problems, which are legal and institutional in nature.

#### • Limitations of Digitisation

- The uncertainty surrounding land ownership and insecure property titles are not solely due to the paper-based nature of land records but stem from conflicting laws and administrative procedures.
- For example, digitising urban land records may not necessarily lead to improved land ownership or access to formal credit, as long as the underlying legal framework remains convoluted and restrictive.
- A digitised system cannot overcome the risks associated with land transactions, which remain subject to numerous laws restricting land transfers, leasing, and use.
- The persistence of legal ambiguity, particularly in the context of agricultural land leasing, further undermines the effectiveness of digitization efforts.

### The Real Solution to India's Complex Land Governance System

#### • Legal Recognition of Land Titles

- A central component of reform must be the establishment of a legally recognised and enforceable system of land titles.
- This involves creating a unified framework that provides a clear and indisputable record of ownership.
- The current system, in which ownership is often based on possession rather than formal title, needs to be replaced with one that provides individuals and businesses with secure and transferable property rights.

#### • Guaranteed Tenure Security

- Strengthening tenure security is crucial for encouraging investment in land.
- Farmers, in particular, need assurance that they will not lose their land to expropriation or disputes, which will enable them to make long-term investments in agricultural productivity.
- Clear property rights are also necessary to give landowners access to formal credit, as banks are more willing to offer loans when the collateral is secured by legally recognized titles.

#### • Liberalising Land Transfers

- Many state laws impose unnecessary restrictions on the sale and purchase of agricultural land, such as limiting who can buy or sell land and restricting the use of land for non-agricultural purposes.
- These restrictions hinder the transfer of land to more efficient users, stifle investment, and discourage land consolidation.
- Legal reforms should aim to remove such restrictions while ensuring that land transfers are transparent, equitable, and subject to fair compensation.

#### • Reforming Land Leasing Laws

- In many states, land leasing is either prohibited or heavily regulated.
- This creates a barrier to the efficient use of land, as owners who are unable or unwilling to farm their land cannot legally lease it to more capable or interested farmers.
- Reforming these leasing laws to allow for more flexible and transparent leasing arrangements would not only increase agricultural productivity but also provide a livelihood option for landless farmers and rural workers.

#### • Simplifying Consolidation Procedures

- The legal and administrative barriers to land consolidation need to be removed.
- This could involve simplifying the process for merging small and fragmented parcels of land into larger, more economically viable holdings.

- **Legal frameworks should encourage voluntary land consolidation**, offering incentives to landowners who choose to merge their parcels for more productive use.
- **Supporting Collective Farming Models**
  - **Another avenue for land consolidation is through collective farming models**, where multiple small farmers pool their resources and land to achieve economies of scale.
  - **Legal reforms could promote such models by providing clear guidelines for land pooling and collective management**, ensuring that farmers retain their ownership rights while benefiting from joint production.

### Conclusion

- **While digitisation can assist in modernising land administration**, it is only one piece of the puzzle.
- **Without addressing the complex web of conflicting laws**, regulatory restrictions, and administrative inefficiencies, **India will not be able to fully unlock the potential of its land resources for economic development and social equity.**
- **True progress will only be achieved through a combination of legal reforms and technological advancements**, paving the way for a more inclusive and productive land governance system.

## 3. Textile Sector in India

### Textile Sector in India:

- The textile sector is one of the oldest and most significant industries in India, playing a pivotal role in the country's economic landscape.
- The industry encompasses a wide range of activities, including **fiber production, spinning, weaving, knitting, dyeing, and apparel manufacturing**, making it a key driver of economic growth and rural development.

### Significance of the Textile Sector in India:

- **Economic Contribution:** The textile sector contributes **about 2.3% to India's GDP and 7% to the country's industrial output.**
- **Employment:** It is the **second-largest employer after agriculture**, providing direct employment to over 45 million people and indirectly supporting 100 million people in allied sectors.
- **Exports:** The sector accounts for approximately **12% of India's total export earnings**. In FY 2023, India's textile and apparel exports stood at around \$44.4 billion, making it one of the largest exporters of textiles globally.
- **Diverse Segments:** The industry includes handloom, power loom, and mill sectors, with India being a global leader in the production of cotton, jute, and silk.

### Key Segments of the Textile Industry:

- **Cotton Textiles:** India is the **largest producer of cotton globally, with over 30% of the world's cotton production.** The cotton segment plays a crucial role, with a strong domestic supply chain supporting both domestic and export markets.
- **Handloom and Handicrafts:** India's handloom sector is renowned worldwide for its traditional designs and quality. With **more than 4.3 million weavers**, this segment preserves India's rich cultural heritage and contributes significantly to rural employment.
- **Technical Textiles:** This is a rapidly growing segment that focuses on textiles with functional applications, such as in healthcare, automotive, and agriculture. The **market for technical textiles in India is projected to grow at a CAGR of 20%, reaching \$23 billion by 2025.**
- **Man-Made Fibres (MMF):** The MMF segment has been gaining traction, **contributing 30% to India's textile market.** It includes synthetic fibres like polyester, which are widely used in various industries due to their durability and versatility.

### Current Challenges Facing the Textile Sector:

- **Raw Material Fluctuations:** The industry faces challenges due to fluctuations in raw material prices, especially cotton, impacting production costs and profitability.

- **Technological Upgradation:** Outdated technology in many units hampers productivity and quality. There is a need for significant investment in modern machinery and digital tools to compete globally.
- **Environmental Concerns:** The textile industry is resource-intensive, consuming large amounts of water and energy. Environmental sustainability has become a critical issue, necessitating the adoption of eco-friendly practices.
- **Competition from Other Countries:** India faces stiff competition from countries like **Bangladesh, Vietnam,** and **China**, which offer lower production costs and faster turnaround times, particularly in the apparel segment.
- **Regulatory Hurdles:** Compliance with various regulatory norms and access to government schemes can be complex, often leading to delays and increased costs for textile manufacturers.

#### Government Initiatives to Boost the Textile Sector:

- **Production Linked Incentive (PLI) Scheme:** The government introduced a ₹10,683 crore PLI scheme specifically for the textile sector to promote the production of man-made fibres and technical textiles. This is **expected to attract investments worth ₹19,000 crore and create 7.5 lakh jobs.**
- **National Technical Textiles Mission:** Launched with an **outlay of ₹1,480 crore**, this mission aims to position India as a global leader in technical textiles by enhancing domestic production and research.
- **Amended Technology Upgradation Fund Scheme (ATUFS):** This scheme provides financial assistance for upgrading machinery, aiming to modernize the textile industry and enhance productivity.
- **Skill Development Programs:** Initiatives like the Samarth (Scheme for Capacity Building in Textile Sector) focus on skill development, **training over 10 lakh youth in various textile-related trades** to meet the industry's demand for skilled labor.
- **Mega Integrated Textile Region and Apparel (MITRA) Parks:** The government plans to **set up 7 MITRA parks with state-of-the-art infrastructure**, common facilities, and plug-and-play ecosystems to attract investments and enhance the competitiveness of Indian textiles.

#### News Summary:

- About 12 textile companies are set to receive the first set of incentive payment under the production-linked incentive (PLI) scheme.
- This follows signs of export recovery in the month of August, after delays due to weak demand in Western markets.
- The PLI scheme, launched in 2021 with a budget of ₹10,683 crore, aims to boost production of man-made fibres (MMF), apparel, MMF fabrics, and technical textiles.
  - The scheme will enhance manufacturing and investments, leveraging India's complete value chain.
- The Ministry of Textiles has outlined a **roadmap to create 4.5 to 6 crore jobs in the textile sector by 2030 and expand the market size to \$350 billion from the current \$165 billion.**
- Despite these efforts, India's textile exports declined for the second consecutive year in 2023-24.
- The **World Bank reported that India's share in global exports of labour-intensive sectors like apparel and textiles has stagnated**, while countries like Bangladesh and Vietnam have gained market share, aided by free trade agreements and duty concessions.
- The Bank suggested that **India could benefit from diversifying exports, leveraging geopolitical shifts, and reducing trade barriers to boost the textile sector's growth.**

## 4. A Legal Void: How to Deal with the National Security Risk from FDI and Trade

### Context

- The **debate over Chinese foreign direct investment (FDI) into India oscillates** between the **economic benefits and potential security risks.**
- This **discourse is critical**, as it **not only addresses the immediate concerns of economic competition and sovereignty** but also prompts the question of **whether India has an adequate legislative framework to manage FDI and international trade in the context of national security.**
- Despite widespread discussion, **the answer remains that India lacks a comprehensive legal structure** to address these concerns effectively.



### India's Existing FDI Regulation: Press Note 3 (PN3)

- **India's approach to regulating FDI underwent a significant shift in April 2020**, when the government **introduced Press Note 3 (PN3) in response to economic vulnerabilities** worsened by the COVID-19 pandemic.
- PN3 is enforced through the **Foreign Exchange Management Act (FEMA)** — a law that provides the architecture for the orderly development and maintenance of the foreign exchange market in India.
- **PN3 represents a crucial regulatory measure designed to curb opportunistic takeovers** of Indian companies by foreign investors, particularly from neighbouring countries.
- While the pandemic weakened several sectors of the Indian economy, **there was growing concern that foreign investors, especially from China, might exploit the situation by acquiring distressed Indian companies.**
- **PN3 was seen as a protective response to these concerns**, but its scope and impact are much broader, with profound implications for India's FDI policy.

### Key Features of PN3: Geographical Focus and Scope

- **Geographical Focus**
  - While many countries share land borders with India, **the primary target of this regulation was China**, given the growing economic and geopolitical tensions between the two nations.
  - **China had been a significant investor in various sectors of the Indian economy**, including technology, manufacturing, and infrastructure.
  - **PN3 sought to limit this influence** by increasing the scrutiny of Chinese investments.
- **Scope of the Regulation**
  - **PN3 applies to both new investments and changes in ownership** of existing investments.
  - This means that **even if a company was already operating in India with foreign investment, any future changes in shareholding or ownership would require government approval** if the investment originated from a bordering country.
  - This **aspect of the regulation was designed to prevent indirect acquisitions or changes in control** of Indian companies.

### Strategic Importance of PN3 in India's FDI Policy

- **Geopolitical Context**
  - The introduction of PN3 should be understood **in the context of India's broader geopolitical strategy.**
  - Relations between India and China have been fraught, particularly considering border disputes, trade imbalances, and strategic competition in the Indo-Pacific region.
  - **By tightening control over Chinese investments, India is asserting its economic sovereignty** and reducing the risk of foreign entities exerting undue influence on its domestic industries.
- **Economic Protectionism vs. National Security**
  - PN3 **reflects a growing trend of economic protectionism** driven by national security concerns.
  - While traditionally, **FDI has been seen as a means of fostering economic growth and development, PN3 represents a shift towards a more cautious and defensive stance**, where security considerations take precedence over economic liberalisation.
  - This **shift aligns India with other major economies, such as the US, Canada, and Australia**, which have also introduced measures to screen FDI based on national security concerns.

### Limitations and Criticisms of PN3

- **Absence of Direct National Security Provisions**
  - **One of the major limitations of PN3 is its failure to explicitly mention national security** as a basis for restricting FDI.
  - Although national security concerns are clearly the driving force behind the regulation, **the lack of explicit language leaves India's FDI regime vulnerable to legal challenges.**
  - In the absence of a well-defined national security law, **the reliance on FEMA to screen FDI for security risks may not be legally sufficient** in international arbitration or dispute resolution settings.
- **Impact on Business and Economic Relations**
  - The **requirement for prior government approval can slow down investment processes** and may act as a deterrent for foreign investors.

- By creating additional layers of bureaucracy, **PN3 potentially hampers the ease of doing business**, particularly for companies that may not pose any security risks but are still subject to the same scrutiny as those from countries with a contentious relationship with India, like China.
- For instance, **investments from friendly neighbouring countries, such as Bhutan or Nepal, are subjected to the same regulations**, even though they do not pose significant security concerns.
- **Targeted at China but Broader in Scope**
  - While PN3 was largely seen as a response to Chinese investments, **the regulation applies to all land-bordering countries, many of which have friendly relations with India.**
  - This **broad-brush approach has raised concerns** that it may unnecessarily restrict beneficial investments from countries like Nepal, Bhutan, and Bangladesh.
  - This **general application could hinder regional cooperation and economic integration**, especially when such investments do not raise security alarms.
- **Indirect Effects on Multinational Corporations (MNCs)**
  - PN3 could have an impact on MNCs with Chinese ownership or investments, even if these companies are headquartered in countries outside the region.
  - For example, **if a U.S. or European company with significant Chinese shareholding wants to invest in India, it may be subject to the same scrutiny** as a direct Chinese investor.
  - **This could complicate the investment landscape** for global companies that have complex ownership structures, creating uncertainty and additional compliance burdens.

#### **The Need for a Coherent Approach to FDI and National Security**

- **A Legal Disconnect**
  - The **disparity between India's domestic legal framework and its international treaty obligations further underscores the need for a more coherent approach to FDI and national security.**
  - **India's past and current international investment treaties**, such as the 2015 Model Bilateral Investment Treaty (BIT), **include specific provisions for managing issues related to foreign exchange and national security.**
  - For example, **Article 6 of the BIT deals with exchange control issues, while Article 33 allows the state to take measures to protect national security**, even if these actions violate the treaty's substantive provisions.
- **The Broader Legal Vacuum in India's National Security Legislation**
  - India's legal gap **extends beyond FDI to encompass international trade as well.**
  - A **notable example is India's response to the Pulwama terror attack in February 2019, which led to the imposition of 200 percent customs duties on Pakistani imports.**
  - The **measure was justified on the grounds of national security, yet India invoked Section 8A (1) of the Customs Tariff Act** — a provision designed for economic emergencies, not for security threats.
  - This **reflects a broader pattern in which India repurposes existing economic laws to address national security concerns**, rather than developing dedicated legislation for such scenarios.

#### **Way Forward: Need for Dedicated National Security Legislation**

- The **ongoing debate about the security risks posed by Chinese FDI presents an opportunity to launch a broader national discussion** on the need for a comprehensive legal framework that aligns with global best practices.
- **Countries like Canada and Australia have demonstrated the importance of having dedicated laws** to manage the national security risks associated with FDI and international trade.
- **India should follow suit by developing legislation** specifically designed to address these concerns.

#### **Conclusion**

- While India has taken steps to manage foreign investment through regulations like PN3, **the absence of a comprehensive national security framework remains a critical gap.**
- **As India continues to attract FDI and engage in global trade, it is imperative that the country develops a clear legal mechanism** to safeguard its national security.
- By learning from the practices of other nations and aligning its domestic laws with its international treaty obligations, **India can better protect its sovereignty and economic interests in the face of emerging global challenges.**

## 5. Deeptech: Revolutionizing the Future of Technology

### Introduction:

- Deeptech, or **deep technology**, refers to **cutting-edge innovations rooted in scientific and engineering breakthroughs**.
- Unlike traditional tech companies that often focus on software or app development, deeptech ventures delve into complex technologies that have the potential to disrupt industries and address significant global challenges.
- These technologies include **artificial intelligence (AI), robotics, quantum computing, biotechnology, blockchain, advanced materials**, and more.

### Key Characteristics of Deeptech:

- **Scientific and Engineering Foundations:** Deeptech is built on **scientific research, engineering advancements, and sophisticated algorithms**. It often involves long-term research and development (R&D) and requires a deep understanding of the underlying science.
- **High Entry Barriers:** Deeptech ventures typically have high entry barriers due to the need for specialized knowledge, substantial capital investment, and complex development processes.
- **Significant Impact Potential:** Deeptech solutions **aim to solve critical problems in various sectors such as healthcare, energy, manufacturing, and agriculture**. They have the potential to create substantial economic value and drive societal change.
- **Extended Development Timelines:** Unlike typical tech startups that can scale rapidly, deeptech companies often face extended timelines due to the need for rigorous testing, prototyping, and validation before reaching the market.

### Present Challenges Facing Deeptech:

- **High R&D Costs:** The development of deeptech solutions requires significant investment in research, infrastructure, and talent, making it difficult for startups to secure funding.
- **Commercialization Barriers:** Converting deeptech **innovations into market-ready products involves overcoming technical, regulatory, and market acceptance hurdles**.
- **Talent Shortage:** There is a growing need for specialized talent in fields such as quantum computing, AI, and biotechnology, but the supply of skilled professionals is limited.
- **Long Time-to-Market:** The extended timelines for development and regulatory approval can deter investors looking for quicker returns.

### Future of Deeptech:

- The future of deeptech is promising, with increasing investment and support from governments, academia, and private sectors.
- As deeptech continues to evolve, it will **play a pivotal role in shaping industries and enhancing human life**.
- Governments and private investors are recognizing the importance of supporting deeptech ventures through funding, incubators, and policy frameworks.

### National Deeptech Startup Policy:

- India's National Deeptech Startup Policy is a strategic initiative **aimed at fostering the growth of deep technology startups in the country**.
- Deeptech startups, which are rooted in advanced scientific and engineering innovations, play a critical role in driving India's technological leadership and addressing complex challenges in sectors such as healthcare, agriculture, energy, and manufacturing.

### Objectives of the Policy:

- **Promoting Innovation:** Encourage the development of cutting-edge technologies through R&D support, grants, and innovation hubs.

- **Facilitating Access to Capital:** Provide financial assistance and incentives, including **venture capital, government grants, and tax benefits to startups in the deeptech domain.**
- **Building Infrastructure:** Establish dedicated incubators, accelerators, and test beds for deeptech innovations to bridge the gap between research and commercialization.
- **Developing Skilled Talent:** Strengthen educational programs and skill development initiatives to create a robust talent pool in advanced technological fields.
- **Streamlining Regulations:** Simplify regulatory frameworks to enable faster approvals and reduce barriers for deeptech startups, including intellectual property rights (IPR) protection and export controls.

#### Key Features of the Policy:

- **Funding Support:** Creation of funds like the **Startup India Seed Fund Scheme** and deeptech-specific funds to provide initial and growth-stage funding to startups.
- **Collaboration with Academia and Industry:** Promote partnerships between academic institutions, research labs, and industry to accelerate innovation and technology transfer.
- **Incentives for R&D:** Offer incentives such as **reduced taxes, grants, and subsidies to encourage R&D activities in deeptech fields.**
- **Ease of Doing Business:** Simplify compliance procedures and provide a single-window clearance system for deeptech startups.

#### DRDO to fund first-of-its-kind deep tech research for military use:

- DRDO is set to launch a pioneering initiative to advance research in emerging military technologies, backed by a ₹1 lakh crore corpus announced in the interim Budget.
- The initiative aims to indigenize defence products and promote deep tech innovations in areas such as quantum computing, blockchain, and artificial intelligence.
- **The DRDO has identified five high-value projects, each with a funding cap of ₹50 crore, to reduce reliance on imports and foster self-reliance in defence technology.**
- Inspired by the US DARPA model, the programme seeks to push futuristic and disruptive technologies that could revolutionize defence systems.
- Defence Minister Rajnath Singh has approved the funding, which will be managed through the DRDO's **Technology Development Fund (TDF).**
- The fund focuses on engaging private industry, MSMEs, and startups in the development of military hardware and software.

## 6. India Needs a National Security Strategy

### Context

- **In an increasingly complex global environment, India finds itself at a critical juncture,** balancing its ambitions to become a \$4 trillion economy while facing evolving geopolitical challenges.
- As old adversaries grow stronger and new alliances remain tentative, **the demand for a comprehensive National Security Strategy (NSS) is becoming more urgent.**
- Therefore, **it is important to examine the various dimensions of national security,** highlighting the complexities involved in creating a robust and comprehensive NSS for India.

### The Concept of National Security and Strategies Adopted by Different Countries

- **The Concept of National Security**
  - At the heart of formulating a NSS is **the need to define what "national security" means for a particular state.**
  - National security has been described as the ability of a state to cater for the protection and defence of its citizenry.
  - The **definition of national security can vary widely depending on a country's unique circumstances.**
- **The Case of the United States of America**

- In the case of the United States, **national security has historically been centred around the union of values and national interests.**
- The **U.S. has promoted itself as a global leader in democracy while simultaneously supporting authoritarian regimes** when economically or strategically beneficial.
- In this context, the **U.S. NSS serves not only as a guiding document for defence policy but also as a mechanism to project global power** both externally and internally.
- **The Strategy of the United Kingdom and France**
  - **Countries like the United Kingdom and France** tailor their security strategies to **reflect their aspirations of maintaining global influence.**
  - The **U.K.'s 2021 Integrated Review emphasised collaboration with allies to sustain its role as a European power** with global interests, despite being financially constrained.
  - **France's 2022 review**, which was shaped by the Ukraine war, **highlighted its nuclear deterrent, and bid for European leadership.**
  - These **examples demonstrate that while the core components of a security strategy are universal—defence, finance, international relations—they are always contextualised by each country's position and ambitions** on the world stage.

### India's Need for a Comprehensive National Security Strategy

- **Geopolitical Challenges: A Shifting Power Dynamic**
  - **One of the most immediate drivers** of India's need for an NSS is **its volatile geopolitical neighbourhood.**
  - India shares borders with two nuclear-armed adversaries, Pakistan, and China, both of which have significant military and strategic capabilities.
  - **China has rapidly expanded its influence in South Asia through economic investments**, infrastructure projects under the Belt and Road Initiative (BRI), and an assertive military presence along the disputed Line of Actual Control (LAC).
- **The China Factor**
  - **The frequent border skirmishes with China** such as the 2020 Galwan Valley clash **highlight the urgent need for India to rethink its defence strategy**, ensuring that it can respond swiftly to military provocations.
  - Beyond these immediate challenges, **China's broader global influence poses a long-term strategic threat to India.**
  - **China's dominance in economic, technological, and military fields requires India to carefully calibrate its foreign policy**, striking a balance between competition and cooperation.
  - **Without a comprehensive NSS, India risks being overshadowed by China's rise** and may find itself reacting to global developments rather than shaping them proactively.
  - **A well-crafted NSS would allow India to systematically assess the risks posed by its powerful northern neighbour**, define a strategy to contain these threats, and explore avenues for pragmatic engagement where beneficial.
- **India's Precarious Relationship with Pakistan**
  - On the western front, **India's relationship with Pakistan remains fraught with tension**, primarily driven by historical conflicts and ongoing disputes over Kashmir.
  - **While the immediate military threat from Pakistan may have diminished compared to the past**, Pakistan's proxy warfare through non-state actors and its strategic relationship with China complicate India's national security calculus.
  - Moreover, **Pakistan's opaque defence budgeting, its close ties with China**, and its dependence on foreign military assistance mean that India cannot afford to ignore this front.

### The Role of Economic Security in Formulating India's National Security Strategy

- **Economic Security as the Bedrock of National Strategy**
  - In the modern world, **economic strength is increasingly recognised as the cornerstone of national security.**
  - **A coherent NSS for India must, therefore, place the economy at the forefront** of its strategy, recognising that a weak economy undermines military strength, diplomatic flexibility, and overall national resilience.
  - **India's pursuit of becoming a \$4 trillion economy will face significant headwinds** as global uncertainties, exacerbated by the ongoing Ukraine and Gaza wars, impede global growth.

- In this context, an NSS must define how India plans to safeguard its economic growth while managing external threats.
- **The Intersection of Economic Policy with Defence Strategy**
  - This is critical for India because a **robust economy not only supports greater defence spending but also creates the technological innovations** needed for modern warfare.
  - In recent years, **India has made significant strides toward economic reforms** aimed at boosting manufacturing, trade, and technology sectors.
  - **However, without a strategic framework to link these economic goals with national security imperatives, the potential benefits of these reforms may not be fully realised.**
  - **India's economic relationship with China is particularly important to consider in the NSS.**
  - Despite growing tensions between the two countries, **China remains one of India's largest trading partners.**
  - **India's \$85 billion trade deficit with China underscores the economic vulnerabilities** that accompany its geopolitical tensions.

### **Complexities and Opportunities in Developing a Comprehensive NSS**

- **Prioritising Threats and Resource Allocation**
  - The formulation of an NSS also **requires clear prioritisation of threats and a realistic assessment of the country's defence capabilities.**
  - This becomes a **particularly sensitive task when dealing with adversaries like China.** India's military capabilities, particularly in submarine strength and ship-building, lag significantly behind China's.
  - Given this, **any public document outlining the country's defence priorities and capabilities would risk revealing critical vulnerabilities.**
  - As a result, **transparency in the NSS might not be in India's best interest; secrecy becomes a strategic necessity to prevent adversaries from gaining valuable insights** into India's weaknesses.
  - The **allocation of resources to different branches of the armed forces and the procurement of necessary equipment also demands careful thought.**
  - For instance, if the Indo-Pacific region is identified as a priority, India must significantly ramp up its naval capabilities.
- **Balancing Internal and External Audiences**
  - One of the complexities of drafting an NSS lies in **addressing the needs of both internal and external audiences.**
  - Domestically, **the Indian public demands strong leadership and often views national security through the lens of military strength** and defence capabilities.
  - However, a **written NSS that emphasises these aspects too strongly risks becoming politically charged and might undermine the flexibility** needed in foreign policy.
  - Externally, **India's nuanced positions on conflicts like the Russia-Ukraine war and the Israel-Palestine conflict illustrate the challenges of balancing global expectations** with national interests.
  - **Publicly committing to values like democracy in an NSS might constrain India's diplomatic options,** particularly when dealing with countries that do not share those values.
  - The **United States can afford such hypocrisy because of its global dominance, but India, as a rising power, must tread more carefully.**

### **Conclusion**

- **National Security Strategy for India is not just a defence document, it is a roadmap for the country's future.**
- **It must encompass economic priorities, geopolitical realities, and the need for flexibility** in foreign policy.
- **The formulation of an NSS is an exercise in balancing transparency with confidentiality, public expectations with strategic necessities,** and immediate threats with long-term goals.

## **7. Pitfalls of Estimating GDP**

### **Introduction:**

- Gross Domestic Product (GDP) is a critical measure of a country's economic size and is used universally to compare economic indicators, tax burdens, and welfare expenditures across countries.
- **GDP estimates are most meaningful at constant prices, reflecting real growth by removing the effects of inflation.**
- The current GDP series, with the **base year of 2011-12**, is due for revision, with **2020-21 proposed as the new base year.**
- This revision involves the use of various datasets to accurately capture changes in the economy.

#### Proposed Changes in GDP Estimation:

- The **National Statistical Office (NSO) is considering using Goods and Services Tax (GST) data to estimate value addition for the next GDP revision.**
- This data is proposed to replace the Ministry of Corporate Affairs' MCA-21 database, which is currently used for estimating the **Private Corporate Sector (PCS)**, accounting for about 38% of GDP.
- This shift is intended to enhance the accuracy of GDP estimates.

#### Previous Changes in GDP Estimation:

- The **MCA-21 database was introduced in the last revision of the GDP series (2011-12 base year), replacing the Annual Survey of Industries (ASI) and RBI data samples that were previously used to estimate manufacturing value-added.**
- The change was made because **ASI data was found to miss value addition occurring outside factory premises, and the RBI sample did not fully capture the growing PCS.**
- The 2011-12 GDP revision led to surprising results, such as a significantly higher growth rate for the manufacturing sector compared to the earlier series.
- This raised concerns, as the higher growth rates did not align with other macroeconomic indicators like bank credit growth and industrial capacity utilization, leading to skepticism about the new GDP estimates.

#### Systematic Overestimation of GDP:

- Comparative studies between the GDP estimates based on the MCA-21 database and ASI data have shown significant discrepancies.
- From 2012-13 to 2019-20, the average annual growth rate of Gross Value Added (GVA) in the National Accounts Statistics (NAS) was 6.2%, compared to just 3.2% as per ASI data.
- Similarly, **Gross Fixed Capital Formation (GFCF)** growth was 4.5% in NAS but only 0.3% in ASI.
  - Gross fixed capital formation is a measure of how much of an economy's new value is invested in assets that are used to produce goods and services, rather than consumed.
- These findings indicate a systematic overestimation in the NAS series, validating concerns about the reliability of GDP estimates based on the MCA-21 database.

#### Concerns About Using GST Data for GDP Estimation:

- The proposed use of GST data for GDP estimation is seen as a potential game-changer due to its vast and up-to-date nature.
- However, concerns remain as the **GST dataset has not been sufficiently analyzed or validated for policy research.**
- The **NSO is urged to conduct pilot studies and systematic analyses to ensure the data's suitability for GDP estimation.**
- Without these validations, the reliability of GDP estimates using GST data could remain questionable.

#### Recommendations & Way Forward:

- To maintain the integrity of GDP estimates, the **NSO should avoid hastily implementing unverified datasets and methods.**
- It is crucial to initiate pilot studies to validate the GST data for specific industries, sectors, and regions.
- Alternatively, the NSO could consider reverting to ASI data, which now has a shorter time lag and could provide more reliable estimates for manufacturing GDP.

#### Conclusion:

- Accurate GDP estimation is essential for assessing economic performance and informing policy decisions.

- While the incorporation of new datasets like GST holds promise, careful testing and validation are necessary to avoid the pitfalls of past revisions.
- Ensuring the accuracy of GDP estimates will reinforce confidence in the economic data used by policymakers, researchers, and the public.

## 8. Food Processing Sector Reforms in Last 10 Years

### Why in News?

While addressing the **3rd edition of World Food India 2024**, the Indian PM said the government has undertaken many reforms in the past 10 years for the growth of the food processing sector.

The PM also said that the Global Food Regulators Summit by the FSSAI will bring together global regulators (WHO, FAO) and domestic institutes to issues such as food safety, quality standards, and best practices.

### What is World Food India (WFI)?

- **The 1st edition of the WFI** was launched by the **Ministry of Food Processing Industries (MoFPI)** in 2017, with the objective of
  - Introducing the world to rich Indian food culture.
  - As well as promoting investments in the diverse food processing sector of the country.
- In view of celebrating **2023 as the International Year of Millets** and to bring the global food processing industry together, the MoFPI organised the **2nd** edition WFI in 2023.
- **The 3rd edition** of the WFI 2024 will be organised from 19th to 22nd September 2024.

### Food Processing Sector in India:

- **Scenario:**
  - Food processing in India - '**A Sunrise sector**' - has an **essential role in linking Indian farmers to consumers** in the domestic and international markets.
  - **Major sectors** constituting the food processing industry in India are processed fruits and vegetables, ready-to-eat/cook (RTE/RTC), mozzarella cheese, processed marine products, edible oils, beverages, and dairy products.
  - The sector has grown substantially, averaging an annual growth rate of **around 7.3%**, during 2015-2022.
  - The industry has a share of **12.22% in the employment generated** in all Registered Factory sectors engaging **approximately 2.03 million people**.
  - **Unregistered food processing sector** supports employment to 5.1 million workers, constituting 14.18% of employment in the unregistered manufacturing sector.
- **Growth drivers:**
  - **Agri-commodity hub:**
    - Due to its **diverse agro-climatic conditions**, it has a wide-ranging and large raw material base suitable for food processing industries.
    - India has **access to several natural resources** that provides it with a competitive advantage in the food processing sector.
    - India is the **largest producer of milk and spices** and one of the leading producers of fruits and vegetables, poultry, and meat.
      - **Huge consumer base; strong economy; conducive policies; One District, One Product (ODOP); etc.**
  - **Future prospects:** The market size of the food processing sector in India is estimated **to reach US\$ 1,274 billion in 2027 from US\$ 866 billion in 2022**, backed by changing lifestyle and food habits due to rising disposable income and urbanisation.

### Steps Taken by the Government (MoFPI) to Boost Food Processing Sector in India:

- **PM Kisan SAMPADA Yojana (PMKSY):** It has been envisaged as a comprehensive package which will result in creation of modern infrastructure with efficient supply chain management from farm gate to retail outlet.
- **PM Formalisation of Micro food processing Enterprises (PMFME) Scheme:** It aims to enhance existing individual micro-enterprises in the unorganised segment of the food processing industry.



- **Production Linked Incentive Scheme for Food Processing Industry (PLISFPI):** It aims to -
  - **Boost domestic manufacturing, increase exports**, while supporting food manufacturing entities with stipulated sales.
  - **Make investment for expansion of processing capacity.** For example, **100% FDI** is permitted in the food processing sector
  - Incentivise emergence of strong Indian brands. Food processing units qualify for **complete profit exemption** in the first five years.
- **The One District One Product (ODOP) scheme:**
  - It was launched under the PMFME to provide the framework for value chain development and alignment of support infrastructure.
  - ODOP approved for 713 districts in 35 States/UTs with 137 unique products.
- **The Mega Food Park (MFP) scheme:**
  - The scheme follows a cluster approach, establishing modern food processing units within well-defined agri/horticultural zones.
  - Under the MFP scheme 41 projects were approved, of which 24 are operational as of December 2023.
- **Operation Greens:**
  - It was launched to boost Farmer Producers Organisations (FPOs), agri-logistics, processing facilities, and professional management, focusing initially on Tomato, Onion, and Potato (**TOP**) value chains from **2018**.
  - As part of the "Aatmanirbhar Bharat Package", the scheme was extended from TOP crops to all fruits and vegetables (**TOTAL**).

#### Challenges and Road Ahead for Food Processing Sector in India:

- **Challenges:**
  - **Lack of cutting-edge infrastructure:** Many food processing businesses operate in the small and medium enterprises (SMEs) sector, which often lacks the resources needed to upgrade their facilities and machinery to the latest technology.
  - **The industry is also plagued by:**
    - Inefficient supply chains,
    - Inadequate storage and transport facilities, and
    - A lack of access to credit and financing.
- **Impact of these issues:** These issues make it difficult for SMEs to enter the market and compete with larger, more established companies.
- **Road ahead:**
  - The ever-increasing demand for processed food products in domestic and international markets, as well as supportive government policies, are providing the impetus for the sector.
  - Therefore, the sector can become an even more important component of India's GDP and economic growth, if **all stakeholders** - from the government and private players - **come together and realise this goal**.

## 9. White Revolution 2.0

### Why in the News?

Union Home and Cooperation Minister Amit Shah recently launched the standard operating procedure for White Revolution 2.0.

### White Revolution:

- The White Revolution, also known as **Operation Flood**, was a landmark initiative that **transformed India from a milk-deficient nation into the world's largest milk producer**.
- Spearheaded by **Vergheese Kurien**, the "**Father of the White Revolution**," this movement played a pivotal role in enhancing dairy farming and milk production in India, significantly improving the socio-economic conditions of rural dairy farmers.

### Background & Initiation of the Revolution:

- The **White Revolution** began in **1970** with the launch of Operation Flood by the **National Dairy Development Board (NDDB)**.
- Funded initially through the sale of surplus dairy commodities donated by the European Economic Community, the program aimed to create a nationwide milk grid, increase milk production, and provide fair prices to farmers.
- **Key Objectives of the White Revolution:**
  - **Increase Milk Production:** Boosting India's milk output to make the country self-sufficient.
  - **Establish Dairy Cooperatives:** Organizing farmers into cooperatives to eliminate middlemen and ensure fair returns for milk producers.
  - **Provide Access to Markets:** Creating a reliable supply chain to connect rural milk producers directly with urban markets.

### Achievements & Impact:

- **World's Largest Milk Producer:** India's milk production increased from 21 million tonnes in the 1970s to over **220 million tonnes in 2022-23, making it the largest milk producer globally.**
- **Rural Empowerment:** The initiative empowered millions of rural families, providing them with a steady income and improving their livelihoods.
- **Nutritional Benefits:** Enhanced access to milk improved nutritional standards in India, contributing to better public health outcomes.
- **Cooperative Movement and Amul's Role:**
  - The cooperative model, pioneered by Amul under Dr. Kurien, became a cornerstone of the White Revolution.
  - Amul's success in Gujarat was replicated nationwide, inspiring the creation of numerous dairy cooperatives that collectively brought about a milk revolution.
- **Current Status and Challenges:**
  - **Production Growth:** As of 2023, India accounts for approximately 23% of global milk production, with an annual growth rate of around 6.2%.
  - **Challenges:** Despite its success, the sector faces challenges such as:
    - fluctuating milk prices,
    - climate change impacts, and
    - the need for modernization in dairy farming practices.

### White Revolution 2.0:

- Union Home and Cooperation Minister Amit Shah recently launched the standard operating procedure for White Revolution 2.0, a renewed effort to boost the dairy sector in India.
- **Key Objectives of White Revolution 2.0:**
  - **Empower Women:** The initiative seeks to include women involved in milk procurement into formal employment by depositing earnings directly into their bank accounts. This approach aims to provide financial independence to women and formally recognize their contributions.
  - **Increase Milk Procurement:** The program targets an increase in milk procurement by cooperatives from the current 660 lakh liters per day to 1,000 lakh liters.
- **Women's Role in the Dairy Sector:**
  - Amit Shah emphasized the crucial role of women in the dairy industry, particularly in cooperative dairies.
  - **In Gujarat alone, 36 lakh women are involved in dairy activities, contributing to a business worth ₹60,000 crore annually.**
  - The initiative aims to replicate such success nationwide, strengthening cooperative institutions at the panchayat, tehsil, and district levels.
- **Addressing Malnutrition:**
  - One of the significant benefits of White Revolution 2.0 is its potential impact on malnutrition.
  - Amit Shah highlighted that **increasing milk availability would primarily benefit poor and malnourished children.**
  - He stressed that efforts by women, especially mothers, are key to combating child malnutrition, more so than government interventions.

- **Strengthening Cooperative Institutions:**
  - Amit Shah pointed out that the cooperative sector had not received necessary reforms in the past 70 years, leading to uneven success across states.
  - To address this, the government has prepared a proposal for two lakh Primary Agriculture Cooperative Societies (PACS), dairy, and fishery cooperatives, which has been accepted by all states.
  - The **initiative aims to ensure that every panchayat in the country will have a PACS, dairy, or fishery cooperative society, thereby expanding the reach of cooperatives nationwide.**
- **Financial Support and Cooperative Integration:**
  - The government has assured full budgetary support for White Revolution 2.0, recognizing it as a priority area.
  - An important initiative under this program is "**Cooperation among Cooperatives**," tested successfully in Gujarat's **Panchmahal** and **Banaskantha** Key actions included:
    - Opening bank accounts for cooperative sector institutions in cooperative banks.
    - Issuing debit and credit cards to women involved in the Primary Cooperative Society and Milk Producers Committee, strengthening their financial position.
    - Establishing micro-ATMs and promoting digital transactions, enhancing the financial inclusion of women in rural areas.
  - **National Expansion of Cooperative Banking:**
    - Following successful experiments in Gujarat, where over 9 lakh accounts were opened and deposits increased by ₹4,000 crore in cooperative banks, the initiative will now be scaled up nationwide.
    - More than 2,600 micro-ATMs have already been distributed, and similar measures will be implemented across India to empower women financially.

## Conclusion

- White Revolution 2.0 is a significant step towards empowering women, strengthening cooperatives, and addressing malnutrition in India.
- By integrating women into formal employment, enhancing milk procurement, and providing financial support, the initiative aims to transform the dairy sector and contribute to the broader socio-economic development of rural India.

## 10. Rs 6,000-crore scheme to boost precision farming

### Why in news?

The Centre is planning to earmark Rs 6,000 crore to promote precision farming. In this regard, a **Smart Precision Horticulture Programme will be launched by the Union Ministry of Agriculture** under the existing Mission for Integrated Development of Horticulture (MIDH) scheme.

### Precision farming

- **About**
  - Precision farming, also known as **precision agriculture, is a modern agricultural practice that uses advanced technology like GPS, sensors, data analytics, drones, and remote sensing** to monitor and manage crop production with high accuracy.
  - The goal is to **optimize inputs (like water, fertilizers, and pesticides) based on site-specific conditions to maximize yield, minimize waste, and reduce environmental impact.**
- **Benefits**
  - **Increased Productivity:** By monitoring field variability, farmers can tailor inputs to meet the specific needs of crops, leading to improved yield and efficiency.
  - **Resource Optimization:** Precision farming ensures judicious use of water, fertilizers, and pesticides, reducing waste and lowering production costs.
  - **Environmental Benefits:** Reducing the use of chemicals minimizes soil and water contamination, promoting sustainable agricultural practices.

- **Risk Management:** Through real-time data collection and analysis, farmers can make informed decisions, reducing risks related to unpredictable weather and crop diseases.
- **Challenges**
  - **High Initial Cost:** Implementing precision farming technologies requires significant investment in tools and infrastructure, which can be a barrier for small farmers.
  - **Technical Expertise:** Farmers need to be trained to use precision tools, interpret data, and implement the findings in their agricultural practices.
  - **Digital Divide:** Access to reliable internet connectivity, especially in rural areas, limits the adoption of precision farming in many regions.
  - **Data Management:** Processing and interpreting large amounts of data requires specialized software and skills, which are not always available to small-scale farmers.

### Precision farming (PF) in India

- **Context**
  - As a modern approach to farming, **precision agriculture focuses on all aspects of resources (soil, water, nutrients) required for farming.**
  - However, in India, the practice is so far developed for **nutrient-use efficiency (NUE) and water-use efficiency (WUE).**
  - PF in the Indian landscape is yet to become an integral part of mainstream farming systems.
- **Steps taken**
  - The **National Mission on Sustainable Agriculture (NMSA)** and **Pradhan Mantri Krishi Sinchayee Yojana (PMKSY)**, which focus on water-use efficiency and soil health monitoring.
  - The government has also promoted the use of **drones, soil health cards, and satellite-based monitoring.**
  - The government has also announced a **Digital Public Infrastructure (DPI)** for agriculture that will provide farmers with access to technology and information.
  - PF technology is being developed and disseminated through the **22 Precision Farming Development Centres** in the country.
  - The **Agriculture Infrastructure Fund (AIF)**, launched during Covid-19, has provisions for financing infrastructure projects for smart and precision agriculture.
  - Also, funds are released to states/UTs for projects involving use of AI and machine learning, under schemes like the **National e-Governance Plan in Agriculture.**
- **Area Under Precision Farming**
  - Precision farming in India is still at a nascent stage, with a limited area under coverage, mostly in states like **Punjab, Haryana, Maharashtra, and Andhra Pradesh.**
  - The technology has been mainly adopted in large commercial farms and regions with advanced irrigation facilities.
- **Challenges in India**
  - **Fragmented Land Holdings:** The small size of farms in India poses a challenge for the large-scale implementation of precision farming technologies.
  - **Cost and Awareness:** Small farmers often lack awareness and resources to invest in high-tech solutions.
  - **Infrastructure Gaps:** Lack of robust digital infrastructure in rural India limits the reach of precision farming tools.

### Proposal to launch scheme to boost precision farming

- **Scheme to promote precision farming**
  - The Indian government is planning to allocate Rs 6,000 crore to promote precision farming.
    - It will utilize smart technologies like IoT, AI, drones, and data analytics to enhance productivity and resource efficiency while reducing environmental impacts.
  - The **Union Ministry of Agriculture** is working on launching a **Smart Precision Horticulture Programme** under the **Mission for Integrated Development of Horticulture (MIDH).**
- **Coverage**
  - The scheme will cover 15,000 acres of land in five years from 2024-25 to 2028-29 and is expected to benefit about 60,000 farmers.
- **Role of Agriculture Infrastructure Fund (AIF) in promoting precision farming**

- Currently, the AIF has provisions for financing infrastructure projects for smart and precision agriculture.
- Under AIF, individual farmers as well as farmers' communities such as Farmer Producer Organization, Primary Agricultural Credit Societies and SHGs are eligible for loans with interest subvention of 3% for using technological solutions in farm practices.
- **These practices include:**
  - farm/ harvest automation;
  - purchase of drones, putting up specialised sensors on field;
  - use of blockchain and AI in agriculture;
  - remote sensing and Internet of Things (IoT).
- **Collaboration with other countries to promote precision farming in India**
  - The government is also collaborating with countries like the **Netherlands** and **Israel** for advanced farming solutions, with a plan to establish **100 Centres of Excellence (CoEs)** in five years.
  - Already, **32 Indo-Israel CoEs** have been set up in 14 states.

## 11. The Shock of Crumbling Infrastructure and the Solution

### Context

- **India's infrastructure sector is a crucial driver of the country's economic development**, however, recent reports, such as **collapse of several under-construction bridges in Bihar**, raise concerns about the **quality control** and project implementation within this sector.
- These **incidents underscore long-standing issues in infrastructure projects** that could undermine the government's ambitious goal of making India a developed nation by 2047.
- Therefore, **it is important to examine the key challenges in infrastructure development, focusing on time delays, cost overruns, inadequate project management**, and the steps needed to address these gaps, including adopting global best practices and robust program management approaches.

### India's Infrastructure Ambitions and Government Initiatives

- **PM Gati Shakti National Master Plan (NMP)**
  - It is **designed as a comprehensive logistics and transport infrastructure framework**, integrating various ministries and stakeholders under a single platform.
  - The **primary goal is to break the silos in which ministries traditionally operate** and create a unified, multi-modal transport network.
  - By bringing together infrastructure ministries like roads, railways, shipping, and aviation, **PM Gati Shakti aims to ensure seamless connectivity** between different modes of transport, thereby improving logistics efficiency and reducing transportation costs.
  - A key feature of PM Gati Shakti is its **GIS-based ERP portal**, which provides real-time monitoring of projects.
- **National Logistics Policy (NLP)**
  - The NLP **complements the objectives of PM Gati Shakti by focusing on improving the efficiency of the logistics sector**, which is crucial for driving economic growth.
  - **India's logistics costs are currently among the highest in the world**, making goods more expensive for domestic consumers and less competitive internationally.
  - The **policy seeks to reduce logistics costs from around 13-14% of GDP to single digits**, in line with global standards.
  - The **NLP outlines a roadmap for creating an efficient and integrated logistics ecosystem** by focusing on four key areas:
    - **Optimising modal mix** (using the right balance of road, rail, air, and water transport),
    - **Improving logistics infrastructure** by creating modern logistics parks, multimodal hubs, and warehousing facilities,
    - **Leveraging technology** through digitisation of logistics processes, and
    - **Enhancing skill development** for the logistics workforce.

- By integrating the logistics sector with digital platforms like the **Unified Logistics Interface Platform (ULIP)** and **e-logs**, the policy ensures real-time data sharing and coordination between different stakeholders.
- **Smart Cities Mission**
  - Another significant initiative aimed at upgrading India's infrastructure is the **Smart Cities Mission**, which **seeks to promote sustainable and inclusive urban development**.
  - With **urban areas projected to account for nearly 40% of India's population by 2030**, this mission is designed to **address the challenges posed by rapid urbanisation**, such as congestion, pollution, and strained public services.
  - The **Mission** focuses on creating **smart urban infrastructure** through technology-driven solutions in areas such as traffic management, energy efficiency, water conservation, and public safety.
  - The **100 Smart Cities** initiative is particularly noteworthy because it seeks to transform selected cities into **model urban centres** that can serve as templates for other cities to follow.
- **Increased Capital Expenditure: ₹11.11 Lakh Crore in Budget 2024**
  - The government's commitment to infrastructure development is evident in its **2024 budget**, where capital expenditure was **allocated a record ₹11.11 lakh crore**, equivalent to 3.4% of GDP.
  - This is a **significant increase from previous years and underscores the government's recognition of the role infrastructure** plays in driving economic growth.
  - The **substantial allocation reflects the government's intent to stimulate economic recovery post-pandemic** by boosting construction, transportation, and industrial projects.

### Key Challenges in Infrastructure Development

- **Time Delays and Cost Overruns**
  - A report from the Ministry of Statistics and Programme Implementation reveals that **as of December 2023, 431 infrastructure projects—each involving investments of ₹150 crore or more—suffered a combined cost overrun of ₹4.82 lakh crore**.
  - Delayed projects accounted for a significant proportion, with 36% running behind schedule by 25 to 60 months, and 15% delayed by over 60 months.
- **Lack of Comprehensive Planning and Management**
  - Urban infrastructure projects, in particular, **frequently reveal shortcomings in planning by urban local bodies**.
  - **Comprehensive planning**, which includes accurate cost estimation, resource allocation, and risk management, **is often overlooked during the initial stages of these projects**.
  - Insufficient attention to these crucial elements inevitably leads to disruptions, with cascading effects on both time and costs.

### Steps Required to Address Challenges in Infrastructure Development

- **Overhaul of Traditional Project Management Practices**
  - The existing traditional project management practices in India are **often inadequate for dealing with the scale and complexity of modern infrastructure projects**.
  - They rely heavily on outdated methods that lack real-time data integration and monitoring tools and **to address this, an overhaul of these practices is urgently needed**.
  - Modern project management tools, including **real-time data management and data analytics**, are essential to monitor progress and adjust for challenges as they arise.
  - While some organisations have recognised this and are implementing short-term programs to upskill their teams, **a broader push toward integrating modern management techniques is required** across the public sector and **public-private partnerships (PPPs)**.
- **Adopting Global Best Practices**
  - Countries like the United Kingdom, China, and Saudi Arabia have set up **specialised agencies for end-to-end project delivery**.
  - For example, **the UK's Infrastructure and Projects Authority emphasises streamlined processes for project completion**, which India could emulate.
  - Such agencies help ensure projects are completed within stipulated timeframes and budgets, reducing inefficiencies.

- India's **PM Gati Shakti** initiative offers a promising step in this direction. It aims to break the silos between government ministries by creating an integrated platform for all stakeholders.
- The **GIS-based ERP portal** under this initiative monitors the real-time progress of various projects and ensures that departments remain on track to meet their targets.
- While this system is a significant advancement, **it must be supported by stringent quality controls and greater accountability** to prevent the recurrence of incidents like bridge collapses.
- **Program Management Approach**
  - To address the challenges in infrastructure project execution, a more **holistic approach** is needed.
  - One such strategy is the **Program Management Approach**, which coordinates resources, timelines, budgets, and activities across multiple projects.
  - This approach was successfully implemented in the **Shendra-Bidkin Industrial Corridor** in Maharashtra, where nine packages were managed simultaneously, integrating various project components in a disciplined and systematic manner.
  - **To institutionalise program management** across India's infrastructure sector, **the government could consider establishing an agency dedicated to project management training and certification.**
  - This could be modelled after professional bodies like the **Institute of Chartered Accountants of India** or the **Chartered Engineers Institutes** in other countries.

### Conclusion

- While the government's commitment through initiatives like the PM Gati Shakti and substantial capital allocation is evident, **the challenges of time delays, cost overruns, and inefficient project management continue to hinder progress.**
- **Addressing these issues will require an overhaul of traditional project management practices, greater coordination among stakeholders, and the adoption of global best standards.**
- **By improving project execution and preventing avoidable failures, India can create future-ready infrastructure** that paves the way for an affluent and safe future for its citizens, aligning with its vision of becoming a developed nation by 2047.

## 12. Making India a Start-Up Nation

### Context

- **India's economic growth over the last decade** has been shaped by pivotal developments like the **Unified Payments Interface (UPI), affordable data access, and the COVID-19 pandemic**, which accelerated the growth of e-commerce and startups.
- Together, **these once-in-a-generation events have created a unique opportunity for India** to capitalise on its momentum and build a sustainable roadmap for future growth.
- However, **sustaining this trajectory requires comprehensive integration of key subsystems, including education, entrepreneurship, and employment (the 3E model)**, which can be the foundation for India's exponential economic rise.

### Key Catalysts of Economic Growth

- **Government-Led Digital Revolution: The Rise of UPI**
  - One of the most significant government-led initiatives **has been the creation and widespread adoption of the UPI.**
  - Launched in 2016 by the National Payments Corporation of India (NPCI), **UPI is a real-time payment system that allows users to instantly transfer money** between bank accounts using a mobile device.
  - It has **revolutionised the way Indians conduct transactions**, making financial services more accessible to millions of citizens, particularly in rural and underserved areas.
- **Industry-Led Telecom Revolution: Affordable Data Access**
  - The telecom revolution in India, **primarily driven by the launch of Reliance Jio in 2016, has been another key catalyst for economic growth.**

- **By offering high-speed internet** at some of the world's lowest prices, **the telecom industry has transformed India's digital landscape.**
- Affordable data access has **brought millions of people online**, creating a massive market for digital services and applications.
- Before this revolution, **internet access was restricted to urban areas and was largely unaffordable for most of the population.**
- However, with the advent of low-cost mobile data, India's internet user base has exploded, with over 800 million internet users and more than 1.2 billion mobile phone users today.
- **Pandemic-Driven E-commerce and Startup Boom**
  - **The COVID-19 pandemic**, while devastating in many respects, **served as an unexpected accelerator for India's e-commerce and startup sectors.**
  - The **global health crisis forced a shift toward digital solutions** as lockdowns and social distancing measures made traditional business operations challenging.
  - **E-commerce, digital payments, and online services surged in demand** as consumers increasingly turned to the internet to meet their needs.
- **Capital Expenditure and Infrastructure Development**
  - Another crucial factor behind India's recent economic growth has been the **government's emphasis on capital expenditure, particularly in the infrastructure sector.**
  - **Public investment in infrastructure** - such as roads, highways, ports, and railways - has not only **improved connectivity across the country but also created jobs and stimulated economic activity.**
  - The **government's focus on infrastructure development has attracted private investment and supported the growth** of sectors like construction, logistics, and manufacturing.

#### **Challenges and Opportunities in Employment and Education**

- **The Demographic Advantage: Opportunities for Growth**
  - India's youth population offers immense potential for economic growth.
  - With an estimated 43 million students enrolled across more than 1,100 universities and 45,000 colleges, **India's higher education system is one of the largest in the world.**
  - Each year, **around 10 million graduates enter the workforce**, and this number is expected to grow to 17.5 million by 2035 and 24 million by 2050.
  - **These statistics demonstrate the scale of India's human capital**, which, if harnessed effectively, can drive productivity, innovation, and economic expansion.
- **The Challenge of Employment: A Mismatch in Job Creation**
  - One of the **most pressing challenges facing India is the insufficient growth of employment opportunities** to absorb the increasing number of graduates entering the workforce.
  - While India's economy has expanded, and sectors such as services, manufacturing, and technology have seen growth, **the pace of job creation has not kept up with the influx of new workers.**
  - **A significant number of graduates struggle to find jobs that match their skills and qualifications**, leading to underemployment or employment in sectors that do not utilize their full potential.
- **The Skills Gap: Preparing the Workforce for the Future**
  - In addition to the employment mismatch, **India faces a significant skills gap that limits the employability of its graduates.**
  - The **traditional education system in India has historically emphasised theoretical knowledge over practical, hands-on learning.**
  - As a result, **many graduates lack the skills required by industries** that are increasingly driven by technology and innovation.
  - **This disconnect between academic training and industry needs worsens the employment problem**, as companies struggle to find candidates with the right skill sets.

#### **The Path Forward**

- **Entrepreneurship as a Solution: Creating New Opportunities**
  - One of the most promising solutions to the employment challenge is **creating a culture of entrepreneurship.**



- With job creation unable to keep pace with the growing number of job seekers, **encouraging graduates to pursue entrepreneurial ventures can generate new employment opportunities** and stimulate economic growth.
- **Startups and small businesses have the potential to create jobs** not only for their founders but also for others, contributing to overall employment generation.
- To encourage more students to pursue entrepreneurship, **India must reframe the way it measures the success of its higher education institutions.**
- Traditionally, **universities and colleges are ranked based on their ability to place students in high-paying jobs.**
- However, **this metric overlooks the value of developing entrepreneurial ventures**, which can have a far-reaching impact on employment and economic development.
- **Transformation of Higher Education**
  - The higher education system in India **must undergo a transformation to meet the evolving needs of the economy and the workforce.**
  - Currently, **the primary success metric for higher education institutions (HEIs) is their ability to place graduates** in high-paying jobs.
  - While this is important, **it overlooks the role that HEIs can play in fostering entrepreneurship and innovation.**
  - To better align higher education with the demands of the modern economy, **institutions should incorporate entrepreneurship, research, and innovation into their curricula.**
  - This **would require a shift in focus from purely academic learning to practical**, real-world problem-solving.
  - **Universities should encourage students to engage in entrepreneurial activities**, provide access to incubation centres, and offer mentorship from industry experts.
- **Harnessing the Power of Digital Education**
  - Another key opportunity lies in the rapid expansion of digital education.
  - The **telecom revolution has made internet access more affordable and widespread**, even in rural areas.
  - **This has opened up new possibilities for online learning**, which can help bridge the skills gap and provide students with access to high-quality education regardless of their geographic location.
  - **Digital education platforms can offer courses in emerging technologies, entrepreneurship, and vocational skills, providing students with the tools they need to succeed** in the modern workforce.

### Conclusion

- **India stands at the threshold of unprecedented economic opportunity**, driven by its demographic dividend, expanding digital infrastructure, and burgeoning startup ecosystem.
- However, **sustaining and accelerating this growth requires a strategic focus on integrating education, entrepreneurship, and employment.**
- **By rethinking the success metrics of higher education and fostering a culture of innovation and entrepreneurship, India can create millions of jobs, elevate its global economic standing, and ensure inclusive, long-term prosperity.**

## 13. India's Digital Public Infrastructure: How to Ensure Healthy Competition

### Context

- **During its G20 presidency, India has showcased digital public infrastructure (DPI) as a key tool for promoting inclusive and sustainable development.**
- DPI's **significance lies not just in its technological capabilities** but also in its ability to enhance public and private service delivery.
- While **DPI has been a success story in India, its rapid growth raises critical questions about competition, regulation, data privacy, and the balance between innovation and control.**

### The Structure of DPI and Achievements and Expansions of DPI in India

- **Structure of DPI**
  - **Foundational Structure**

- Digital Public Infrastructures in India can be broadly **categorised into foundational and sectoral types**.
- Foundational DPIs, such as **Aadhaar, Unified Payments Interface (UPI), and the Data Empowerment and Protection Architecture (DEPA)**, establish essential digital rails that facilitate identity verification, payment systems, and data exchange platforms.
- **These infrastructures form the backbone of India's digital ecosystem**, ensuring that various services are accessible to the population at large.
- **Sectoral DPIs**
  - **Sectoral DPIs, on the other hand, cater to specific sectors**, providing specialized services tailored to the needs of those areas.
  - The **Ayushman Bharat Digital Mission, for example, focuses on universal health coverage by utilising these digital rails**.
  - Another **notable example is the CoWIN platform**, which leveraged Aadhaar-based authentication to administer over 2.2 billion COVID-19 vaccines across the country.
  - **These DPIs highlight the transformative impact of digital infrastructure** on public service delivery.
- **Achievements and Expansions of DPI in India**
  - **India's achievements in the DPI space are remarkable and with over 1.3 billion Aadhaar enrolments** and more than 10 billion UPI transactions conducted monthly, the country has made significant strides in digital transformation.
  - The **Indian government continues to expand DPIs into new areas such as credit, e-commerce, education, health, law, logistics, MSME services**, and urban governance, as outlined in the Finance Minister's budget speech.
  - However, **despite these successes, certain issues merit attention**.
  - **DPIs, by their very nature, serve as platforms enabling other entities to build digital applications** and services on top of existing infrastructure.
  - This **platform-like role facilitates rapid innovation and value creation** through public-private partnerships.
  - However, **it also introduces the risk of market concentration**, where a few players may dominate the ecosystem, leading to monopolistic or oligopolistic outcomes.

#### **Challenges of Market Concentration and Competition**

- **Network Effects and Winner-Takes-All Dynamics**
  - **One of the most significant challenges** posed by DPIs is **their inherent network effects, which can lead to a winner-takes-all dynamic**.
  - In the context of DPIs, **network effects occur when the value of the platform increases as more participants use it**.
  - This **characteristic is particularly evident in payment systems** like the UPI.
  - **As more users and merchants adopt UPI, the platform's value grows, attracting even more users** and reinforcing the position of dominant players.
  - This **self-reinforcing cycle can lead to market concentration**, where a few companies gain disproportionate control over the market.
- **Barriers for New Entrants**
  - In India, the UPI system has **already led to the emergence of a virtual duopoly**, where two major service providers dominate the market.
  - **These firms have capitalized on the network effects**, capturing significant market share, and creating barriers for new entrants.
  - **As these companies continue to grow, they accumulate vast amounts of user data**, which can be leveraged to expand into other sectors, such as retail lending or e-commerce.
  - This **cross-sectoral expansion further strengthens their market position**, making it even more challenging for competitors to gain a foothold.
- **Monopolistic Tendencies and the Risk of Oligopolies**
  - The concentration of market power among a few dominant players raises concerns about monopolistic tendencies and the formation of oligopolies.

- In such a scenario, **the dominant firms can exert significant control over the market, potentially stifling competition, and innovation.**
- For example, **in the payments sector, the dominance of a few companies could lead to practices that disadvantage smaller competitors**, such as preferential access to essential data, exclusive partnerships, or anti-competitive pricing strategies.
- **Reduced Consumer Choice**
  - Monopolistic tendencies **can result in reduced consumer choice and higher costs for services in the long run.**
  - **While the initial adoption of DPI-driven services like UPI may offer consumers low-cost or even free services, the lack of competition could eventually lead to price increases or a reduction in service quality.**
  - **This could undermine the very goals of inclusivity and accessibility that DPIs were designed to achieve.**
- **Accumulation of Vast Data by a Dominant DPI Service Provider**
  - Data is a crucial asset in the digital economy, **and the accumulation of vast amounts of user data by dominant DPI service providers presents another significant challenge.**
  - **Data serves as a modular input that can be used to enhance existing services or develop new ones, giving companies with extensive data access a competitive edge.**
  - **In the absence of strong regulatory oversight, these firms can use their data advantage to entrench their market position**, making it difficult for new entrants to compete.
- **Regulatory Challenges**
  - **The emergence of monopolistic or oligopolistic structures in the DPI ecosystem challenges the very purpose of these infrastructures**, which is to foster competition and inclusivity.
  - **Addressing these challenges requires a nuanced regulatory approach** that can adapt to the rapidly evolving digital landscape.
  - **India's G20 Task Force on Digital Public Infrastructure has recognised the importance of creating a level playing field** for all participants in the digital ecosystem.
  - This includes ensuring that no single entity has undue control or influence over digital infrastructure.

#### **Steps Required to Facilitate a Healthy Competition**

- **Regulations to Prevent Anti-Competitive Practices**
  - **Regulatory frameworks must be designed to prevent anti-competitive practices**, such as data hoarding, predatory pricing, and the exclusion of competitors.
  - **Additionally, these frameworks should promote transparency** in how data is collected, shared, and used by DPI service providers.
  - **Ensuring interoperability between different platforms can also help prevent market concentration** by making it easier for new entrants to compete.
- **Balancing Innovation with Regulation**
  - While addressing the challenges of market concentration and competition is crucial, **it is equally important to strike a balance between regulation and innovation.**
  - **Overly stringent regulations could stifle the very innovation** that has driven the success of DPIs in India.
  - Therefore, **a flexible regulatory approach that encourages innovation while safeguarding against the risks of market concentration is essential.**
- **Adoption of 'Soft-Law' Instruments**
  - One potential solution is the **adoption of soft law instruments, which provide guidelines and best practices for industry players without imposing rigid rules.**
  - These **instruments can encourage responsible behaviour among DPI service providers** while allowing them the flexibility to innovate and adapt to changing market conditions.
  - For example, **guidelines on data privacy, security, and interoperability can help prevent anti-competitive practices** without hindering the growth of the digital economy.

#### **Conclusion**

- **The rapid expansion of Digital Public Infrastructure in India represents a significant achievement** in the country's digital transformation journey.
- However, **the potential for market concentration, data privacy concerns, and the need for a balanced regulatory approach must be addressed** to ensure that DPIs fulfil their promise of inclusive and sustainable development.

- A nuanced governance framework that blends statutory regulations with soft law principles can help India navigate the challenges of this new digital era, ensuring that DPIs remain a force for good while minimising potential risks to society.

## 14. The Grave Threat from Antimicrobial Resistance

### Why in the News?

- Ahead of the September 26 UN General Assembly High-Level Meeting on antimicrobial resistance, the **World Health Organization published its first-ever guidance on antibiotic pollution from manufacturing.**

### Brief History of Antibiotics and Resistance:

- **Penicillin**, the first commercialized antibiotic, was discovered in 1928 by **Alexander Fleming**.
- Ever since, there has been discovery and acknowledgement of resistance alongside the discovery of new antibiotics.

### Antimicrobial Resistance (AMR):

- Antimicrobials – including **antibiotics, antivirals, antifungals and antiparasitic** – are medicines used to prevent and treat infections in humans, animals and plants.
- **Antimicrobial Resistance (AMR) occurs when bacteria, viruses, fungi and parasites change over time and no longer respond to medicines** making infections harder to treat and increasing the risk of disease spread, severe illness and death.
- As a result of drug resistance, antibiotics and other antimicrobial medicines become ineffective and infections become increasingly difficult or impossible to treat.

### Causes of AMR:

- **Selective Pressure:**
  - In the presence of an antimicrobial, **microbes are either killed or, if they carry resistance genes, survive.**
  - These survivors will replicate, and their progeny will quickly become the dominant type throughout the microbial population.
- **Mutation:**
  - Most microbes reproduce by dividing every few hours, allowing them to evolve rapidly and adapt quickly to new environmental conditions.
  - During replication, mutations arise and some of these mutations may help an individual microbe survive exposure to an antimicrobial.
- **Inappropriate Use:**
  - Unnecessary and injudicious use of antibiotic fixed dose combinations could lead to emergence of bacterial strains resistant to multiple antibiotics.
- **Hospital Use:**
  - Critically ill **patients** are more susceptible to infections and, thus, often require the aid of antimicrobials.
  - However, extensive use of antimicrobials and close contact among sick patients creates a fertile environment for the spread of antimicrobial-resistant germs.
- **Agricultural Use:**
  - Scientists also believe that the practice of adding antibiotics to agricultural feed promotes drug resistance.

### Prevention & Control:

- Steps can be taken at individual as well as State level to reduce the impact and limit the spread of resistance:
- **Individuals:**
  - Only use antibiotics when prescribed by a certified health professional.
  - One should always follow the health worker's advice while using antibiotics.
  - One can prevent infections by regularly washing hands, preparing food hygienically, avoiding close contact with sick people, and keeping vaccinations up to date.

- **Policy Makers:**

- Ensure a **robust national action plan to tackle antibiotic resistance.**
- Improve surveillance of antibiotic-resistant infections.
- Strengthen **policies, programmes, and implementation of infection prevention** and control measures.
- Regulate and promote the appropriate use and disposal of quality medicines.
- Make information available on the impact of antibiotic resistance.

**What are the Most Common Resistant Pathogens in India?**

- **The three most common pathogens isolated in patient samples from tertiary care centres in the ICMR surveillance network are:**
  - **coli** - can cause gut infections;
  - **Klebsiella pneumoniae** - can cause pneumonia and urinary tract infections; and
  - **Acinetobacter baumannii**- mainly associated with hospital acquired infections

**Major initiatives taken by India to combat AMR:**

- **National Action Plan on Antimicrobial Resistance (NAP-AMR):**
  - Government of India launched **National Action Plan in 2017**, two years after the WHO launched its Global Action Plan on AMR.
  - **The Indian NAP focuses on six strategic priority areas:**
    - Awareness and understanding through **education, communication and training,**
    - Strengthening knowledge and evidence through surveillance,
    - Infection prevention and control,
    - Optimised antimicrobial use in health, animals and food,
    - AMR-related research and innovation and
    - Strengthened leadership and commitment at international, national and sub-national levels.
  - **National Centre for Disease Control (NCDC)**, New Delhi is the focal point for implementation and coordination of the NAP-AMR.
- **Red Line Campaign:**
  - Under the Red Line Campaign, the **Government of India urges people not to use medicines marked with a red vertical line, without a doctor's prescription.**
  - To check the irrational use of antibiotics, the 'red line' will help the users to differentiate them from other drugs.
  - This campaign is **aimed at discouraging unnecessary prescription and over-the-counter sale of antibiotics** causing drug resistance for several critical diseases including TB, malaria, dengue, etc.

# PRELIMS BOOSTER-THE HINDU & INDIAN EXPRESS

## 3 SEPTEMBER

### 1. India Post Payment Bank

Established under the **Department of Posts, Ministry of Communication** with 100% equity owned by the Government of India. **Aims to provide every household in India an access to efficient banking services** and enable them to become **financially secure and empowered** by leveraging postal network of 1,61,000+ Post Offices.

**Services offered:** Saving/Current account, Direct Benefits Transfers, Bill and Utility Payments, access to 3rd Party products such as loans, insurance, etc

### 2. Windfall Tax

The Centre has reduced the windfall tax on domestically produced crude oil.

#### About Windfall Tax

A **windfall tax is a tax imposed by governments on certain industries that experience significantly above-average profits due to favorable economic conditions.**

The purpose is to redistribute excess profits in one area to raise funds for the greater social good. Governments justify the tax by asserting that these profits are not solely due to the taxed entity's efforts but also **due to external factors.**

### 3. Polygraph Test

CBI has recently conducted polygraph tests, in connection with the rape of a resident doctor at the R.G. Kar Medical College in Kolkata. It is one of the deception detection tests, which also includes **Narco-analysis and brain-mapping.**

#### About Polygraph tests

It operates on the presumption that **specific physiological responses are triggered when a person is lying.** Tests measure physiological responses like **blood pressure, sweat, breathing, and pulse rate, to determine truthfulness or deception.** However, the efficacy of such tests remains contentious in the medical field.

### 4. DNA Repair

Recently, scientists have discovered a new target for cancer treatment which is used by cancer cells to regulate DNA repair during Cell division. **Cancer cells use the enzyme TDP1 to repair DNA damage caused by chemotherapy drugs like camptothecin, leading to treatment resistance.**

#### About DNA Repair

DNA repair is a mechanism of a cell to maintain the integrity of its genetic code. **It exists in both prokaryotic and eukaryotic organisms.** DNA repair ensures the survival of a species. **3-types of repair mechanisms: direct reversal of the damage, excision repair, and post-replication repair.**

## 4 SEPTEMBER

### 1. E shram Portal

E shram has achieved over 30 crore registrations in the span of just 3 years. **Envisaged as "One-Stop-Solution" for Country's unorganised workers** Seeks to create a National Database of Unorganized Workers (NDUW), including **migrant workers, construction workers, gig and platform workers, etc.** The NDUW will be seeded with Aadhaar.

**Launched by:** Ministry of Labour & Employment

**Aim:** to facilitate access of various social security schemes being implemented by different Ministries/ Departments to unorganised workers like **Pradhan Mantri Jeevan Jyoti Bima Yojana, Pradhan Mantri Suraksha Bima Yojana, Ayushman Bharat etc.**

### 2. Investor Education and Protection Fund Authority (IEPFA)

IEPFA has launched a new five-digit toll-free number 14453 — to better serve claimant queries.

#### About IEPFA

Under aegis of the **Ministry of Corporate Affairs.** Established under the Companies Act, 2013. **Responsible for managing the Investor Education and Protection Fund (IEPF).** IEPF focuses on safeguarding investor interests by facilitating the refund of shares, unclaimed dividends, and matured deposits/debentures. Through its initiatives, the **IEPFA**

aims to ensure transparency, protect investors' rights, and promote financial literacy across the country.

### 3. Cocoa

Scientists are working to grow cocoa beyond the tropics and make the crop more resilient.

#### About Cocoa (*Theobroma cacao* L.)

A tropical and perennial crop, mainly grown in African continent. In India, mainly grown in southern states.

**Origin:** Native of the Amazon region of South America.

#### Climatic Requirements:

- **Rainfall:** Average rainfall of 1250-3000 mm. per annum, distributed throughout the year.
- **Temperature:** 15-39°C with optimum temperature is around 25° C.
- **Soil:** Predominantly grown on clay loam and sandy loam soils.
- **Other:** Can withstand flooding, but can't tolerate stagnant, waterlogged conditions.

### 4. Geographic Information System (GIS)

NHAI will track around 100 toll plazas with GIS-based software for seamless movement of traffic at National Highways. **GIS (under the larger umbrella of Geospatial Technologies) is a computer-based tool for mapping and analyzing things that exist and events that happen on Earth.** GIS can show many different kinds of data on one map, such as streets, buildings, and vegetation.

**Examples of GIS Systems in India:** PARIVESH, e-Green Watch and Van Agni Geo-portal of MoEF&CC, Gram Manchitra by Ministry of Panchayati Raj.

## 5 SEPTEMBER

### 1. IndOBIS

**Centre for Marine Living Resources and Ecology (CMLRE), an attached office of the Union Ministry of Earth Sciences, has developed Ocean Eyes mobile application. It is a community-engagement approach to data collection in marine biodiversity monitoring.** It is aligned with the objective of IndOBIS (Indian Ocean Biodiversity Information System).

#### About IndOBIS

IndOBIS is the Indian regional node of the global Ocean Biodiversity Information System (OBIS). It is

being run by CMLRE, Kochi. OBIS emanated from the Census of Marine Life (2000-2010). **Adopted as a project under IOC-UNESCO's International Oceanographic Data and Information (IODE) programme in 2009.** Provides free and open access to, and application of, biodiversity and biogeographic data and information on marine life.

### 2. SCOMET List (Special Chemicals, Organisms, Materials, Equipment, and Technologies)

DGFT (Ministry of Commerce & Industry) authorized the **Department of Defence Production (MoD)**, to be the licensing authority for **export of all items falling under Category 6 of SCOMET for military end use.**

#### About SCOMET

National Export Control List of dual use items munitions and nuclear related items, including software and technology Aligned to all the multilateral export control regimes such as **Missile Technology Control Regime, Wassenaar Arrangement, Australia Group etc. Has 9 categories (0 to 8).** Notified by DGFT under Schedule 2 of ITC (HS) Classification of Export and Import Items. **Regulated under of Foreign Trade (Development & Regulation) Act, 1992. Policy and procedures under SCOMET are outlined Foreign Trade Policy 2023.**

### 3. Gross Fixed Capital Formation

Recently, World Bank projected a decline in Gross Fixed Capital Formation (GFCF) in Indian Economy for FY25.

#### About GFCF

**Also called 'investment', it is defined as acquisition of produced assets (including purchases of second-hand assets), including production of such assets by producers for their own use, minus disposals. (OECD) "Produced assets" means only those assets that come into existence as a result of a production process.** It therefore does not include, for example, the purchase of land and natural resources. It includes assets intended for use in production of other goods and services for a period of more than a year. **E.g., Land improvements (fences, ditches, drains, and so on); plant, machinery, and equipment purchases; construction of roads, railways, etc.**

### 4. Oceanic Nino Index (ONI)

Recently, the impact of El Nino and La Nina on the Indian monsoon is being studied. **ONI is a vital index to study the dynamics of El Nino-Southern Oscillation (ENSO).**

#### **About ONI**

It is the **National Oceanic and Atmospheric Administration's (US agency) primary indicator for monitoring ENSO.** The ONI is the rolling 3-month average temperature difference in the surface waters of the east-central tropical Pacific, near the International Dateline. **Index values of +0.5 or higher indicate El Niño. Values of -0.5 or lower indicate La Niña.**

### **6 SEPTEMBER**

#### **1. Open Network for Digital Commerce (ONDC)**

ONDC awarded Gold Award under category "Application of Emerging Technologies for Providing Citizen-Centric Services" in National Awards for e-Governance by **Department of Administrative Reforms and Public Grievances.**

#### **About ONDC**

**Aims at promoting open networks for all aspects of exchange of goods and services over digital or electronic networks.** Expected to make e-Commerce more inclusive and accessible for consumers. It is an **initiative of the Department of Promotion of Industry and Internal Trade.** ONDC was incorporated as a Section 8 (not for profit) company with the Quality Council of India and Protean eGov Technologies Limited as Founding Members.

#### **2. Centralised Pension Payment System (CPPS)**

Ministry of Labor and Employment approved CPPS for Employees' Pension Scheme.

#### **About CPPS**

It establishes a **national-level centralized system enabling pensioners to receive their pensions from any bank, any branch, anywhere in the country.** Existing pension disbursement system is decentralized, with each zonal/regional office of EPFO maintaining separate agreements with only 3-4 banks. It will **be launched as part of EPFO's Centralized IT Enabled System (CITES 2.01) from 1st January 2025.** In the next

phase, CPPS will enable a smooth transition to Aadhaar-based payment system (ABPS).

#### **3. Pharmacopoeia Commission for Indian Medicine & Homoeopathy (PCIM&H)**

The PCIM&H has achieved the Bureau of Indian Standards (BIS) Integrated Management System (IMS) Certifications.

#### **About PCIM&H**

**Subordinate office under Ministry of AYUSH.** Institution for establishing and maintaining standards for Indian medicine and homoeopathy. Act as Central Drug Testing cum Appellate Laboratory for IM&H. **Imparts capacity building training to drug regulatory authorities engaged in quality control pertaining to IM&H.** Maintains an authentic Reference Raw Materials (RRM) Repository for IM&H.

**Note: Indian Pharmacopoeia Commission (IPC) is a separate Autonomous Institution of the Ministry of Health and Family Welfare, responsible to set standards of drugs in the country.**

#### **4. India Graphene Engineering and Innovation Centre (IGEIC)**

**Ministry of Electronics and Information Technology (MeitY) launched IGEIC under the Graphene Aurora program (GAP).** GAP was launched in 2022 to nurture the deep/emerging Graphene technology & innovation ecosystem. It is **implemented by Digital University Kerala.**

#### **About IGEIC**

Incorporated as not for profit, section 8 company in Trivandrum, Kerala. **Aims to create a hub of excellence in graphene technology commercialization.** It shall fill the gap between R&D and commercialization by providing a complete facility to startup and industry. **Earlier MeitY had launched India's first graphene centre-the India Innovation Centre for Graphene (IICG) in Kerala.**

#### **5. Phrynarachne decipiens**

Phrynarachne decipiens has been recorded for the first time in the country from Assam's Kamrup district and Kokrajhar district.

#### **About Phrynarachne decipiens**



**Popularly known as the bird dung or bird-dropping crab spider.** Spiders of the genus *Phrynarachne* resemble a blob of bird dropping, and even smell like feces or urine. This may help it attract and ambush prey, and avoid the notice of predators. **Generally found in Malaysia and Indonesia's Java and Sumatra.**

## 10 SEPTEMBER

### 1. Silicon Carbide:

India's 1st silicon Carbide manufacturing facility to be set up in Odisha

#### Silicon Carbide (SiC)

**Also known as carborundum**, it is an exceedingly hard, synthetically produced crystalline compound of silicon and carbon.

**Properties:** Excellent thermomechanical characteristics, including **high thermal conductivity, excellent mechanical properties, excellent resistance to wear and oxidation.**

**Applications:** semiconductor devices, mechanical seals, structural ceramics, heat exchangers, optical mirrors, ballistic armor, etc.

### 2. Certificate of Deposit

Bank's Certificates of Deposit issuance increased nearly 3-time in FY24 as compared to FY22.

#### About Certificates of Deposit (CDs)

CDs are **negotiable, unsecured money market instrument**, issued by a bank as a promissory note against **funds deposited with it for a maturity period up to one year.**

**Issued by:** Scheduled Commercial Banks; Regional Rural Banks; Small Finance Banks, and All-India Financial Institutions. CDs shall be issued in minimum denomination of ₹5 lakh & in multiples of ₹5 lakh thereafter.

**Tenor:** Minimum 7 days and maximum 1 year.

### 3. Sahariya Tribe

Recently, More than 100 cases of malnourished children among Sahariya tribe have been reported from **Baran district of Rajasthan.**

#### About Sahariya Tribe

**Sahariyas are one of the PVTGs that are mostly inhabited in Madhya Pradesh, Uttar Pradesh, and Rajasthan.** PVTGs are tribal communities that show either a declining or stagnant population, use of pre-agrarian technology, economic backwardness, and low literacy. **Generally reside in separate basti in the village, called Saharana.**

**Economic activities:** Agriculture (primarily rainfed), collection of minor forest produce, etc.

### 4. Water Spinach

Water spinach now reached the door of the farmers with the technology developed by the **Indian Institute of Vegetable Research (IIVR).**

#### About Water spinach

Native to tropics and subtropics, this **semi-aquatic perennial plant is believed to have been the first domesticated in Southeast Asia.**

#### Benefits

- Rich in **folic acid (vitamin B9)**; Contains medium levels of beta carotene, calcium, vitamin E and C.
- Helps prevent **neural tube defects** in unborn children.
- Being rich in iron, it's beneficial for people with anemia.
- Has great potential as a **purifier of aquatic habitats.**

## 11 SEPTEMBER

### 1. Monkeypox (MPox)

The Ministry of Health advisory directed all States and UTs to review their public health preparedness for MPox. **WHO recently declared a public health emergency for 'clade 1' MPox.**

#### About MPox

It is a **zoonotic disease caused by monkeypox virus of genus Orthopoxvirus.** (same family of smallpox but not related to chickenpox)

#### Virus Types:

**Clade 1:** Historically, caused a higher number of severe illnesses than clade 2. However, recent outbreaks have lower death rates. Responsible for current rise in cases in **Central and Eastern Africa.**

**Clade 2:** Endemic to West Africa, infections are generally less severe with very low mortality rates.

## 2. GST Council

The **54th meeting of the GST Council was recently convened.**

### Key Recommendations Made in Meeting:

- **Formation of Group of Ministers on Life and Health Insurance** and to study future of Compensation Cess.
- **Reduction in GST rates on cancer drugs** - Trastuzumab, Deruxtecan, Osimertinib and Durvalumab from **12% to 5%.**

### About GST Council:

Constitutional body established under **Article 279 (A) of Constitution through 101st Constitutional Amendment Act, 2016.** Constituted by President with Union Finance Minister as Chairperson.

**Objective:** Responsible for setting tax rates, making policy decisions related to GST and making to center and states.

## 3. National Statistical Commission (NSC)

**Genesis:** Set up through a resolution in 2005.

Setting up of NSC followed the decision of Cabinet to accept the **recommendations of Rangarajan Commission**, which reviewed the Indian Statistical System in 2001.

**Mandate:** To evolve policies, priorities, and standards in statistical matters.

**Ministry:** MoSPI.

**Chief Statistician of India is the Secretary of the Commission.**

**Composition:** 4 Members besides a Chairperson, each having specialization and experience in specified statistical fields.

## 4. Elongated Tortoise (*Indotestudo elongata*)

It was spotted during a research survey in **Aravallis, Haryana.**

### About Elongated Tortoise

#### Physical Characteristics:

Medium-sized having yellowish brown or olive shell and distinct black blotches at the centre.

**Habitat:** Sal deciduous and hilly evergreen forests, distributed across northern India, Nepal, Bhutan, Bangladesh, Myanmar, Thailand, China and Malaysia.

**Threat:** Heavily exploited and hunted for food and traditional medicines.

### Conservation Status:

**IUCN Red List:** Critically Endangered.

**WPA, 1972:** Schedule I (mentioned as Sal forest tortoise).

## 12 SEPTEMBER

### 1. Sanchar Saathi

Recently, more than one crore fraudulent mobile connections disconnected with help of **Sanchar Saathi Sanchar Saathi**

**Launched by:** Department of Telecommunication

**Objective:** citizen centric platform to fight cyber fraud, enabling citizens to report suspicious calls & messages.

#### It contains various modules such as:-

- Chakshu-Report Suspected Fraud Communication
- CEIR-Block Your Lost/Stolen Mobile
- TAF COP -Know mobile connections taken in your name
- KYM -Know Your Mobile / IMEI Verification
- RICWIN -Report Incoming International Call With Indian Number
- KYI -Know Your Wireline Internet Service Provider

### 2. Digital Public Goods (DPGs)

DPGs are **open-source technologies, including open data, open AI models, open standards and open content**, used in a country to operationalize digital public infrastructure. **E.g., Aadhaar, UPI, Digilocker, etc.** DPGs can limit economic monopolies over digital solutions and knowledge.

**Reasons behind introducing DPGs:** Inclusivity and accessibility, catalyst for innovation, enhanced transparency in public service delivery, etc

### 3. Proton Fusion Engine

It was **initially conceptualized by Albert Einstein back in 1929.** It uses nuclear fusion to propel spacecraft at near-light speeds. It **aims to use hydrogen fusion to generate enormous amounts of energy, offering a cleaner and more efficient alternative to chemical fuels.** Its design relies on a funnel-shaped magnetic

field, where protons are compressed and heated to extreme temperatures. The resulting plasma jet provides the necessary thrust. The potential to extend this technology to vehicles on Earth could revolutionize transportation.

#### 4. Paraguay River

**Fifth largest river in South America and principal tributary of the Paraná River.** Originates south of Diamantino in the Brazilian state of Mato Grosso. **Flows generally north-to-south, weaving its way through Brazil, Paraguay, and Argentina. A notable feature of the upper basin is the vast seasonal swamp called the Pantanal.** The predominant climate in the drainage basin is hot and humid, characterized by dry winters and heavy rains in the summer.

### 13 SEPTEMBER

#### 1. Inner Line Permit (ILP)

State government of Nagaland has approved the implementation of ILP in **Chumoukedima, Niuland, and Dimapur districts.**

##### About ILP

It's an official travel document issued by government that allows Indian citizens to travel into protected areas for a limited period. ILP system aims to regulate movement near India's international borders. **ILP is officially used to protect tribal cultures in north-eastern India.**

**Genesis:** Bengal Eastern Frontier Regulations of 1873.

##### There are different types of ILPs:

One for tourists and others for long-term stays (often for employment purposes).

**States under ILP:** Arunachal Pradesh, Mizoram, Nagaland and Manipur.

#### 2. Salt Pan Lands

Centre approved transfer of 256 acres of salt pan land in Mumbai to Dharavi Redevelopment Project Pvt Ltd.

##### About Salt Pan Lands

They comprise parcels of low-lying lands where seawater flows in at certain times, and leaves behind salt and other minerals. This ecosystem is instrumental in protecting the city from flooding. They are spread across **Maharashtra, Andhra Pradesh,**

**Tamil Nadu, Odisha, Gujarat, and Karnataka.** According to Wetland (Conservation and Management) Rules 2017, salt-pan land is deleted from wetland definition. They are **protected under Coastal Regulation Zone rules.**

#### 3. Myristica Swamp Forest

Researchers have discovered a **sacred grove- a Myristica swamp forest in Kumbhalgarh (Maharashtra), which is protected by the local community.** Dominated by **Myristica magnifica, an endangered species native to Karnataka and Kerala.** Sacred groves are preserved natural areas with spiritual and ecological values due to local taboos and sanctions

##### About Myristica swamp forest

Tree-covered wetlands found within the evergreen forests in the **Western Ghats, Andaman and Nicobar Islands, and Meghalaya.** These forests of the Western Ghats are considered one of the primeval ecosystems. **Significance:** Provides ecosystem services like **groundwater recharge, carbon sequestration, natural barrier against flood, etc.**

#### 4. Turkmenistan-Afghanistan-Pakistan-India (TAPI) Gas Pipeline Project

Turkmenistan and Afghanistan resumed work on TAPI Gas-Pipeline Project.

##### About TAPI Gas Pipeline Project (Peace Pipeline)

**Aim:** To export up to 33 billion cubic meters of natural gas annually through a proposed 1,814-kilometer pipeline from **Turkmenistan to Afghanistan, Pakistan, and India.**

Gas extracted from **Galkynysh gas field in southeast Turkmenistan.**

**Financing:** Asian Development Bank which is also acting as transaction adviser for development.

**Impact:** Reduced greenhouse gas emissions resulting from substitution of heavy fossil and solid fuels by cleaner natural gas.

### 16 SEPTEMBER

#### 1. Nidhi companies

Ministry of Corporate Affairs Cracks down on errant Nidhi companies.

##### About Nidhi company

**Nidhi Company is declared by the Central Government under Companies Act, 2013.** It complies with the Nidhi Rules, 2014 made by the Central Government for regulation of such class of companies. Rules have been amended subsequently in 2022, etc. **The objective of Nidhi Companies is to cultivate the habit of thrift and savings amongst its members.** It receives deposits from, and lends to, its members only, for their mutual benefit.

**Key Criteria:**

- Not less than two hundred members.
- Net Owned Funds of ten lakh rupees or more.

**2. Cluster Munition (CM)**

As per CM Monitor 2024, **CM accounted for 93% of global casualties in 2023 with children constituting half of it.**

**Cluster Munition**

Weapons consisting of a container or dispenser from which many submunitions or bomblets are scattered over wide areas. Many submunitions are unreliable and can fail to explode, posing risks to civilians during and after conflicts.

**Convention on Cluster Munitions (India not a party)**

It is an **International treaty (enforced in 2010) of more than 100 states prohibiting the use, production, transfer and stockpiling of CM.**

**3. Tardigrades**

Recently, a study of the first tardigrade fossil discovered enabled them to classify them and retrace their evolutionary history.

**About Tardigrades (Water Bears or Moss Piglets)**

They are tiny eight-legged aquatic animals found in almost all habitats on Earth. **They comprise of two main classes: Heterotardigrada and Eutardigrada.** They can survive extreme environmental conditions like punishing heat, freezing cold, ultraviolet radiation and even outer space. **They are able to survive harsh conditions, as they are capable of almost stopping their metabolism (known as cryptobiosis),** reviving only when conditions are better.

**4. Zorawar tanks**

It is a light-tank designed to provide the Indian army with enhanced capabilities at high altitude. **Jointly**

**developed by the DRDO and private sector firm L&T.** Named after the **legendary General Zorawar Singh** who led multiple successful victories in Tibet.

**Key Features:**

It can be integrated with drones and battle management systems for enhanced situational awareness. **Designed for rapid deployment and maneuverability in mountainous regions. Tanks are amphibious,** making them versatile for operations in riverine regions.

**17 SEPTEMBER**

**1. Lok Adalat**

About 1.14 crore cases settled at 3rd National Lok Adalat of 2024 organized by National Legal Services Authority (NALSA). **NALSA constituted under Legal Services Authorities (LSA) Act, 1987 provides free legal services to weaker sections.**

**About Lok Adalat**

It's one of the alternative dispute redressal mechanisms where disputes/cases pending in court of law or at pre-litigation stage are settled/ compromised amicably. **Accorded statutory status under LSA Act, 1987. It has same powers as a civil court under Code of Civil Procedure, 1908.** Its decision is final and binding and no appeal can be made against its decision.

**2. Integrated Ocean Energy Atlas**

Indian National Centre for Ocean Information Services (INCOIS) has unveiled Integrated Ocean Energy Atlas.

**About Integrated Ocean Energy Atlas**

It identifies areas with high potential for energy generation. **It covers marine meteorological energy (solar, wind) and hydrological energy (wave, tide, currents, ocean thermal, salinity gradients).** It will serve as reference for policymakers, industry and researchers for harnessing rich energy resources available in Indian Exclusive Economic Zone (EEZ).

**About INCOIS**

**Autonomous body under Ministry of Earth Sciences in 1999.** It provides ocean data, information and advisory services to society, industry, government and scientific community through sustained ocean observations.

### 3. Irula Tribe

Despite gaining global attention for extracting and selling snake venom, Irula tribals are facing an uncertain future. Irula community plays crucial role in public health by supplying nearly **80% of venom used for antidotes in India.**

#### About Irula Tribe

**One of the PVTG in Tamil Nadu.** Residing in Nilgiris region of Tamil Nadu and places great value on practice of ancestor worship. **They are also spread over Karnataka and Kerala.** According to anthropological literature, **Irula is one of the oldest tribal communities of India belongs to Negrito race (migrated from Africa).** Speak Irula language. It is written in Tamil script.

### 4. Centre for Rural Enterprise Acceleration through Technology (CREATE)

Ministry of Micro, Small & Medium Enterprises has inaugurated CREATE setup in Leh.

#### About CREATE

It supports and enhances local productivity, product quality, economic potential and improves livelihoods for the local communities. It will **help advance rural industrialization and foster enterprise creation, to retain the traditional artisans in challenging regions like Ladakh.**

#### CREATE will provide

- Pashmina Wool Roving Facility,
- Training for development of production facility for Essential Oil Extraction from Roses and other flowers,
- Training for development of production facility for **Bio- processing of available fruits and other raw materials.**

## 18 SEPTEMBER

### 1. Fast-track special courts (FTSCs)

FTSCs are much **more efficient in handling rape cases and those related to Protection of Children from Sexual Offences (POCSO) Act** according to a report released by India Child protection.

#### About FTSCs

**Type:** Centrally sponsored scheme, launched in 2019 (extended up to 2026)

**Funding:** Centre bears its expenditure from the Nirbhaya Fund

**Implementation:** By department of Justice, Ministry of Law and Justice.

**Objective:** Ensures swift disposal of rape cases and cases those coming under the POCSO Act.

**755 FTSCs (out of decided 1023) including 410 exclusive POCSO (ePOCSO) Courts are functional in 30 States / UTs.**

**Significance:** FTSCs disposed of 83% of the cases in 2022 compared with 10% by the conventional courts.

### 2. Seaweed

It is a common name for various species of marine plants and algae which grow in oceans as well as in rivers, lakes etc. **Multicellular and macroscopic autotrophs broadly classified into three groups such as green (Chlorophyta), brown (Phaeophyta), and red (Rhodophyta) seaweeds.**

#### Applications:-

**Nutritional:** Also called sea vegetables, it provides:-

**Minerals:** calcium, phosphorus, sodium, potassium

**Vitamins:** A, B1, B12, C, D, E etc

**Health:** Anti-inflammatory, antimicrobial & used in cancer treatment.

**Manufacturing:** Binding agents in toothpaste, fruit jelly, organic cosmetics, skincare items.

**Agriculture:** Enhances crop productivity

### 3. Battery Waste Management (BWM) Rules, 2022

Central Pollution Control Board (CPCB) has introduced stringent environmental compensation (EC) guidelines to penalise violations of the BWM Rules, 2022.

#### About BWM Rules, 2022

The Rules specify standards to manage waste batteries. It covers **all types of batteries, viz. Electric Vehicle batteries, portable batteries, automotive batteries and industrial batteries etc.** It specifies extended producer responsibility (EPR) where producers ensure collection, recycling, and refurbishment of the waste batteries. **Environmental compensation imposed for non-fulfilment of EPR targets are based on the principle of Polluter Pays Principle.**

#### 4. Quantum natural language processing (QNLP)

QNLP has emerged as a field of research with potentially profound implications for large language modeling (LLM).

##### About QNLP:

It is the application of quantum computing to natural language processing (NLP). **NLP gives computers ability to interpret, manipulate, and comprehend human language.**

**Need for QNLP:** Traditional LLMs excel at processing semantic (meaning-related) aspects of natural language but struggle with syntax. **Syntax is structural arrangement of words and phrases in a sentence. QNLP focuses on grammar (syntax) and meaning (semantics) together, rather than separately as conventional systems do.**

**Advantages:** Lower energy costs than conventional LLMs, Requiring fewer parameters than their classical counterparts etc.

#### 19 SEPTEMBER

##### 1. Energy Trilemma

It consists of three often conflicting challenges related to energy which need to be balanced in the context of the rapidly changing energy sector.

##### The trilemma comprises:

**Energy Security:** Capacity to meet present and future energy demand reliably through robust supply chains.

**Affordability:** Equitable access to energy.

**Sustainability:** Transitioning towards mitigating environmental impact of energy use and climate change impacts.

##### 2. Coelacanths

They are **deep-sea fish that live off the coasts of southern Africa and Indonesia**. They are evolutionary unique lobe finned fish (having robust bones in their fins similar to bones in our arms). **More closely related to tetrapods (animals with backbones and 4 limbs like frogs) than to most other fishes.**

##### 3. Kleptoparasitism

Some recent reports have highlighted that Kleptoparasitism among birds are helping spread the avian influenza.

#### About Kleptoparasitism or Cleptoparasitism

It is a **form of feeding where one animal takes prey from another that has caught, killed, or otherwise prepared**, including stored food. E.g., **Sperm Whales, Western Gulls, Hyenas etc.** It can be **intraspecific**, where the parasite is the same species as the victim, or **interspecific**, where the parasite is different species.

#### 4. Naga King Chili (Capicum chinense Jackquin)

One of the world's hottest chillies, certified by Guinness World Records in 2006 for its intense heat, exceeding 1 million Scoville Heat Units.

**Also referred as Bhoot Jolokia and Ghost pepper.**

**Received the Geographical Indication (GI) tag in 2008.** Primarily cultivated in the states of **Nagaland, Assam, Manipur and to a lesser extent in Mizoram, Arunachal Pradesh, and Meghalaya**. Grown in large bamboo groves during the peak harvest months of August-September.

#### 20 SEPTEMBER

##### 1. Pheromone

Indian scientists have developed a **sustainable pheromone dispenser with a controlled release rate which can help reduce costs of pest control and management**. Released pheromones alter the behaviour of the target insect species and attract them to sticky traps.

##### About Pheromones

**Pheromones are chemical signals which trigger a response or elicit specific behavioural expressions from the opposite sex, same sex or both sexes of the same species.** Pheromones can be found in body fluids like urine, sweat, specialized exocrine glands, and genital mucous secretions.

**Used by Insects:** To help attract mates, warn about predators, and find food.

##### 2. Circumnutation

It refers to **small, continuous movements made by plants to explore their environments**. These movements appear as spirals or zigzags.

**Significance:** It is an **inherent behavior across plant species, allowing them to adapt to environmental conditions and maximize their growth potential**. E.g. **Self-organization of Sunflower:** Sunflowers form a zigzag pattern when grown in dense rows, allowing

sunflowers to lean away from one another, avoiding shade and maximizing sunlight exposure. **Researchers found that circumnutation often seems random, with plants moving in unpredictable ways.**

### 3. Trademark Search Technology

Ministry of Commerce & Industry unveiled the **Artificial Intelligence (AI) and Machine Learning (ML)** based Trademark Search Technology and IP Saarthi Chatbot. **IP Saarthi Chatbot is a digital assistant designed to provide instant support and guidance to users navigating the Intellectual Property (IP) registration process.**

#### Trademark Search Technology:

Advanced AI and ML algorithms for precise trademark identification. **Streamlined search processes for domestic and international businesses.** Enhanced protection capabilities for trademarks.

**Benefits:** Expedite trademark registration processes, improve overall user experience, foster international collaboration.

### 3. Chandrayaan-4

It aims to develop and demonstrate key technologies for landing on the Moon, collecting lunar samples, and returning to Earth safely. It will achieve the foundational technologies capabilities eventually for an Indian landing on the moon (planned by year 2040) and return safely back to Earth. **ISRO will be responsible for the development of spacecraft and launch.**

**Timeline:** Expected to be completed within 36 months.

**Budget:** ₹2104.06 crore.

## 24 SEPTEMBER

### 1. Infrasound

**Comprehensive Test Ban Treaty Organization (CTBTO) is holding a workshop for scientists on using 'infrasound' for monitoring nuclear tests with the industry.** Set up in 1996, CTBTO is an interim organization tasked with building up the verification regime of the CTBT (India is not a signatory).

#### About Infrasound

**Refers to low-frequency sound waves with a spectrum between 0.002 and 20 Hertz (Hz) that are below the**

**range of human hearing.** Microbarometers are used to detect minute changes in atmospheric pressures caused by infrasounds.

**Sources:** Natural (Earthquakes, volcanic explosions, etc.) and non-natural (mining, chemical explosion, nuclear explosions, etc.)

**Applications:** Detection of distant nuclear explosions (CTBTO's International Monitoring System (IMS)), checking structural health of infrastructure, wildlife tracking, etc.

### 2. Legacy Waste

According to **Ministry of Housing & Urban Affairs' Data, only 16% of land is reclaimed under 'legacy waste management project of Swachh Bharat Mission (SBM) 2.0'.** SBM 2.0 mandates all cities to clear legacy waste sites.

#### Legacy Waste

**Definition:** Although there is no official definition of 'legacy waste', it **typically refers to the aged municipal solid waste (MSW) in landfill or dumpsites.**

**Impact:** Releases greenhouse gases, contamination of soil and groundwater, etc.

**Ways to deal:** Sustainable SWM management plan, maximum utilisation of recovered fractions, building capacity of urban departments, reusing reclaimed land sustainably.

### 3. Nanozymes

A CSIR-CLRI study has found that nanozymes can ensure collagen's integrity and enhance resistance to enzymatic degradation. **Collagen is the most abundant protein in the human body. It is found in the bones, skin, muscles, and tendons.**

#### About Nanozymes

Nanozymes are nanomaterial-based artificial enzymes with intrinsic enzyme-like properties. Unlike biological enzymes, **nanozymes are typically in inorganic materials**, i.e., metals, metal oxides, or carbon-based nanostructures.

**Advantages:** High stability, easy modification, designability, ease of preparation, and low cost.

**Applications:** Biomedical (Biosensing, Drug delivery, diagnosis and therapy, etc.), Environmental Remediation (Water Purification, Air Purification, etc.), among others.

#### 4. ASEAN-India Trade in Goods Agreement (AITIGA)

During 12th East Asia Summit Economic Ministers Meeting in Lao PDR, India called for expeditious review of the AITIGA.

##### About AITIGA

**Genesis:** Signed in 2009 and entered into force in 2010.

**Mandate:** Each party shall accord National Treatment to goods of other parties in line with GATT, 1994.

**Need for review:** Goods from China and other non-ASEAN nations routing to India taking advantage of duty concessions under AITIGA.

**ERIA:** Economic Research Institute for ASEAN and East Asia (ERIA) is collaborating on conducting a joint study on AITIGA.

### 25 SEPTEMBER

#### 1. Unlawful Activities (Prevention) Act (UAPA), 1967

Supreme Court ruled that 14-day timeline for granting sanction for prosecution under UAPA, 1967 is mandatory and not discretionary.

##### About UAPA, 1967

It provides for more effective prevention of certain unlawful activities of individuals and associations and for dealing with terrorist activities. Prosecution of individuals accused of terrorism requires prior sanction from the government via two steps i.e. An independent authority must review evidence gathered by investigators and make a recommendation to government within seven working days. (Rule 3 of Unlawful Activities (Prevention) (Recommendation & Sanction of Prosecution) Rules, 2008). Government then has an additional seven working days to decide whether to grant or deny sanction based on authority's recommendation (Rule 4)

#### 2. Computer Security Incident Response Team – Power (CSIRT–POWER) facility

Union Minister of Power has inaugurated CSIRT–POWER facility in New Delhi.

##### About CSIRT–POWER facility

It was initiated by Ministry of Power following the National Cyber Security Policy and in collaboration with CERT-In. Equipped with advanced infrastructure, cutting-edge cybersecurity tools, CSIRT-Power is well-prepared to tackle emerging threats. Objective is to build and enhance the cybersecurity resilience in Indian Power Sector, through a structured and coordinated approach. Setup under Central Electricity Authority. CERT-In is providing requisite leadership for to coordinate all incident and other cyber security activities in Power sector.

#### 3. Credit Guarantee Fund Trust for Micro and Small Enterprises (CGTMSE)

CGTMSE has approved guarantees amounting to Rs 1 lakh crore.

##### About CGTMSE

Set up in 2000 by Ministry of Micro, Small and Medium Enterprises and SIDBI

**Aim:** To provide credit guarantee support to member lending institutions for credit facilities sanctioned by them to MSEs, especially in absence of collateral.

##### Eligible Lending Institutions:

Scheduled commercial banks (Public Sector Banks/Private Sector Banks/Foreign Banks) and select Regional Rural Banks.

**Corpus Contribution:** Government and SIDBI in ratio of 4:1.

#### 4. Futures & Options (F&O)

They are derivative instruments deriving its value/price from an underlying asset.

**Options:** Provide holders' the right (not obligation) to buy or sell an underlying asset at a specified price within a set timeframe.

It is of two types: Call, gives right to buy to the holder and Put, gives the right to sell.

**Futures:** Standardized contracts obligating the buyer/seller to purchase/deliver an underlying asset at a predetermined price on a specified future date.



# PRESS INFORMATION BUREAU (PIB)

2<sup>ND</sup> SEPTEMBER

## 1. United Nations Security Council (UNSC):

It is one of the five principal organizations of the United Nations (UN). It has **primary responsibility for the maintenance of international peace and security**. Under the Charter of the UN, all Member States are obligated to comply with UNSC decisions. **The Security Council takes the lead in determining the existence of a threat to peace or an act of aggression. It calls upon the parties to a dispute to settle it by peaceful means and recommends methods of adjustment or terms of settlement.** In some cases, the Security Council can resort to imposing sanctions or even authorising the use of force to maintain or restore international peace and security.

### Powers:

- Establishment of peacekeeping operations
- Establishment of international sanctions
- Authorization of military action through Security Council resolutions
- **Members:** It has 15 Members, and each Member has one vote.
- **5 permanent members known as P5, including the United Kingdom, China, France, Russia and the United States.**
- The P5's privileged status has its roots in the United Nations' founding in the aftermath of World War II.
- They have **veto power over decisions of the UNSC.**
- **10 non-permanent members:** Each year the **193-member General Assembly** elects five non-permanent members for a two-year term at the UNSC.
- The non permanent members are generally chosen to achieve equitable representation among geographic regions, with five members coming from Africa or Asia, one from Eastern Europe, two from Latin America, and two from Western Europe or other areas.
- The **Security Council has a permanent headquarters at the United Nations Headquarters in New York City.**

## 2. Tourism and Hospitality Skill Council:

It is a **Not-for-Profit Organization, registered under the Societies Registration Act, 1860, promoted by the**

**Confederation of Indian Industry (CII)** with inclusive representation of the Government, Industry, Industry Associations and Training Institutes across India. It is formed by the industry to tackle the skilling of large manpower to fulfil the industry requirements, playing a crucial role in bridging this ever-growing gap. **THSC is now an approved awarding body under the National Council for Vocational Education and Training (NCVET).**

**Mandate:** It has a mandate to create a robust and sustainable eco-system for skill development in the industry, catering to all the sub-sectors of the industry, namely, **Hotels, Tour Operators, Food Service Restaurants, Facilities Management and Cruise Liners.**

## 3. Uri-I Hydroelectric Project:

It is an **operating hydroelectric power plant located in the Jhelum River of Uri town in the Baramulla district of Jammu & Kashmir.** It is located very near the Line of Control (LOC), the de facto border between India and Pakistan. The **power project was commissioned in 1997 with a total installed capacity of 480 MW. It is owned by the Central Government, and the operating company of the plant is National Hydroelectric Power Corporation Limited (NHPC).** The unit size of the power plant is 480 MW, having 4 units of 120 MW each.

## 4. Jhelum River:

It is a **river that flows in India and Pakistan. It is a tributary of the Indus River.** It is the main waterway of the Kashmir valley. It is the **largest and most western of the five rivers of Punjab and passes through the Jhelum District in the north of Punjab province, Pakistan.**

### Course:

**Origin:** It originates at the **Verinag Spring at Anantnag, at the foot of the Pir Panjal range in the Kashmir Valley.** It then flows via Srinagar and Wular Lake prior to entering Pakistan. The river makes a deep, narrow gorge on its way to Pakistan. **It joins the Chenab River near Trimmu, Pakistan.**

### Major Tributaries:

The **largest tributary of the Jhelum is the Kishanganga (Neelum) River, which joins near Muzaffarabad and enters the Punjab province, Pakistan.** Kunhar River is

the second largest tributary of the river, which connects Pakistan-occupied Kashmir (PoK) and Pakistan on the Kohala Bridge of Kangan Valley. **Other tributaries include the Sandran River, Bringi River, Arapath River, Watlara River, Lidder River and Veshaw River**

#### 5. Navratna Status:

**Solar Energy Corporation of India Ltd (SECI), a Central Public Sector Enterprise (CPSE) under the Ministry of New and Renewable Energy has been granted the Navratna status by the Ministry of Finance.** The government categorises all Public Sector Undertakings (PSUs) into three categories, namely **Maharatna, Navratna and Miniratna.** The Government had introduced the 'Navratna' scheme in 1997.

#### Criteria for Navratna status:

A **Public Sector Unit (PSU) should be a Miniratna-I, Schedule 'A' company, should have obtained an 'excellent' or 'very good' MoU rating in three of the last five years, and must have a composite score of 60 in six performance indicators. It must report a net profit of more than Rs 5,000 crore for three consecutive years and maintain an average annual turnover of Rs 25,000 crore for three years, or have an annual average net worth of over Rs 15,000 crore for three years.**

#### Advantages:

- **Financial Independence:** They invest up to ₹1,000 crore without seeking approval from the central government.
- Navratna companies are also allowed to invest up to 15% of their net worth on a single project, or 30% of their net worth in a given year, subject to a cap of ₹1,000 crore.
- To incur **capital expenditure on the purchase of new items or for replacement**, without any monetary ceiling.
- To enter into technology joint ventures or strategic alliances.

#### 6. Samudra Pratap:

Recently, the **first indigenously developed Pollution Control Vessel of the Indian Coast Guard (ICG), 'Samudra Pratap' was launched in Goa.** The vessel will help to check the oil spillage on the country's sea coast. **The ship was launched and named as 'Samudra Pratap'. It is built by Goa Shipyard Limited (GSL) for**

**the Indian Coast Guard.** It is the first time that these types of vessels are being designed and built indigenously in India. Notably, it features side-sweeping arms to contain oil spills while in motion, an advanced radar system for oil spill detection and facilities to recover and store various types of oil.

#### Significance:

The vessel is a crucial addition to the Indian Coast Guard's fleet, enhancing its capacity to **manage oil spill response operations in India's Exclusive Economic Zone (EEZ) and beyond.**

#### 7. Ramon Magsaysay Award:

It is **Asia's premier prize and highest honor, celebrates greatness of spirit and transformative leadership in Asia.** The Awardees, annually selected by the RMAF board of trustees, are presented with a certificate and a medallion with an embossed image of Ramon Magsaysay facing right in profile. **From 1958 to 2008, the Award was given in six categories annually:**

- **Government Service:** To recognize outstanding service in the public interest in any branch of government, including the executive, judicial, legislative, or military;
- **Public Service:** To recognize outstanding service for the public good by a private citizen;
- **Community Leadership:** To recognize the leadership of a community toward helping the disadvantaged have fuller opportunities and a better life;
- **Journalism, Literature, and Creative Communication Arts:** To recognize effective writing, publishing, or photography or the use of radio, television, cinema, or the performing arts as a power for the public good;
- **Peace and International Understanding:** To recognize contributions to the advancement of friendship, tolerance, peace and solidarity as the foundations for sustainable development within and across countries.
- **Emergent Leadership:** To recognize an individual, forty years of age or younger, for outstanding work on issues of social change in his or her community, but whose leadership may not yet be broadly recognized outside of this community.

It is **presented in formal ceremonies in Manila, Philippines on August 31st**, the birth anniversary of the

much-esteemed Philippine President whose ideals inspired the Award's creation in 1957

#### 4 SEPTEMBER

##### 1. Colombo Security Conclave (CSC):

It is a **regional security grouping comprising India, Bangladesh, Sri Lanka, Maldives, and Mauritius**. The CSC's core objective is to **promote regional security by addressing transnational threats and challenges of common concern to the Member States**.

##### Origin:

The CSC, initially known as the **Trilateral for Maritime Security Cooperation**, evolved out of trilateral meetings between National Security Advisors (NSAs) and Deputy NSAs from **India, Maldives, and Sri Lanka, starting in 2011**. It came to a standstill after 2014 due to rising tensions between India and the Maldives. Since its revival and re-branding as the CSC in 2020, Mauritius and more recently, Bangladesh were added as members of the grouping. **Current members of CSC include India, Bangladesh, Maldives, Mauritius and Sri Lanka, while the Seychelles is an observer nation**. CSC brings together NSAs and Deputy NSAs of the member countries.

##### Cooperation under the conclave focuses on five pillars:

- maritime safety and security
- countering terrorism and radicalisation
- combating trafficking and transnational organised crime
- cyber-security and protection of critical infrastructure
- humanitarian assistance and disaster relief.

##### Permanent secretariat: Colombo

##### 2. India Semiconductor Mission (ISM):

The **Union Cabinet recently gave the green light to Kaynes Semicon Pvt Ltd to establish a new semiconductor unit in Sanand, Gujarat**, which is the fifth semiconductor unit to be approved under the India Semiconductor Mission (ISM). **ISM is a specialized and independent Business Division within the Digital India Corporation. It aims to build a vibrant semiconductor and display ecosystem to enable India's emergence as a global hub for electronics**

**manufacturing and design**. ISM has all the administrative and financial powers and is tasked with the responsibility of catalysing the India Semiconductor ecosystem in manufacturing, packaging, and design. ISM has an advisory board consisting of some of the leading global experts in the field of semiconductors. **ISM has been working as a nodal agency for the schemes approved under the Semicon India Programme.**

##### Semicon India Programme:

The **ISM was launched in 2021 with a total financial outlay of Rs. 76,000 crores under the aegis of the Ministry of Electronics and IT (MeitY), Government of India**. It is part of the comprehensive program for the development of sustainable semiconductor and display ecosystems in the country. **The programme aims to provide financial support to companies investing in semiconductors, display manufacturing and design ecosystem**. It also promotes and facilitates Indigenous Intellectual Property (IP) generation and encourages, enables, and incentivizes the Transfer of Technologies (ToT).

##### The following four schemes have been introduced under the aforesaid programme:

- Scheme for setting up of Semiconductor Fabs in India.
- Scheme for setting up of Display Fabs in India.
- Scheme for setting up of Compound Semiconductors/Silicon Photonics/ □ Sensors Fab and Semiconductor Assembly, Testing, Marking and Packaging (ATMP)/OSAT facilities in India.
- Design Linked Incentive (DLI) Scheme.

##### 3. Digital Bus initiative:

It is a **joint venture between the National Digital India Mission and the NIIT Foundation**. It was started in 2017, aims to take technology to remote areas and also **foster innovation and offer new opportunities and ensure that every community is able to thrive in the digital age**.

##### Objective:

- Reducing the Digital divide for those living in remote areas
- Providing Linkages to Government programs and initiatives
- Enhancing interest levels in learning

- Introducing the multidisciplinary approach to education
- Encouraging collaborative learning
- Developing interpersonal skills
- Providing awareness of technology amongst the rural community
- Providing equal opportunities for rural youth

**Features of buses:** These are **solar-powered, 5G-enabled and fully furnished classrooms** with computers, Internet and camera/video capabilities, with preinstalled e-courses, all available free of cost.

**Focus of the courses:** These courses focus on fundamental functions like using e-mail, the Internet and applications. It offers a career programme to help the beneficiary look for a job in the nearest city of town.

#### 4. Thanjavur Veena:

The Thanjavur veena is an Indian instrument and has an interesting construction. **They are of two types viz. the "Ekantha Veena" and "Sada Veena".** "Ekantha Veena" is carved from a single block of wood, while "Sada Veena" has joints and is carved in three sections namely resonator, neck and head. **The veena has 24 fixed frets (Mettu) so that all ragas can be played. It is made of fresh bark from a Jack Fruit Tree.** The tree bark is forced to undergo several rounds of testing before being finalized for usage. **The work involves making the resonator ( kudam), the neck ( dandi) and a tuning box — the three integral parts of a veena.** It takes up to 15-20 days, to get the finished product. The wood gets cut, intricately carved, shaped, and assembled. **There are four types of veena.** While **Rudra veena and Vichitra veena are popular in Hindustani classical music, Saraswati veena and Chitra veena are used in Carnatic classical music.** Thanjavur is the only place where Saraswati veena is made. Saraswati, the goddess of learning and arts, is portrayed with a veena.

### 6 SEPTEMBER

#### 1. Smart Cities Mission (SCM):

It was launched on 25 June 2015. **The main objective of the SCM is to promote cities that provide core infrastructure, a clean and sustainable environment, and a decent quality of life to their citizens through the application of 'smart solutions'.** It is a Centrally

Sponsored Scheme under the Union Ministry of Housing and Urban Affairs (MoHUA). The strategic components of the Smart Cities Mission are city improvement (retrofitting), city renewal (redevelopment), and city extension (Greenfield development).

#### Funding:

- The Central Government will give financial support over 5 years, i.e., on an average of Rs.100 crore per city per year.
- An equal amount on a matching basis is to be provided by the State/ Urban Local Bodies (ULBs).
- Emphasis has been given on the participation of the private sector through Public Private Partnerships (PPP).

#### 2. New Flag and Insignia of the Supreme Court of India:

The newly unveiled flag features symbols central to India's legal and cultural heritage: **the Ashoka Chakra, the Supreme Court building, and the Constitution of India.** The new Supreme Court flag is blue in colour. **The insignia has 'Supreme Court of India' and 'Yato Dharmastato Jayah' (in Devanagari script) inscribed on it. The phrase "Yato Dharmastato Jayah" is a Sanskrit expression that translates to "Where there is Dharma, there is victory" or "Victory lies where Dharma (righteousness) prevails."** This phrase encapsulates the essence of justice and righteousness that the Supreme Court strives to uphold. The new flag and insignia were conceptualized and designed by the National Institute of Fashion Technology (NIFT), Delhi. The flag will be available in various designs, including **cross table flat, single table flag, pole flag, and wooden frame, ensuring its presence in diverse settings.**

#### 3. Food Recovery to Avoid Methane Emissions (FRAME) Methodology:

It quantifies the avoided emissions and co-benefits from redirecting food loss and waste to direct human consumption, through food recovery and redistribution operations.

**Developed by:** It is **developed by the Global Food Banking Network (GFN)** in partnership with the Global Methane Hub and the Carbon Trust.

The **FRAME initially began as a pilot project in Mexico and Ecuador, where six community-led food banks**

were analysed. The new FRAME tool will allow food banks, food recovery organisations, private sector companies, scientific experts and others working in the food loss and waste sector to be able to accurately measure and manage emissions from food recovery and redistribution.

#### 4. Exercise Varuna:

It is the **bilateral Naval Exercise between India and France**. This bilateral exercise between the two navies was initiated in 1993. It **was named 'VARUNA' in 2001 and has become a hallmark of India-France's strategic bilateral relationship**. The 2024 edition of Indo-French bilateral naval 'Exercise Varuna' is scheduled in the Mediterranean Sea.

#### 5. Poshan Tracker initiative:

The Ministry of Women and Child Development received the National Award for e-Governance 2024 (Gold) for the Poshan Tracker initiative. **The Poshan Tracker program identifies and addresses growth issues among children aged 0-6 years, utilizing real-time monitoring and WHO growth charts to ensure optimal nutritional outcomes**. Anganwadi Workers (AWWs) play a crucial role in evaluating children's health status and implementing timely interventions when deviations from expected growth patterns are detected. **The Poshan Tracker employs advanced ICT tools and Growth Measuring Devices (GMD) at each Anganwadi Center (AWC) to facilitate accurate data collection and regular monitoring**. The program's real-time growth monitoring has significantly improved child health outcomes in India, covering millions of children under Mission Poshan 2.0.

#### 6. IndOBIS:

The Indian Ocean Biodiversity Information System (IndOBIS) is the Indian regional node of the global Ocean Biodiversity Information System (OBIS). It is **hosted by the Centre for Marine Living Resources & Ecology (CMLRE), Kochi**. IndOBIS collects data on taxonomically resolved marine species occurrence records from the Indian Ocean and contributes to the OBIS as one of the 30 regional nodes of the Ocean Biodiversity Information System OBIS.

#### 7. AgriSURE Fund:

The **Union Minister for Agriculture and Farmers' Welfare and Rural Development launched the**

**AgriSURE Scheme in New Delhi**. Agri Fund for Start-ups & Rural Enterprises (AgriSURE) is an innovative fund which is a pioneering step toward revolutionizing the agricultural landscape in India.

**Focus area:** It mainly focuses on technology-driven, high-risk, high-impact ventures.

It is **designed to fuel growth and foster innovation** in the agricultural and rural start-up ecosystem.

**Funding Pattern:** A Blended capital fund of ₹750 crore with SEBI Registered Category II, Alternative Investment Fund (AIF), contributions from the Government of India is ₹250 crore, NABARD is ₹250 crore and ₹250 crore is being mobilized from banks, insurance companies and private investors.

**NABVENTURES a fully owned subsidiary of NABARD will act as the fund manager.**

#### 8. National Centre for Good Governance (NCGG):

**Established in 2014, the NCGG is an apex-level institution under the Ministry of Personnel, Public Grievances and Pensions**. It works with the Ministry of External Affairs (MEA) to train civil servants from developing countries. **It focuses on public policy, governance, reforms, and enhancing the capacity of civil servants in India and other developing nations. It is located in New Delhi**. The centre's origins can be traced back to the National Institute of Administrative Research (NIAR), which had been set up in 1995 by the Lal Bahadur Shastri National Academy of Administration (LBSNAA). **NIAR was later renamed NCGG.**

### 7 SEPTEMBER

#### 1. Forum on China-Africa Cooperation:

**China is hosting the ninth Forum on China-Africa Cooperation (FOCAC) Summit, a diplomatic event aimed at strengthening ties with African nations**. It was established in 2000 to formalise the strategic partnership between China and African nations. A summit is conducted every three years, with the host alternating between China and an African member.

**Member countries: The FOCAC counts 53 African nations as its members** – the entire continent except Eswatini, which has diplomatic ties with Taiwan against Beijing's "One China" Policy.

**The African Union Commission**, the continental bloc tasked with ensuring cooperation and economic integration across its member countries, is also a

member. **The theme this year is “Joining Hands to Advance Modernization and Build a High-Level China-Africa Community with a Shared Future.”** The current summit is expected to address state governance, industrialisation, agricultural upgradation and improved cooperation over China’s infrastructure financing via the Belt and Road Initiative (BRI).

## **2. Loss and Damage Fund (LDF):**

LDF was established at **the 2022 UNFCCC Conference (COP27) in Egypt.**

**Purpose:** To provide financial support to regions suffering both economic and non-economic losses caused by climate change.

Economic loss and damage are negative impacts that one can assign a monetary value to. **These are things such as the costs of rebuilding infrastructure that has been damaged due to a flood, or the loss of revenue from crops that were destroyed due to drought.** Non-economic loss and damage are negative impacts where it is difficult or infeasible to assign a monetary value. These are things such as trauma from experiencing a tropical cyclone, loss of community due to displacement of people, or loss of biodiversity.” **The LDF is overseen by a Governing Board that determines how the fund’s resources are disbursed, with the World Bank serving as the interim trustee tasked with hosting the fund for four years.** The fund encourages voluntary contributions from developed countries but invites developing countries to contribute to it too.

## **3. Law Commission of India:**

The **Union government has notified the constitution of the 23rd Law Commission of India.** It is a non-statutory body constituted by the Union government. **It can be referred to as an ad hoc body. Basically, it works as an advisory body to the Ministry of Law and Justice.** However, it is not defined under the Indian Constitution. It is constituted as part of Article 39A. A law commission is created when the Union government passes a resolution for the formation of a new commission after the expiry of the last one. After the resolution is passed, and the President gives assent to it, the government has the liberty to choose the chairperson for the new commission.

### **Composition of Law Commission:**

The **Commission is headed by a Chairperson, usually a retired Supreme Court judge, and comprises legal**

**experts, academicians, and senior advocates.** The members are appointed for a term of three years, during which they focus on different areas of legal reforms.

## **4. SAMRIDH Scheme:**

SAMRIDH is the Union Ministry of Electronics & IT (MeitY)’s flagship programme for startup acceleration under the National Policy on Software Products—2019. It was **launched in August 2021** and supports 300 software product startups with an outlay of ₹99 crore over a period of 4 years. **It aims to support existing and upcoming Accelerators to select and accelerate potential IT-based startups to scale.**

### **Eligibility of Accelerator:**

**Should be a registered Section-8/Society, [Not-for-Profit Company (eligible to hold equity)] having operations in India.** The Accelerator and the team are recommended to have more than 3 years of startup experience and should have supported more than 50 start-ups of which at least 10 startups should have received investment from external investors

**Implemented by:** The scheme is being implemented by MeitY Start-up Hub (MSH), Digital India Corporation (DIC).

## **9 SEPTEMBER**

### **1. BPaLM Regimen:**

It is a new treatment regimen against Multi-Drug-Resistant Tuberculosis (MDR-TB). It was **introduced by the Union Ministry of Health and Family Welfare under its National TB Elimination Program (NTEP).**

**Composition:** The regimen combines four drugs—Bedaquiline, Pretomanid, Linezolid, and optionally Moxifloxacin.

**This regimen includes a new anti-TB drug called Pretomanid, which was earlier approved and licensed for use in India by the Central Drugs Standard Control Organization (CDSCO).** The BPaLM regimen is a safer and more effective treatment option compared to traditional MDR-TB treatments. It is an **all-oral regimen with a low overall pill burden, which makes it patient-friendly.** It can cure drug-resistant TB in just six months, compared to the previous treatment duration of up to 20 months and is associated with fewer side effects.

## 2. National TB Elimination Program (NTEP):

It is a public health initiative of the Government of India that organizes the country's tuberculosis elimination efforts. It has set an ambitious goal of eradicating TB by 2025. **NTEP is a centrally sponsored scheme implemented under the aegis of the National Health Mission with resource sharing between the State Governments and the Central Government. It is based on the daily DOTS (Directly Observed Treatment with Short-course Chemotherapy) strategy.** The DOTS strategy ensures that infectious TB patients are diagnosed and treated effectively till cure, by ensuring availability of the full course of drugs and a system for monitoring patient compliance to the treatment. The program provides various free-of-cost, quality tuberculosis diagnosis and treatment services across the country.

**NI-KSHAY Portal:** NI-KSHAY (Ni=End, Kshay=TB) is the **web-enabled patient management system for TB control under the National Tuberculosis Elimination Programme (NTEP).**

## 3. Agni-4 Missile:

India has completed a successful test-fire of Agni-4 Ballistic Missile. It is an **intermediate-range ballistic missile. The launch of this Agni-4 was carried out from the Integrated Test Range in Odisha's Chandipur.** It was conducted under the aegis of the Strategic Forces Command, a part of India's Nuclear Command Authority (NCA). It can hit as far as 4,000 kilometres. The 20-metre-long missile can carry a payload of 1,000 kg and can be fired from a road-mobile launcher. It is a surface-to-surface mobile, two-stage solid-fuel system. **The Agni missiles are designed and developed by the Defence Research and Development Organisation (DRDO).**

## 4. Gulf Cooperation Council:

Recently, External Affairs Minister S Jaishankar arrived in Saudi Arabia's capital, Riyadh, to attend the First India-Gulf Cooperation Council (GCC) Foreign Ministers' Meeting. It is a **political and economic alliance of six countries in the Arabian Peninsula: Bahrain, Kuwait, Oman, Qatar, Saudi Arabia and UAE.** Established in 1981, the GCC promotes economic, security, cultural and social cooperation between the six states. It holds a summit every year to discuss cooperation and regional affairs.

## 10 SEPTEMBER

### 1. Sugamya Bharat App:

It is an **initiative of the Department of Empowerment of Persons with Disabilities (DEPwD), Ministry of Social Justice and Empowerment.** Designed to aid people with disabilities and the elderly, the Sugamya Bharat app allows users to report accessibility problems in public infrastructure, transportation and buildings.

#### Objectives:

- Identification of issues/complaints from the public related to accessibility at public places (Need to capture location of the place through Google Maps).
- **Uploading geotagged pictures:** To understand and identify which type of public place is having issues related to accessibility for disabled people.
- Any person facing difficulty or issue related to accessibility in India can raise their concerns/grievances on the App.
- A partnership has been established with the NGO Mission Accessibility and the research institute I-STEM to develop the AI-enabled app.

### 2. Yudh Abhyas:

It is a **joint military exercise conducted annually between India and USA. It has been ongoing since 2004.** It is designed to promote cooperation between the two militaries while sharing training, cultural exchanges and building joint operating skills. **The previous edition of the exercise was conducted at Fort Wainwright, Alaska, USA. This year marks the 20th edition of the exercise.**

**Location: Mahajan Field Firing Range in Rajasthan**

### 3. Kawasaki Disease:

It is also **known as Kawasaki syndrome or mucocutaneous lymph node syndrome.** It is a rare disease that causes fever and inflammation of the blood vessels, mainly in children under 5 years of age. It is one of the most common forms of acquired heart disease in children. The condition causes the immune system to attack blood vessels, which become inflamed and swollen. **The disease was first described in Japan by Tomisaku Kawasaki in 1967 and the first cases outside of Japan were reported in Hawaii in 1976.**

The cause of Kawasaki disease is unknown, although more cases happen in late winter and early spring.

#### 4. Swachh Vayu Sarvekshan Award:

It is an initiative by Ministry of Environment, Forest and Climate Change (MoEF&CC) to rank cities on the basis of the implementation of activities approved under the city action plan and air quality in 130 NCAP cities. In September 2022, the MoEF&CC released guidelines on 'Swachh Vayu Sarvekshan- Ranking of Cities' under the National Clean Air Programme (NCAP). The aim of launching Swachh Vayu Sarvekshan is to give a ranking to 130 cities in the country for implementing City Action Plans prepared as part of NCAP for reducing air pollution by up to 40% by 2025-26. All 130 cities covered under NCAP are assessed based on information submitted under ranking framework by cities/ULBs on the PRANA portal.

Swachh Vayu Sarvekshan Awards 2024 were presented to the best performing NCAP cities under:

- **Category-1 (population over 10 Lakhs)** to Surat, Jabalpur and Agra;
- **Category-2 (population between 3 and 10 Lakhs)** to Firozabad, Amravati and Jhansi; and
- **Category-3 (population under 3 Lakhs)** to Raebareli, Nalgonda.

### 11 SEPTEMBER

#### 1. District Agro-Meteorology Units Working:

The DAMUs were located within Krishi Vigyan Kendras (KVKs). They used weather data provided by the IMD like rainfall, temperature and wind speeds to prepare agricultural advisories related to sowing and harvesting, usage of fertilizers and pesticides, irrigation etc. These advisories were sent to millions of farmers across the country free-of-cost in local languages twice a week. They were shared via text messages, WhatsApp groups, newspapers and also through in-person communication. They also served as early warnings for extreme events like droughts and heavy rainfall.

#### 2. Nilgiri Mountain Railway:

It was in 1854, that the first plans were made to build a mountain Railway from Mettupalaiyam to the Nilgiri

Hills. The line was completed and opened for traffic in June 1899. It was **operated first by the Madras Railway under an agreement with the Government**. In 2005, the Nilgiri Mountain Railway was recognized as a UNESCO World Heritage Site, joining the ranks of India's other famous mountain railways, such as the Darjeeling Himalayan Railway and the Kalka-Shimla Railway.

#### 3. INS Malpe and INS Mulki:

They are two indigenously designed and constructed Anti-Submarine Warfare Shallow Watercrafts (ASWCWC) built for the Indian Navy. This is **the fourth and fifth ASWCWC being built for the Navy. They are constructed by the Cochin Shipyard Limited (CSL)**. The contract to build eight ASWSWC ships was signed between the Ministry of Defence (MoD). These **vessels, known as the Mahe Class, will replace the current Abhay Class ASW Corvettes in the Indian Navy.**

#### 4. Yellow Food Dye:

Recently, a recent study has demonstrated that tartrazine, a common food dye, can make the skin of living mice temporarily transparent. It is also **known as tartrazine and is a synthetic food colorant classified as an azo dye**. It is lemon yellow in color and water soluble. It is used in many dairy products, beverages, desserts and confectioneries etc.

### 12 SEPTEMBER

#### 1. Standing Committee on Statistics:

It was formed in 2019 to provide a new internal oversight mechanism for official data, revamping a Standing Committee on Economic Statistics (SCES).

#### Need:

The development assumes significance amid sharp critiques of India's statistical machinery by members of the Economic Advisory Council (EAC) to the PM. The **EAC's chairperson (Bibek Debroy) had mooted an overhaul of the system and contended that the Indian Statistical Service has "little expertise in survey design"**.

#### Terms of reference:

- To ensure more coverage, the panel can have up to 16 members.



- To expand the mandate beyond economic data and advise the Ministry on technical aspects of all surveys, such as sampling, design, survey methodology and finalisation of results.
- To identify data gaps that need to be filled by official statistics, along with an appropriate strategy to plug those gaps.

## 2. Air Quality Management Exchange Platform:

Recently, the **Climate and Clean Air Coalition (CCAC)** has developed and launched an **Air Quality Management Exchange Platform (AQMx)**. It is a platform that provides the latest air quality management guidance and tools proposed to meet **WHO Air Quality Guidelines interim targets**. It was developed in response to a resolution passed at this year's **United Nations Environment Assembly to increase regional cooperation and action on improving air quality globally**.

### Significance of the platform:

It will help to address air quality management capacity gaps, notably with curated guidance across key themes, including how to go about air quality monitoring, inventory development and health impact assessments. The platform will expand to allow regional and sub-regional communities to exchange knowledge about air quality management best practices.

## 3. Parliamentary Committee on Official Language:

The **Parliamentary Committee on Official Language** was constituted under the provisions of **Section 4 of the Official Languages Act, 1963, in the year 1976**. Section 4 of the Act says "There shall be constituted a Committee on Official language, on a resolution to that effect being moved in either House of Parliament with the previous sanction of the President and passed by both Houses". **The Committee is chaired by the Union Home Minister, and has, in accordance with the provisions of the 1963 Act**. Under the provisions of the 1963 Act, the panel submits its report to the President, who "shall [then] cause the report to be laid before each House of Parliament, and sent to all the State Governments".

**Purpose of the committee:** To review the progress made in the use of Hindi for official purposes, and to

make recommendations to increase the use of Hindi in official communications.

**Members:** It comprises 30 members of Parliament, of which 20 are from the Lok Sabha and 10 from the Rajya Sabha.

## 4. Anusandhan National Research Foundation (ANRF):

The **ANRF has been established with the Anusandhan National Research Foundation (ANRF) Act 2023 and as per recommendations of the National Education Policy (NEP) 2020**. It will act as an apex body to provide high-level strategic direction of scientific research in the country. It **aims to seed, grow and promote R&D and foster a culture of research and innovation throughout India's universities, colleges, research institutions, and R&D laboratories**.

### It will -

- Forge collaborations among the industry, academia, and government departments and research institutions, and
- Create an interface mechanism for participation and contribution of industries and State governments in addition to the scientific and line ministries
- With the establishment of ANRF, the Science and Engineering Research Board (SERB) established by an act of Parliament in 2008 has been subsumed into ANRF.

## 13 SEPTEMBER

### 1. Criteria for grant of Maharatna status to CPSEs:

Having Navratna status. **Listed on Indian stock exchange** with minimum prescribed public shareholding under SEBI regulations.

### Should have significant global presence/international operations.

- An average annual turnover of more than Rs. 25,000 crore during the last 3 years
- An average annual net worth of more than Rs. 15,000 crore during the last 3 years
- An average annual net profit after tax of more than Rs. 5,000 crore during the last 3 years

## 2. CENTRAL VIGILANCE COMMISSION (CVC):

**Established - 1964 (Executive Resolution)**

**Statutory Status - 2003**

**Recommended** - By The **Santhanam Committee on Prevention of Corruption (1962 - 1964).**

**Works Under- The Prevention of Corruption Act, 1988**

**Organization** - Central Vigilance Commissioner (Chairperson), Two Vigilance Commissioners (Members)

**Consist** - Secretariat, Chief Technical Examiners' Wing (CTE) and a wing of Commissioners for Departmental Inquiries (CDI).

**Appointment Committee** - The Prime Minister (Chairperson), The Minister of Home Affairs (Member) and The Leader of the Opposition in the Lok Sabha.

**Only Advisory Body.**

### **3. PATTACHITRA PAINTING:**

**Traditional Painting of Odisha**

**PATTA - Canvas / Cloth, CHITRA - Picture**

**Based** - Hindu Mythology

**Inspired by Jagannath and Vaishnava sect**

**Resemble The Old Murals of Odisha Especially Religious Centres of Puri, Konark and Bhubaneswar Region (especially in the village of Raghurajpur)**

**Features** - Preparing a Cotton Cloth Canvas with Chalk & Tamarind Seed Paste, Sketching Outlines & Filling Them With Natural Dyes.

**Colours** - Natural Sources [Burnt Coconut Shells , Hingula , a mineral colour etc]

No Pencil or Charcoal is Used.

**On Palm Leaf – TALAPATTACHITRA**

### **4. NABARD: National Bank for Agriculture and Rural Development:**

**Established - 1982** [B. Sivaraman Committee]

**Statutory body under NABARD ACT 1981.**

**Headquarters - Mumbai**

**Owner** - Fully owned by government.

**Operates Under: Department of Financial Services (DFS) under the Ministry of Finance.**

All India Financial Institution

**Supervise:**

1. Regional rural banks (RRB)
2. State co- operative agriculture & rural development bank (SCARDBs)
3. Commercial banks (CBs)
4. State co - operative banks (SCBs)
5. Other Financial institutions under RBI

## **14 SEPTEMBER**

### **1. Software-as-a-Service (SaaS):**

**SaaS is a cloud-based method of delivering software where users subscribe to access applications on the Internet** rather than purchasing them outright. The software is located on external servers rather than on servers located in-house. SaaS vendors host services and applications for customers to access on-demand. These services are available to end-users over the internet, so the end-users do not need to install any software on their devices to access these services. **Common SaaS examples include email, calendaring and cloud-based collaborative tools like Slack.**

### **2. Storm Shadow Missile:**

It is a low-observable, long-range air-launched cruise missile. It is **jointly developed by the United Kingdom and France. 'Storm Shadow' is the weapon's British name, while in France it is called the SCALP-EG.** The missile is intended to strike high-value stationary assets such as airbases, radar installations, communications hubs, and port facilities. It is **also in service with the air forces of Egypt, India, Italy, Greece, Saudi Arabia, Qatar and the United Arab Emirates (UAE).**

### **3. Exercise AL NAJAH:**

It is a joint military exercise between India and Oman. **The exercise is scheduled to be conducted at Rabkoot Training Area in Salalah, Oman.** Exercise AL NAJAH has been held biennially since 2015, alternating between India and Oman. Last edition of the same exercise was conducted at Mahajan in Rajasthan.

### **4. Saarthi App:**

**Recently, Open Network for Digital Commerce (ONDC) launched Saarthi app in collaboration with Bhashini.** It is a reference application designed to assist businesses in creating their own customised buyer-side apps. It supports network participants in building buyer apps with multilingual features. **The app initially supports Hindi, English, Marathi, Bangla and Tamil, with plans to scale up to all 22 languages provided by Bhashini.**

**Features:** It includes real-time translation, transliteration, and voice recognition allow businesses

to expand market reach, enabling companies to tap into new regions and increase customer acquisition.

## 16 SEPTEMBER

### 1. Mission Mausam:

It is envisaged to be a multi-faceted and transformative initiative to tremendously boost India's weather and climate-related science, research, and services. It will exponentially expound research and development, and capacity in atmospheric sciences, especially weather surveillance, modelling, forecasting, and management. By integrating advanced observation systems, high-performance computing, and cutting-edge technologies like artificial intelligence and machine learning. Its focus will include improving observations and understanding for providing highly accurate and timely weather and climate information across temporal and spatial scales.

### 2. INDUS-X Summit:

The third edition of the INDUS-X Summit concluded in the United States, marking a progress in the India-US partnership. It was launched in 2023.

**Objective:** To expand strategic technology partnerships and defense industrial cooperation between governments, businesses, and academic institutions in India and the US.

INDUS X will be a defence innovation bridge, which will inter-alia, include Joint Challenges, Joint Innovation Fund, Academia engagement, Industry-startup connect, investment by private entities in defence projects, mentoring by experts and niche technology projects etc. The INDUS-X initiative is being steered by Innovations for Defence Excellence (iDEX) on behalf of Ministry of Defence and Defence Innovation Unit (DIU) under the U.S. Department of Defense (DoD).

### 3. World Heritage Site (WHS):

The Supreme Court recently dismissed an application seeking to declare the city of Agra as a "World Heritage Site." World Heritage Sites are cultural and/or natural sites with legal protection inscribed on UNESCO World Heritage List. The sites are designated as having "outstanding universal value" under the Convention Concerning the Protection of the World Cultural and Natural Heritage (World Heritage

Convention). This document was adopted by UNESCO in 1972 and formally took effect in 1975 after having been ratified by 20 countries. As of July 2024, a total of 1,199 World Heritage Sites exist across 168 countries. The countries with the most sites are Italy (59), China (57), Germany (52), France (52), Spain (50), India (42), Mexico (35), the United Kingdom (33) and Russia (31).

### 4. OpenAI o1:

Recently, OpenAI has released a new AI model called o1 and also released a smaller, cheaper version of the o1 called o1-mini. It is a new Large Language Model (LLM) trained with reinforcement learning to perform complex reasoning. It thinks before it answers—it can produce a long internal chain of thought before responding to the user. This model can reason through complex tasks and solve harder problems than previous models in science, coding and math. It has trained these models to spend more time thinking through problems before they respond, much like a human would. OpenAI's previous GPT models were simply taught to provide answers by detecting patterns in training data. Currently, the o1 can neither browse the internet nor process files and images. It also lacks factual information about recent world events.

## 17 SEPTEMBER

### 1. International Day of Democracy:

It is an annual celebration observed on September 15. The United Nations General Assembly (UNGA) established this day in 2007 to emphasise the global significance of democracy. It calls for active engagement from international organizations, nation-states, civil society, and people to pursue the democratic idea.

#### History:

September 15 was chosen to coincide with the anniversary of the Inter-Parliamentary Union's Universal Declaration on Democracy, which was adopted in Geneva on September 15, 1997. The first-ever International Day of Democracy was held in 2008.

### 2. BHASKAR Platform:

The Bharat Startup Knowledge Access Registry (BHASKAR) initiative, under the Startup India program

aimed at strengthening India's startup ecosystem. It is a platform designed to centralize, streamline and enhance collaboration among key stakeholders within the entrepreneurial ecosystem, including startups, investors, mentors, service providers and government bodies. **The primary goal of BHASKAR is to build the world's largest digital registry for stakeholders within the startup ecosystem.**

### **3. Road Connectivity Project for Left Wing Extremism Affected Areas:**

The Centre has doubled the allocation of funds under the **Road Connectivity Project for Left Wing Extremism Affected Areas (RCPLWEA) for financial year 2024-25**. Earlier, Union Home Minister Amit Shah announced that Left Wing Extremism will be "completely eradicated" in the country before March 2026. **The Union Government's Road Connectivity Project for Left Wing Extremism (LWE) Affected Areas aims to improve infrastructure in regions impacted by insurgency and extremism.** As a separate vertical under the Pradhan Mantri Gram Sadak Yojana (PMGSY), it is **aimed at providing all-weather road connectivity with culverts and cross-drainage structures in 44 worst-affected LWE districts and adjoining districts in 9 states.** Under the scheme, the Centre and states share the expenditure in 60:40 ratio — same as under PMGSY.

### **4. Typhoon Yagi:**

**Typhoon Yagi, the strongest tropical cyclone in Asia this year and second only to Hurricane Beryl globally,** has caused widespread devastation across Southeast Asia. **Countries like the Philippines, China, Laos, Myanmar, and Thailand have been severely affected,** but Vietnam has borne the brunt of the storm, with around 233 deaths. **Torrential rains, floods, and landslides** have added to the challenges faced by millions in the affected areas.

## **18 SEPTEMBER**

### **1. Invest India:**

It is the **National Investment Promotion and Facilitation Agency of India and acts as the first point of reference for investors in India.** It was set up as a non-profit venture under the aegis of the Department for Promotion of Industry and Internal Trade (DPIIT), Ministry of Commerce and Industry, Government of

India. It **facilitates and empowers all investors under the 'Make in India' initiative to establish, operate, and expand their businesses in India.** Its domain and functional experts provide sector- and state-specific inputs and hand-holding support to investors through the entire investment cycle, from pre-investment and decision-making to after-care. **Headquarters: New Delhi**

### **2. National Start-up Advisory Council:**

It was **constituted by the DPIIT under the Union Ministry of Commerce and Industry.**

**Objective:** To advise the Government on measures needed to build a strong ecosystem for nurturing innovation and startups in the country.

#### **Composition:**

**Chairman:** Minister for Commerce & Industry.

**Ex-officio Members:** Nominees of the concerned Ministries/Departments/Organisations not below the rank of Joint Secretary.

**Besides the ex-officio members, the council has non-official members,** representing various stakeholders such as founders of successful startups and veterans who have grown and scaled companies in India. It is a one of its kind congregation wherein the policy making process is driven as part of collaboration between all the key stakeholders of the startup ecosystem.

### **3. Smart Precision Horticulture Programme:**

It uses **smart technology such as Internet of Things, Artificial Intelligence, drones and data analytics to boost production through maximal use of resources** while minimising environmental impact. It will cover 15,000 acres of land in five years from 2024-25 to 2028-29 and is expected to benefit about 60,000 farmers. **At present, the Agriculture Infrastructure Fund (AIF), launched during Covid-19, has provisions for financing infrastructure projects for smart and precision agriculture.** Apart from offering financial support, the Centre is also considering collaborating with the Netherlands and Israel, where tech-based modern farming solutions are being used, through Centres of Excellences (CoEs). **The Centre has also set up 22 Precision Farming Development Centres (PFDCs) across the country to test new technologies and modify them according to local needs.**

#### 4. Centre for Rural Enterprise Acceleration through Technology:

Recently, the **union Minister for Ministry of Micro, Small & Medium Enterprises (MSME) inaugurated the Centre for Rural Enterprise Acceleration through Technology (CREATE) setup at Leh through virtual mode.** It will enhance local productivity, product quality, and economic potential and improve livelihoods for the local communities. It **will help advance rural industrialization and foster enterprise creation, to retain the traditional artisans.**

##### CREATE will provide:

- A Pashmina Wool Roving Facility.
- Training for **development of production facility for Essential Oil Extraction** from Roses and Other Flowers and raw materials.
- The machinery required for Pashmina wool roving has been installed, commissioned and is ready for operation.

### 19 SEPTEMBER

#### 1. Online Information and Database Access or Retrieval (OIDAR) services:

It is a category of services provided through the medium of the internet, and received by the recipient online without having any physical interface with the supplier of such services. **OIDAR services, delivered over the internet or electronic networks, are highly dependent on information technology and include offerings such as cloud services, digital content, online gaming, and online advertising.** When such services are provided by an offshore entity to a non-taxable recipient, the supplier becomes liable for obtaining registration and discharging GST on the same. According to DGGI in its annual report noted that since the OIDAR service providers are located abroad it becomes a challenge in GST enforcement and hence the sector remains relatively untapped and holds tremendous revenue potential.

#### 2. SUBHADRA Scheme:

Recently, the **Prime Minister of India launched 'SUBHADRA', the flagship Scheme of Government of Odisha, in Bhubaneswar, Odisha.** It is named after Goddess Subhadra, the younger sibling of Lord Jagannath, the presiding deity of Odisha. All eligible

beneficiaries between the age of 21-60 years would receive Rs. 50,000/- over a period of 5 years between 2024-25 to 2028-29. An amount of Rs 10,000/- per annum in two equal installments will be credited directly to the beneficiary's Aadhaar-enabled and DBT-enabled bank account. **Women from economically well-off families, government employees, and income-tax payees will not be eligible for the scheme.** Women who receive assistance of Rs 1,500 or more per month (or Rs 18,000 or more per year) under any other government scheme will also be excluded.

#### 3. Karam Festival:

Karma Puja, one of the most popular festivals, is related to the harvest and a tribute to the Karam tree. This tree **symbolises fertility, prosperity and everything that is auspicious.**

**Origin:** The origin of the festival can be traced to the beginning of agriculture by tribal communities.

The **festival is popular especially among the Munda, Ho, Oraon, Baiga, Kharia, and Santhal peoples.** It is mainly celebrated in Jharkhand, West Bengal, Bihar, Madhya Pradesh, Chhattisgarh, Assam, and Odisha.

#### 4. Economic Advisory Council to the Prime Minister (EAC-PM):

It is a **non-constitutional, non-permanent and independent body constituted to give economic advice to the Government of India, specifically the Prime Minister.** It has been constituted several times since the independence of India. In 2017, the body was revived and currently the PMEAC chairman post is held by Bibek Debroy. The council serves to highlight key economic issues facing the country to the government of India from a neutral viewpoint. **It advises the PM on economic issues like inflation, microfinance, and industrial output.**

### 20 SEPTEMBER

#### 1. Venus Orbiter Mission:

It is **envisaged to orbit a scientific spacecraft in the orbit of planet Venus.** It is for better understanding of the Venusian surface and subsurface, atmospheric processes and influence of Sun on Venusian atmosphere. **India Space Research Organisation (ISRO) will be responsible for the development of spacecraft and its launch.** The mission is expected to

be accomplished on the opportunity available during March 2028.

**Significance:** Venus, the closest planet to Earth and believed to have formed in conditions similar to Earth, offers a unique opportunity to understand how planetary environments can evolve very differently.

## 2. NPS Vatsalya Scheme:

It is an extension of the existing National Pension Scheme (NPS) but focuses on children.

**Eligibility for NPS Vatsalya as follows:**

**All minor citizens (age below 18 years).**

**Both the child and the parent must be Indian citizens.**

All parties must comply with the Know Your Customer (KYC) requirements.

Account can be opened in the name of minor and operated by parent or guardian. **Minor will be the beneficiary.**

**Scheme can be opened through various Points of presence regulated by Pension Fund Regulatory Authority of India (PFRDA) such as major banks, India Post, Pension Funds and Online platform (e-NPS)**

**Contribution:** Subscriber to make a minimum contribution of Rs 1000/- per annum. There is no limit on the maximum contribution.

On attaining the age of majority, the plan can be converted seamlessly into a normal NPS account.

**Withdrawal rules:**

**After three years of opening the NPS vatsalya account, partial withdrawals are allowed.** Up to 25% of the corpus can be withdrawn for specific purposes, including **education, medical treatment for certain illnesses, or disabilities over 75%.**

Once the child attains the age of 18, the corpus of up to Rs 2.5 lakh can be withdrawn entirely and if it exceeds, the 20% can be withdrawn and rest 80% can be used for annuity purchase in the NPS.

In the unfortunate event of a subscriber's death, the entire corpus is given to the nominee, usually the guardian. If the guardian dies, a new guardian must be assigned after completing a new KYC.

If both parents die, a legal guardian can manage the account without further contributions until the child turns 18.

## 3. Next Generation Launch Vehicle:

It will **have 3 times the present payload capability with 1.5 times the cost compared to LVM3**, and will also have reusability resulting in low-cost access to space and modular green propulsion systems.

**Significance:**

It will **enable national & commercial missions including launch of human spaceflight missions to Bharatiya Antariksh Station.** Lunar/inter-planetary exploration missions along with communication & earth observation satellite constellations to Low Earth Orbit that will benefit the entire space ecosystem in the country. This **project will boost the Indian space ecosystem in terms of capability and capacity.**

## 4. Bio-RIDE Scheme:

It is **designed to foster innovation, promote bio-entrepreneurship, and strengthen India's position as a global leader in biomanufacturing and biotechnology.** It aims to accelerate research, enhance product development, and bridge the gap between academic research and industrial applications.

**The scheme has three broad components:**

- Biotechnology Research and Development (R&D);
- Industrial & Entrepreneurship Development (I&ED)
- Biomanufacturing and Biofoundry (New component under this new scheme)

## 21 SEPTEMBER

### 1. TRISHNA Mission:

The **Thermal Infrared Imaging Satellite for High-resolution Natural Resource Assessment (TRISHNA)** mission a collaborative endeavor between the **Indian Space Research Organisation (Isro) the French Space Agency CNES.** It is engineered to deliver high spatial and temporal resolution observations of Earth's surface temperature, vegetation health, and water cycle dynamics. It will also help in a comprehensive assessment of urban heat islands, detection of thermal anomalies linked to volcanic activity and geothermal resources, and precise monitoring of snow-melt runoff and glacier dynamics. The **mission will also provide valuable data on aerosol optical depth, atmospheric water vapor, and cloud cover.**

### 2. Mini-moon:

According to a new study, the **Earth's gravitational field will temporarily capture a small asteroid named 2024 PT5 which will behave as a 'mini moon'.** Mini-moons are asteroids that fail to escape Earth's gravity and end up orbiting the planet for some time. They are usually very small and hard to detect — only four mini-moons of Earth have ever been discovered, and none are still orbiting Earth. These events are relatively frequent, with similar occurrences happening every few decades. **Mini moons are captured from the Near-Earth Object (NEO) population, which consists of asteroids and other celestial bodies that pass close to Earth.**

### **3. Vivad Se Vishwas Scheme 2024 (VSV 2.0):**

The scheme aims to reduce ongoing litigations related to income tax. **VSV 2.0 will enable taxpayers and the Income Tax Department to resolve disputes through a streamlined appeals process.** It will provide a mechanism for filing appeals across various appellate forums, including the Joint Commissioner of Income-tax (Appeals), the Income Tax Appellate Tribunal (ITAT), and higher courts. The scheme covers appeals, writ petitions, and special leave petitions pending as of July 22, 2024, and will waive penalties and interest for settlements, ensuring no prosecution will be initiated for cases resolved under the scheme. **The scheme also covers cases with objections filed before the Dispute Resolution Panel (DRP) where no final assessment order has been issued and pending revision applications before the Commissioner.**

## **23 SEPTEMBER**

### **1. Exercise AIKYA:**

Recently, the **National Disaster Management Authority (NDMA), in collaboration with the Southern Command of the Indian Army organised a two-day national symposium, 'Exercise AIKYA', on disaster management in Chennai.** It is to enhance disaster preparedness and response capabilities.

### **2. Global Cybersecurity Index:**

India has marked a significant milestone in its cybersecurity efforts by achieving top Tier i.e. Tier 1 status in the **Global Cybersecurity Index (GCI) 2024.** It is a trusted reference that measures the commitment of countries to cybersecurity at a global level. Each

country's level of development or engagement is assessed along five pillars namely, **Legal Measures, Technical Measures, Organizational Measures, Capacity Development, and Cooperation** – and then aggregated into an overall score. It is **published by the International Telecommunication Union (ITU).** The report places 46 countries in Tier 1, the highest of the five tiers, reserved for "role modelling" countries that demonstrate a strong commitment in all five cybersecurity pillars. With a remarkable score of **98.49 out of 100, India joins the ranks of 'role-modelling' countries.**

### **3. Europa clipper Mission:**

It is a **NASA mission to study Jupiter's icy moon Europa. The mission will place a spacecraft in orbit around Jupiter in order to perform a detailed investigation of Europa.** The first NASA spacecraft dedicated to studying an ocean world beyond Earth, Europa Clipper aims to find out if the ice-encased moon Europa could be habitable. It is **the largest spacecraft NASA has ever developed for a planetary mission.** The spacecraft has large solar arrays to collect enough light for its power needs

### **4. INSPIRE – MANAK Programme:**

The **INSPIRE – MANAK (Million Minds Augmenting National Aspiration and Knowledge)** is one of the flagship schemes of the **Department of Science and Technology (DST), Govt. of India.** It is for nurturing ideas and innovations of school students and motivates them to pursue science and a career in research. It is **jointly implemented by DST and the National Innovation Foundation (NIF) – India.** It aims to motivate students in the age group of 10-15 years and studying in classes 6 to 10 to become future innovators and critical thinkers.

## **24 SEPTEMBER**

### **1. Goa Maritime Symposium 2024:**

**Indian Navy is hosting the fifth edition of the Goa Maritime Symposium at Naval War College, Goa.** It is a forum for fostering collaborative thinking, cooperation, and mutual understanding between India and key maritime nations of the Indian Ocean Region. **It will be participated by the representatives from 12 Indian Ocean Littoral countries- Bangladesh, Comoros, Indonesia, Madagascar, Malaysia,**

**Maldives, Mauritius, Myanmar, Seychelles, Singapore, Sri Lanka and Thailand. Observers from Kenya and Tanzania.** It was conceptualised and instituted by the Indian Navy in 2016. **The symposium is conducted biennially by the Naval War College (NWC), Goa.**

### **2. Quad Cancer Moonshot Initiative:**

It was **launched by the QUAD countries (India, United States, Australia and Japan).** It is aimed at **implementing innovative strategies to prevent, detect, treat and alleviate the impact of cancer on patients and their families.** India will, additionally, offer technical assistance to interested countries in the Indo-Pacific region on DPI for cancer screening, care and continuum through its US \$10 million contribution to WHO's-Global Initiative on Digital Health. India commits to providing HPV sampling kits, detection tools and cervical cancer vaccines worth \$7.5 million to the Indo-Pacific region. India is working on an AI based treatment protocol for the disease.

### **3. Project 200:**

It is an innovative satellite designed to operate at an Ultra-Low Earth Orbit (180 km-250 km). It was **developed by Bellatrix Aerospace, a Bengaluru-based space startup.** Traditionally, satellites have been deployed in orbits at altitudes well above 450 km. **Though it is known that a satellite's capabilities improve significantly at 200 km, limitations on propulsion technology have prevented satellites from operating at this orbit.** The cost of the satellite is also less when compared to spacecraft placed in 450 km orbits.

### **4. Food Import Rejection Alert Portal:**

It is an **online portal for notification of food import rejections at Indian borders. It has been developed by the Food Safety Standards Authority of India (FSSAI).** It is designed to notify the public and relevant food safety authorities about food import rejections at Indian borders. It will **facilitate rapid exchange of information among authorities worldwide on food safety and health risks stemming from rejected food.** It will also enable relevant food authorities to take immediate action for prevention and control of risks before it causes harm.

## **25 SEPTEMBER**

### **1. National Consumer Disputes Redressal Commission:**

It is a **quasi-judicial commission set up in 1988 under the Consumer Protection Act of 1986.**

**Mandate:** To provide **inexpensive, speedy, and summary redressal of consumer disputes.**

It is headed by a **sitting or a retired Judge of the SC or a sitting or a retired Chief Justice of a High Court.** NCDRC shall have jurisdiction to entertain a complaint valued more than two crore and also have **appellate and revisional jurisdiction** from the orders of State Commissions or the District fora as the case may be. **The provisions of this act cover 'goods' as well as 'services'.**

#### **Who Can File a Complaint:**

- Any voluntary consumer association registered under the Companies Act 1956
- The Central Government or any State Government
- One or more consumers where there are numerous consumers.
- **Appeal:** Any person aggrieved by an order of NCDRC, may prefer an appeal against such an order to SC within a period of 30 days.

### **2. Integrated Development of Wildlife Habitat Scheme:**

It is a Centrally Sponsored Scheme launched by the **union Ministry of Environment, Forest and Climate Change.** It has been made operational by adding more components and activities to the erstwhile Centrally Sponsored Scheme - "**Assistance for the Development of National Parks and Sanctuaries**" during the **11th Plan Period.** It envisages boosting technological interventions in different thematic areas over the current and next financial year in tiger and other wildlife habitats.

#### **Components of the scheme:**

- Support to Protected Areas
- Protection of Wildlife Outside Protected Areas
- Recovery programmes for saving critically endangered species and habitats
- **Sub components of IDWH:** Project Tiger, Project Elephant, Development of Wildlife Habitat.



### 3. SPICED Scheme:

It is aimed at significantly enhancing the export of spices and value-added spice products as well as improving the productivity of cardamoms and upgrading the post-harvest quality of spices across India for export. It is **implemented during the remaining term of the 15th Finance Commission, up to 2025-26**. It is expected to facilitate value addition and to drive innovation and sustainability in the spice sector by introducing new sub-components/programs like the **Mission Value Addition, Mission Clean and Safe Spices, promotion of GI spices, support for entrepreneurship through Spice Incubation Centres, etc.** While exporters with a valid Certificate of Registration as Exporter of Spices (CRES) are eligible for assistance under these programs, preference will be given to first-time applicants, Small and Medium Enterprises (SMEs), etc.

## 26 SEPTEMBER

### 1. CSIRT-Power:

It was **launched in collaboration with CERT-In and it is in alignment with the National Cyber Security Policy of 2013**. It will serve as the central agency for responding to cyber incidents and ensuring coordinated responses.

**Objective:** The primary objective of CSIRT-Power is to **enhance cybersecurity resilience in the Indian power sector** through a structured approach. It is set up under the **Central Electricity Authority**.

### 2. Pact for the Future:

It is a landmark declaration reaffirming the commitment of UN Member States to sustainable development, peace, and stronger global governance.

#### The Pact's five broad focus areas include:

- **Sustainable development:** It includes a pledge to move faster towards achieving the UN's Sustainable Development Goals (SDGs).
- **International peace and security:** Redouble efforts to build and sustain peaceful, inclusive and just societies.
- Science and technology and digital revolution.
- **Youth and future generations:** Listen to young people and include them in decision-making, at the national and global levels

- **Transforming global governance:** Build stronger partnerships with civil society, the private sector, local and regional authorities.

### 3. Mankidia Tribe:

Recently, the Mankidia community became the 6th particularly vulnerable tribal group (PVTG) PVTG to get habitat rights over forests in Odisha. The Mankidia community is an **Austro-Asiatic community that ekes out a living mainly from the forests**. They constitute a semi-nomadic section of the Birhor tribe.

**Occupation:** They are **primarily a food gathering and hunting**. They wander inside forests in small bands and stay at different tandas — the temporary makeshift settlements comprising of **temporary dome-shaped leaf huts known as Kumbhas**.

**Language:** They speak a form of **Munda language** and some of them are also conversant in Odia.

They believe in both malevolent and benevolent spirits and Gods. **Logobir and Budhimai are their supreme deities**. The worship their ancestors for the purpose of enjoying health and achieving success in hunting and collecting forest produce. They are mainly found in **Odisha, Jharkhand, Madhya Pradesh and West Bengal**.

### 4. Nagar Van Yojana (NVY):

It was **launched in 2020 in an effort to enhance the urban greenery for improving the quality of life and increasing social cohesion in cities**. The scheme provides financial assistance of Rs. 4 lakh per hectare for the creation and maintenance of these urban forests, encouraging the involvement of citizens, students, and other stakeholders. **Nagar Van areas range from a minimum of 10 ha to 50 ha**. The scheme covers all cities with Municipal Corporations, Municipalities and Urban Local Bodies (ULBs). Presently, the **Nagar Van Yojana aims to develop 1000 Nagar Vans by the year 2027 with the financial support of National Fund of National Compensatory Afforestation Management and Planning Authority (National CAMPA)**.

## 27 SEPTEMBER

### 1. Unified Logistics Interface Platform:

ULIP is a digital gateway that allows industry players to access logistics-related datasets from various

Government systems through API-based integration. It was **launched by the Prime Minister as part of the 'National Logistics Policy (NLP)' on September 17, 2022.**

**Objectives:**

- To create a nationwide **single window logistics platform** for end-to-end visibility.
- To develop a logistics gateway by integrating information available with various Govt. agencies across the value chain.
- To provide visibility for optimal usage of various modes of transportation.

**2. Periodic Labour Force Survey (PLFS):**

Considering the importance of availability of labour force data at more frequent time intervals, the **National Statistical Office (NSO) launched the Periodic Labour Force Survey in April 2017.**

**Objective:**

- To **estimate the key employment and unemployment indicators** (viz. Worker Population Ratio, Labour Force Participation Rate, Unemployment Rate) in the short time interval of three months for the urban areas only in the 'Current Weekly Status' (CWS).
- To estimate employment and unemployment indicators in both '**Usual Status' and CWS in both rural and urban areas annually.**

**The indicators of this survey are defined as follows:**

- **Labour Force Participation Rate (LFPR):** LFPR is defined as the percentage of persons in labour force (i.e. working or seeking or available for work) in the population.
- **Worker Population Ratio (WPR):** WPR is defined as the percentage of employed persons in the population.
- **Unemployment Rate (UR) :** UR is defined as the percentage of persons unemployed among the persons in the labour force.
- **Current Weekly Status (CWS):** The activity status determined on the basis of a reference period of last 7 days preceding the date of survey is known as the current weekly status (CWS) of the person.

This survey is conducted by the **National Sample Survey (NSO), working under the Ministry of Statistics and Programme Implementation (MoSPI).**

**3. Key Findings of PLFS (2023-24):**

- Labour Force Participation Rate (LFPR) for **persons of age 15 years and above was 60.1%.** The same for male and female was 78.8% and 41.7% respectively.
- Worker Population Ratio (WPR) for persons of age 15 years and above was **58.2%. The same for male and female was 76.3% and 40.3% respectively.**
- **Unemployment Rate (UR) was 3.2%** for both male and females of age 15 years and above.
- Unemployment Rate for male has shown a marginal decline from 3.3% during July 2022 – June 2023 to 3.2% during July 2023 – June 2024, among females it has increased from 2.9% to 3.2% during the same time span.

**4. Asia Power Index:**

**India ranked third in the annual Asia Power Index, released by an Australian think tank.** It was launched by the Lowy Institute in 2018. It is an **annual measure of power dynamics in the Asia-Pacific region. It evaluates 27 countries across the Asia-Pacific.** The Index focuses on both the material capabilities of states and the influence they exert on the international stage. Timor-Leste has been included for the first time, reflecting its growing importance in Southeast Asia. **It index is divided into resource-based and influence-based determinants**

**30 SEPTEMBER**

**1. Bharat 6G Alliance:**

It is a collaborative platform which aims to achieve **universal and affordable connectivity, promote indigenous technology, and establish India as a global leader in the telecom sector.** This platform consist of public and private companies, academia, research institutions, and standards development organizations, aims to lead the development and deployment of 6G technology in India.

**Aim:** To bring together Indian startups, companies, and the manufacturing ecosystem to establish consortia that drive the **design, development and deployment of 6G technologies in India.**

**2. Paryatan Mitra And Paryatan Didi Initiative:**

The Union Ministry of Tourism has launched a national responsible tourism initiative titled **Paryatan Mitra and**

**Paryatan Didi.** The primary aim of this initiative is to elevate the overall experience for tourists in destinations, by having them meet **'tourist-friendly' people** who are proud Ambassadors and Storytellers for their destination. **Paryatan Mitra and Paryatan Didi were piloted in six tourist destinations across India: Orchha (Madhya Pradesh), Gandikota (Andhra Pradesh), Bodh Gaya (Bihar), Aizawl (Mizoram), Jodhpur (Rajasthan), and Sri Vijaya Puram (Andaman & Nicobar Islands).** Under this special emphasis is being placed on the training of women and youth to enable them to develop new tourism products & experiences like heritage walks, food tours, craft tours, nature treks This training is **driven by the 'Athithi Devo Bhava' philosophy** treating tourists as honored guests.

### **3. Nanjangud Rasabale Banana:**

It is a variety of banana grown in and around the **Mysore district and Chamarajanagar district of Karnataka.** It was awarded the Geographical Indication (GI) tag in 2006 for its thick pulp and distinct taste and aroma.

**Soil required: Black clay alluvial saline soil has given a unique aroma to this banana.** Fruits possess medicinal properties and are believed to cure neurological ailments.

**Threats:** The Panama Wilt disease, a fungal infection caused by the **Fuserium Wilt pathogen** has been the bane of rasabale farmers.

### **4. SASTRA Ramanujan Prize:**

Alexander Dunn has been awarded the prestigious 2024 SASTRA Ramanujan Prize. It was **instituted in the year 2005.** It is awarded every year by the **SASTRA University near Kumbakonam in Tamil Nadu, on Ramanujan's birth anniversary, December 22.**

#### **Eligibility:**

- The **prize is conferred annually to mathematicians from across the world who is less than 32 years of age,** working in an area influenced by the **Srinivasa Ramanujan.**
- The **age limit is 32 years** to commemorate the fact that Ramanujan accomplished a phenomenal body of work in this short span.
- **Cash prize:** It carries a citation and award of \$10,000. This award has gained global repute ever since it was instituted.
- **Recipients: Manjul Bhargava and Akshay Venkatesh**

# PLACES IN NEWS

## 1. Brunei Darussalam (Capital: Bandar Seri Begawan)



PM of India embarked on a first ever bilateral visit by an Indian PM to Brunei Darussalam.

### Political Features

- **Location:** Country in **Southeast Asia** consisting of two unconnected parts, situated on northern coast of island of Borneo.
- **Border:** Apart from northern coastline on South China Sea, it is completely surrounded by **Malaysian state of Sarawak**.
- It is a **member of Commonwealth and ASEAN**.

### Geographical Features

- **Landforms:** Narrow coastal plain in north & rugged hills in south.
- **Highest point:** Pagon Peak
- **Major rivers:** Belait, Tutong, Brunei, Pandaruan etc.
- **Climate:** Equatorial climate influenced by monsoon systems.

## 2. Kenya (Capital: Nairobi)



Recently, 3rd edition of Joint Defence Cooperation Committee meeting between India and Kenya was held in New Delhi.

### Political Features

- Located in Eastern Africa.
- **Neighboring Countries:** Somalia (Northeast), Ethiopia (North), South Sudan (Northwest), Uganda (East), Tanzania (South).
- **Maritime border:** Indian Ocean to the East.
- **UNEP and UN-HABITAT are headquartered in Nairobi.**

### Geographical Features

- Almost bisected horizontally by the Equator.
- **Major Lakes:** Lake Turkana, Lake Victoria (shared by Kenya, Tanzania, and Uganda), etc.
- **Major Rivers:** Athi/Galana, Tana, Mara, etc.
- **Mountain ranges:** Aberdare Range, Mau Escarpment, etc.
- **Highest point:** Mount Kenya (second highest in Africa).

## 3. Gaza Strip



Recently, Israel launches a strike on the **Khan Younis safe zone in Gaza**.

### Political Features

- It is a territory occupying 140 square miles along Mediterranean Sea just **northeast of the Sinai Peninsula**.
- **Bordering countries:** Egypt (Southwest) and Israel (East and north).
- It is the smaller of the two Palestinian territories, the other being the West Bank, that make up the State of Palestine. In the **6-Day War of 1967, it was taken by Israel, which occupied the region for the next quarter century**. In 1994, Israel began a phased transfer of governmental authority in the Gaza Strip to the Palestinian Authority under the terms of the Oslo Accords.

### Geographical Features:

- It is a part of **Levant region** (region along the eastern shores of Mediterranean Shores).
- **Climate:** Mediterranean (hot semi-arid) climate.
- **Major crops:** Citrus fruit, dates, olive, etc.

### 4. Bhadra Tiger Reserve (BTR)



Mikania micrantha weed is rapidly spreading in BTR and threatening its biodiversity.

### About Bhadra Tiger Reserve

- **Location:** Western Ghats of Karnataka, spreading over Chikmagalur and Shimoga districts.
- **Corridor:** Bhadra Tiger Reserve, Kudremukh National Park and Shettihalli Wildlife Sanctuary are part of same landscape.
- **Drained by:** River Bhadra (Tungabhadra River tributary).
- In 1998, **Bhadra Wildlife Sanctuary was included in Project Tiger Network**.

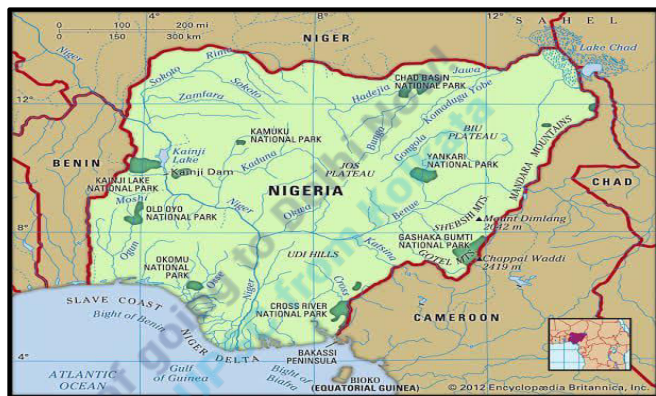
- **Forest types:** Tropical Moist Mixed Deciduous; Tropical Dry Deciduous; Semi-Evergreen Forest.
- **Fauna:** Tiger, Leopard, ungulates like Gaur, Sambar and Barking Deer, etc.

### About Mikania micrantha

**Perennial climber**, originally from tropical America.

It is a major invasive species in several parts of south-east Asia and Pacific islands.

### 5. Nigeria (Capital: Abuja)



Torrential rains and collapse of Alau Dam led to flooding of Northeast Nigeria.

### Political features

- Located on the west coast of Africa.
- **Nigeria is most populous African Country.**
- **Territorial boundaries:** Niger (North), Chad and Cameroon (East), Benin (West)
- **Maritime boundaries:** The Gulf of Guinea of the Atlantic Ocean in the South.

### Geographical Features

- **Major Relief:** Sokota Plains (northwest), Borno Plains (north east), etc.
- **Highest point:** Chappal Waddi
- **Major Rivers:** Sokoto and Niger (forming Niger delta draining into Gulf of Guinea), etc.
- **Major Lake:** Chad (freshwater lake at the conjunction of Chad, Cameroon, Nigeria, and Niger)

### 6. Amazon River



**Solimoes, one of the main tributaries of the mighty Amazon River, is facing the worst drought on record.**

Nearby Lake Tefé has also dried up.

#### About Amazon River:

- **Largest River system** in the world in terms of the **volume of water flow and area of its basin.**
- **Origin:** High in the Peruvian Andes.
- **River basin:** Includes the greater part of Brazil and Peru, significant parts of Colombia, Ecuador, and Bolivia, and a small area of Venezuela.
- **Tributaries:** Approximately 1,100 tributaries, Notable tributaries: Japurá (Caquetá in Colombia), Juruá, Madeira, Negro, Purus, and Xingu rivers.
- **River drains into:** Atlantic Ocean, on the northeastern coast of Brazil.

#### 6. Sri Lanka



#### Political Features

**Location:** An island country in the Indian Ocean separated from peninsular India by Palk Strait.

**Maritime Boundaries:** India (North) and Maldives (South-west)

#### Geographical Features

Geologically, it is considered a southerly extension of peninsular India.

**Longest river:** Mahaweli Ganga River.

**Highest Peak:** Pidurutalagala.

**Biodiversity:** Western Ghats of India and Sri Lanka biodiversity hotspot is often regarded as one unit because of shared biogeographical history.

**Gulf of Mannar and Palk Bay** form a transboundary area within the waters off India and Sri Lanka.

Populations of dugongs and large seagrass meadows are found in this area.

**Culture:** Majority population practise Theravada Buddhism (orthodox school of Buddhism).

#### 7. Barak Bhuban Wildlife Sanctuary

**Location:** Spread between Barak and Sonai Rivers in Assam's Cacher district.

**Named after second largest river in Northeast, Barak.** Barak Valley also houses Borail Wildlife Sanctuary. It was **notified in 2022 by Assam Government.**

**Fauna:** 8 recorded species of primates, namely, slow loris, rhesus, pig-tailed, stump-tailed, Assamese macaque, capped langur, hoolock gibbon, etc.

Provides suitable habitat for King Cobra.

# EDUFACTS

## 4 SEPTEMBER

1. **South-East Asia Region** accounts for **28% of global road traffic deaths** with an estimated 330,222 deaths.
2. Currently, about 70% of the world's semiconductor manufacturing is concentrated in **South Korea, Taiwan, China, the United States, and Japan.**

## 6 SEPTEMBER

1. In 2022, women made up about 12% of the state police. **Chandigarh had the highest at 22%, while Jammu and Kashmir had the lowest at 3.3%** (India Justice Report, 2022).
2. **India** is one of the largest importers of crude oil from **Brunei** (approximately USD 500-600 million every year).

## 10 SEPTEMBER

1. In 2023, **China was a dominant force in global EV market**, exporting 1.6 million EVs valued at USD 36.7 billion.
2. **Global PM2.5 concentrations:** Europe and China show lower PM2.5 pollution, while North America and India see increased emissions from anthropogenic activities.

## 11 SEPTEMBER

1. Almost **30% of UAE's population are Indians** at around 3.5 million (Roughly ~35% of country's population).
2. As of August 6, 2024, total of 23.38 lakh farmers have joined the **Pradhan Mantri Kisan Maan-Dhan Yojana (PM-KMY).**

## 12 SEPTEMBER

1. GCC countries contribute to **35% of India's oil imports and 70% of gas imports.**
2. Between 2005 to 2023, availability (in position) of doctors and medical officers in PHCs has increased from around 20,000 to around 32,000. However, vacancy has also almost doubled in the same period.

## 13 SEPTEMBER

1. In 2019, 1.27 million deaths were directly attributed to drug-resistant infections globally.
2. A global demand of over 100 MMT of Green Hydrogen (GH<sub>2</sub>) and its derivatives like Green Ammonia is expected to emerge by 2030. **India can potentially export about 10 MMT GH<sub>2</sub>/Green Ammonia per annum.**

## 20 SEPTEMBER

1. India has Scheduled Tribe population of 10.45 crore as per 2011 census and there are more than 705 tribal communities.
2. Animation, Visual Effects, Gaming, Comics, and Extended Reality (AVGC-XR) Industry currently employs 2.6 lakh people and is expected to create 23 lakh direct jobs by 2032.

## 24 SEPTEMBER

1. ASEAN constitutes for about **11% share in India's global trade.**
2. According to Ministry of Housing & Urban Affairs' Data, only **16% of land is reclaimed under 'legacy waste management project of Swachh Bharat Mission (SBM) 2.0.**