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NEWS

By CivilsTap Himachal

For HPAS & Other Competitive Exam in Himachal Pradesh
Mains

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GENERAL STUDIES 1.

GEOGRAPHY

URBAN FLOODING AND HUMAN FAILURE: A MAN-MADE DISASTER

Context: Recent tragic accident at an IAS coaching centre in New Delhi, where flooding led to three IAS aspirants dying, was a largely man-made, hence avoidable, disaster. Such incidents are an increasing feature of localised urban flooding in which human failures play a major role.

Urban Flooding in India: A Growing Concern

❖ Urban flooding has become distressingly common in many cities, leading to loss of life, property damage, and economic crises. While natural factors like heavy rainfall and changes in topography contribute to flooding, human actions often play a significant role.

❖ **Expanding Cities and Flood-Prone Areas:** As cities expand, they often encroach upon flood-prone regions. Settlements in these vulnerable areas have more than doubled since 1985.
  ✓ Bengaluru, Gurugram, Mumbai, and other urban centres have witnessed scenes of stagnating water during monsoons. People living in informal structures are particularly at risk.
  ✓ The rapid and continuous expansion of cities exacerbates flood risks. It's essential to account for these risks in urban planning.

❖ **Economic Impact:** Urban floods result in both life and livelihood loss. They can also strain government resources and push economies into crises.
  ✓ For instance, a State Bank of India report estimated that the combined economic loss due to the 2023 North India floods and Cyclone Biparjoy in Gujarat was between Rs 10,000-15,000 crore.

❖ **Global Trends:** A recent study led by the World Bank analysed global flood patterns and urban expansion.
  ✓ East Asia has seen the highest rate of settlement expansion in flood-prone areas, while Sub-Saharan Africa and North America have expanded less into such zones.
  ✓ Middle-income countries, including India, have more urban settlements in flood-prone zones compared to low- and high-income countries.

❖ **India's Position:** India isn't among the 20 countries with the most exposed settlements to flood hazards. However, neighbouring countries like Bangladesh, Bhutan, China, and Myanmar face higher risks.
  ✓ India ranks third globally in terms of new settlements expanding into flood-prone areas (1985-2015), following China and the U.S.

Delhi's Vulnerability

❖ Unchecked urban expansion is a significant factor behind chronic flooding in Delhi and the National Capital Region (NCR).

❖ Recent heavy rains brought parts of Delhi to a standstill, inundating streets and causing traffic snarls.

Key Factors: Tragic Incident in New Delhi

❖ **Basements and Limited Access:** Basements in buildings often have restricted access and ventilation. Getting in and out during floods can be challenging, and being trapped becomes a real danger. Special pumping arrangements are necessary to mitigate flooding.

❖ **Mixed-Use Buildings:** As India urbanised and land values soar, buildings are repurposed beyond their original design. Basements, once meant for storage or parking, now serve as income generators. However, this dual use blurs the line between habitation and utility.

❖ **Lack of Clear Regulations:** Building bylaws vary across cities. In Delhi, for instance, basements are officially considered storage areas, but mixed-use buildings may use them differently. The Delhi Master

Plan 2021 mandates clearance from fire authorities for basement use in coaching centres, but compliance remains uncertain.

❖ **Renewal of Permits and Bribe Culture:** Questions arise about permit renewals after inspections. Unfortunately, users often avoid notifying authorities due to bureaucratic hurdles and bribe demands.

Addressing the Issue: What Can Be Done?

❖ **Integrated Urban Planning:** Cities must adopt holistic approaches that consider flood risk reduction. This involves zoning regulations, land-use planning, and infrastructure development that prioritise flood resilience.

❖ **Green Infrastructure:** Implementing green spaces, permeable pavements, and rooftop gardens can absorb excess rainwater and reduce surface runoff. These nature-based solutions enhance urban resilience.

❖ **Improved Drainage Systems:** Upgrading stormwater drainage networks is crucial. Regular maintenance, desilting, and modernising drainage infrastructure can prevent waterlogging.

❖ **Early Warning Systems:** Timely alerts can save lives and minimise damage. Developing robust early warning systems that consider local conditions is essential.

❖ **Community Engagement:** Involving local communities in flood risk management fosters awareness, preparedness, and resilience. Community-based initiatives can be effective.

Flood-Resilient Buildings

❖ **Preventing Water Entry:** Buildings should be designed to prevent water from entering up to a certain level (typically one to 1.5 metres above road level). Non-porous compound walls, flood-barrier gates, and non-return valves on plumbing lines can help achieve this.

❖ **Stormwater Drain Management:** Properly maintained stormwater drain networks are crucial. Urban planners must model historic and extreme rainfall events, considering climate change impacts, and formulate effective mitigation measures.

Policy and Preparedness

❖ India urgently needs robust flood management policies that aligns with the National Disaster Management Authority (NDMA) guidelines on Urban Flooding 2010.

❖ Policymakers should prioritise flood risk reduction, invest in resilient infrastructure, and promote sustainable urbanisation and pay concerted attention to urban flooding, implementing guidelines effectively.

Conclusion and Way Forward

❖ Unchecked urban expansion, inadequate regulations, and poor civic infrastructure contribute to chronic urban flooding. As cities grow, we must prioritise flood-resilient designs, enforce regulations, and foster a culture of safety. Only then can we prevent more tragedies like the one in New Delhi.

❖ Addressing urban flooding requires a multi-pronged approach involving government agencies, urban planners, and citizens. By integrating flood risk reduction into urban development, we can build more resilient cities and protect lives and livelihoods.

WAYANAD LANDSLIDES: A CLOSER LOOK

Context: Recently, Wayanad of Kerala faced a devastating landslide that claimed over 250 lives. Factors such as Kerala's fragile ecosystem, extreme rainfall, and increasing population contributed to this disaster. The loss of lives and livelihoods underscores the urgency of understanding and mitigating landslide risks.

About Landslides

❖ These are defined as the movement of a mass of rock, debris, or earth down a slope. These are a geological phenomenon that involves the sudden and rapid movement of a mass of rock, soil, or debris down a slope under the influence of gravity.

- ❖ They are a type of mass wasting, which denotes any downward movement of soil and rock, generally occurring in clay-rich soil.
- ❖ In India the entire Himalayan tract, hills/mountains in sub-Himalayan terrains of North-east India, Western Ghats, the Nilgiris in Tamil Nadu and Konkan areas are landslide-prone.

Causes of Landslides

- ❖ **Natural Causes**
    - ✓ **Heavy Rainfall:** Heavy rainfall is one of the most common triggers of landslides. It increases pore water pressure as well as the weight of soil by making it saturated.
    - ✓ **Erosion:** Clay and vegetation present within the soil or rock act as cohesive elements and help bind particles together. By removing these cohesive elements, erosion makes an area more prone to landslides.
    - ✓ **Earthquakes:** Intense ground shaking due to earthquakes causes instability in rocks and soils, thus triggering landslides.
    - ✓ **Volcanic Eruptions:** Ash and debris deposited by volcanic eruptions overload slopes while the accompanied seismic activity causes instability.
- ❖ **Anthropogenic Causes**
    - ✓ **Deforestation:** By holding soils as well as obstructing the flow of falling debris, vegetation cover plays an important role in preventing landslides in any area. Deforestation takes away this preventive cover and increases vulnerability to landslides.
    - ✓ **Encroachment in Vulnerable Terrains:** Of late, humans have been encroaching in landslide-prone areas such as hilly terrains. This has led to increased construction activities in these areas and increased chances of landslides.
    - ✓ **Uncontrolled Excavation:** Unauthorised or poorly planned excavation activities, such as mining, quarrying, etc destabilise slopes and increase the chances of landslides.
    - ✓ **Climate Change:** Climate change caused by various anthropogenic activities has led to abrupt alterations in precipitation patterns and increased frequency of extreme weather events.

Types (On the Basis of Movement)

- ❖ **Falls:** They refer to the type of landslide that involves the collapse of material from a cliff or steep slope, which then falls down the slope and collects near the base.
- ❖ **Topples:** Under this type of landslide, the falling mass undergoes forward rotation and movement around an axis or point at or near the base.
- ❖ **Slides:** Under this type of landslide, there is a distinct zone of weakness that separates the moving material from a more stable underlying material.

Impacts of Landslides in India

- ❖ **Loss of Lives and Property:** Landslides claim lives, destroy homes, and disrupt communities. Vulnerable populations often suffer the most.
- ❖ **Infrastructure Damage:** Roads, bridges, and other infrastructure can be severely affected, hindering connectivity and emergency response.
- ❖ **Environmental Degradation:** Landslides alter landscapes, erode soil, and impact biodiversity. They also contribute to sedimentation in rivers and reservoirs.
- ❖ **Economic Costs: Landslides** result in direct economic losses due to damage and indirect costs related to recovery efforts.

Landslide Prone Areas in India

- ❖ ISRO's National Remote Sensing Centre created a database of landslide-prone regions of India based on events during 1998 – 2022, and released the Landslide Atlas of India.

- ❖ In addition to aerial images, high-resolution satellite images captured using ResourceSat-1 and 2, etc., were used to study the landslides.
- ❖ As per this atlas, some of the prominent statistics regarding landslides in India are as follows:
  - ✓ India is among the top five landslide-prone countries in the world.
  - ✓ Excluding snow-covered areas, around 12.6% of India's geographical land area is prone to landslides.
- ❖ **A rough break-up of reported landslides in India is as follows:**
  - ✓ About 66.5% from the North-Western Himalayas;
  - ✓ About 18.8% from the North-Eastern Himalayas
  - ✓ About 14.7% from the Western Ghats.
- ❖ **As per the Landslide Atlas of India, major landslide prone areas in India are as follows:**
  - ✓ The Northeastern Region (comprises about 50% of the total landslide prone areas in India)
  - ✓ Areas of Uttarakhand, Himachal Pradesh, and Jammu & Kashmir lying along the Himalayas.
  - ✓ Areas of Maharashtra, Goa, Karnataka, Kerala, and Tamil Nadu lying along the Western Ghats.
  - ✓ The Araku region in Andhra Pradesh along the Eastern Ghats.

Landslide Vulnerability in India

- ❖ According to the Geological Survey of India (GSI) about 0.42 million square km of India's landmass, or about 13% of its area, spread over 15 states and four Union Territories, is prone to landslides.
- ❖ About 0.18 million square km, or 42% of this vulnerable area is in the Northeastern region, where the terrain is mostly hilly.
- ❖ This area is also prone to earthquakes, which too, are a major trigger for landslides.

Vulnerable Terrain

- ❖ Himalayas and Western Ghats: These majestic mountain ranges are among the most vulnerable areas prone to landslides in India. While the Himalayas are well-known for their seismic activity and associated landslides, the Western Ghats—stretching along the western coast of India—are equally susceptible.
  - ✓ Interestingly, outside of the Himalayas, Kerala stands out as the most vulnerable state. Its unique topography, characterised by steep slopes and abundant rainfall, contributes to this vulnerability.

Kerala's Landscape

- ❖ Around 50% of Kerala's terrain features slopes exceeding 20 degrees, making it prone to soil erosion and landslides. The loose topsoil overlaying rocks in these areas exacerbates the risk.
- ❖ Wayanad, nestled in the Western Ghats, exemplifies this vulnerability. Its lush green hills and dense forests create an idyllic landscape but also set the stage for natural disasters.

Factors Behind Landslides

- ❖ Conditioning Factors (related to the local environment and terrain)
  1. **Soil Topography:** The type of soil, its stability, and how it interacts with underlying rock layers play a crucial role.
  2. **Rocks and Geomorphology:** The composition and structure of rocks influence slope stability.
  3. **Slope Angle:** Steep slopes are more prone to landslides.
  4. **Vegetation Cover:** Dense vegetation can stabilise slopes, while deforestation increases the risk.

Triggering Factors (These factors initiate landslides)

1. **Heavy Rainfall:** Excessive rain saturates the soil, reducing its cohesion and triggering slides.
2. **Earthquakes:** Seismic activity can destabilise slopes.
3. **Human Activities**: Construction, mining, and deforestation disturb the natural balance, making slopes more susceptible.

Role of Climate Change

❖ **Intensifying Climate Change:** Landslides are increasing due to climate change. Extreme weather events, including heavy rainfall, are becoming more frequent.
❖ Rising temperatures can alter soil properties and vegetation dynamics, affecting slope stability.

Mitigation Measures

❖ **Early Warning Systems**: Implementing real-time monitoring and alert systems to notify communities in landslide-prone areas.
   ✓ The 'Global Status of Multi-Hazard Early Warning Systems 2023' report analyses the latest data one year into the Early Warnings for All Initiative (EW4All) that was formally launched at the COP27 meeting in Sharm El-Sheikh.
   ✓ It reveals that 101 countries now have multi-hazard early warning systems, which is based on more complete data from the Sendai Framework Monitor.
❖ **Land Use Planning:** Proper zoning and regulations to prevent construction in high-risk zones.
❖ **Vegetation Restoration:** Reforestation and afforestation help stabilise slopes.
❖ **Slope Stabilization Techniques:** These include retaining walls, terracing, and bioengineering methods.
❖ **Education and Awareness**: Educating communities about landslide risks and safety measures.

Measures Taken in India

❖ The Disaster Management Act, of 2005 provides a comprehensive legal and institutional framework for the management of various disasters including landslides.
❖ The National Landslide Risk Management Strategy (2019) covers all aspects of landslide disaster risk reduction and management, such as hazard mapping, monitoring, and early warning systems.
❖ The National Disaster Management Authority (NDMA) has issued Guidelines on Landslide Hazard Management (2009) that outline the steps that should be taken to reduce the risk of landslides.
❖ The National Institute of Disaster Management (NIDM) has been providing capacity building and other support to various national and state-level disaster management authorities.
❖ Efforts have been made towards better prediction of weather. E.g. Ensemble Prediction System. This will help predict disasters like landslides.

Suggested Measures

❖ Gadgil Committee Recommendation
   ✓ **Ecologically Sensitive Zones:** The report recommended classifying 64% of the Western Ghats into Ecologically Sensitive Zones (EEZs) called ESZ 1, ESZ 2 and ESZ 3, based on Ecologically Sensitive Area (ESA).
   ✓ **Western Ghats Ecology Authority:** Under the Environment (Protection) Act, 1986, a professional body to manage the ecology of the region and to ensure its sustainable development was recommended by the committee.
   ✓ **Ban on Growing Single Commercial Crops:** Crops like tea, coffee, cardamom, rubber, banana and pineapple, which have led to "fragmentation of forest, soil erosion, degradation of river ecosystems and toxic contamination of the environment" should be curtailed.

✓ **Community participation:** The panel had urged the Ministry of Environment and Forests to take critical steps to involve citizens, including proactive and sympathetic implementation of the provisions of the Community Forest Resources of the Forest Rights Act.

❖ On the other hand, there is a need to promote terrace farming which can help reduce landslide risks; afforestation and construction of bunds to reduce the flow of falling materials; retaining walls can be built on mountain slopes to stop the falling materials coming down.

❖ As suggested by the 10th FYP, mitigation measures should be built into the development process itself.

❖ Traditional knowledge of the local community should be used to tackle such kinds of disasters. Education and training can help ensure the preparedness of the disaster management authorities as well as the local community.

Conclusion

❖ While landslides pose a significant challenge, proactive measures can reduce their impact. As we continue to grapple with climate change and environmental degradation, understanding and addressing landslide risks remain critical.

❖ As we grapple with these natural phenomena, it's essential to prioritise research, early warning systems, and sustainable land-use practices. By doing so, we can reduce the impact of landslides and protect vulnerable communities.

DISASTER MANAGEMENT (AMENDMENT) BILL, 2024

Context: The Minister of State for Home Affairs introduced the Disaster Management (Amendment) Bill, 2024 in the Lok Sabha.

About

❖ The bill seeks to amend the Disaster Management Act, 2005.

❖ It aims to strengthen the functioning of the national and state disaster management authorities, besides bringing in more clarity and convergence among stakeholders working in the field of disaster management.

What is a Disaster?

"disaster" means a catastrophe, mishap, calamity or grave occurrence in any area, arising from natural or man made causes, or by accident or negligence which results in substantial loss of life or human suffering or damage to, and destruction of, property, or damage to, or degradation of, environment, and is of such a nature or magnitude as to be beyond the coping capacity of the community of the affected area.

Disaster Management

Disaster management means a continuous and integrated process of planning, organizing, coordinating and implementing measures which are necessary or expedient for;

1. prevention of danger or threat of any disaster;

2. mitigation or reduction of risk of any disaster or its severity or consequences;

3. capacity-building;

4. preparedness to deal with any disaster;

5. prompt response to any threatening disaster situation or disaster;

6. assessing the severity or magnitude of effects of any disaster.

Key Features of the Bill

❖ The Bill seeks to create a "disaster database at national and State level," and makes provision for the constitution of "Urban Disaster Management Authority" for State capitals and large cities having municipal corporations, except the union territories of Delhi and Chandigarh.

❖ The Bill empowers the National Disaster Management Authority (NDMA) and the State Disaster Management Authorities (SDMA) to prepare the disaster plan at national level and State level respectively.

❖ The Bill empowers the NDMA to take stock of the entire range of disaster risks in the country periodically, including emerging disaster risks.

  ✓ It includes "risks of those disasters that may not have taken place, but may occur in future due to extreme climate events and other factors."

❖ The Bill further aims to provide statutory status to certain pre-Act organizations like the National Crisis Management Committee and the High Level Committee.

Concluding Remarks

❖ There was a need to amend the Disaster Management Act, 2005 to mainstream "Disaster Management in the development plans, aligning with the recommendations of the Fifteenth Finance Commission.

❖ The Bill is being opposed, as it creates several authorities which will give rise to confusion.

❖ Also it grants excessive rulemaking power to the Central government through delegated legislation to make rules on specific matters, which could potentially overlap with the legislative powers reserved for the States.

Disaster Management Act, 2005

It is a national law that empowers the Central government to declare the entire country or part of it as affected by a disaster and to make plans for mitigation to reduce "risks, impacts and affects" of the disaster.

Four important entities have been placed at the national level;

1. **National Disaster Management Authority (NDMA):** It is tasked with laying down disaster management policies and ensuring a timely and effective response mechanism.
2. **National Executive Committee (NEC):** It is composed of secretary level officers of the Government of India assigned to assist the NDMA.
3. **National Institute of Disaster Management (NIDM):** It is an institute for training and capacity development programs for managing natural disasters.
4. **National Disaster Response Force (NDRF):** It refers to trained professional units that are called upon for specialized response to disasters.

INCREASE IN GLOBAL FLOODING INCIDENCE

Context: A new study has predicted that global flooding incidence could increase by 49 per cent between 2020 and 2100 if the world continues to follow the ominous path of emitting greenhouse gases en route development.

About

❖ Researchers created a high-resolution Global Flood Map (GFM) using updated techniques to better simulate flood behaviors and adjust probabilities based on factors like rainfall, river discharge, and sea level rise.

Key findings of study

❖ **Geographical Variations:** Flood risk will vary significantly; some areas may experience a decrease in risk, while others may face increases far exceeding the global average.

❖ **Region:** The greatest increases in flooding are expected around coastlines in tropical Africa and Asia, and in arid North Africa.

- ✓ The North Atlantic and Indian Ocean coasts, southeastern Asia, and Pacific Islands will also be notably affected.
- ❖ **Risk Assessment for 2050:** Flood risk is projected to be 7% under low emissions and 15% under high emissions.
- ❖ **Coastal Flood Hazard:** Coastal flooding risk is expected to almost double (99% increase) by 2100, even under a low emissions scenario, due to rising mean ocean temperatures and expanding sea levels.
- ❖ **River-Triggered Flooding:** Increased risk of river-triggered flooding is projected for sub-Saharan Africa, parts of Asia, and South America.
- ❖ **Rainfall-Induced Flooding:** Flooding due to rainfall is likely to increase by 6% under low emissions and 44% under high emissions scenarios by 2100.

Causes of Global Flooding

- ❖ **Climate Change:** One of the primary drivers of increased flooding is climate change.
  - ✓ Rising global temperatures lead to more intense and frequent precipitation events. Warmer air holds more moisture, which can result in heavier rainfall..
- ❖ **Urbanization:** Rapid urban development often leads to increased impervious surfaces, such as roads and buildings, which reduce the land's ability to absorb rainwater.
  - ✓ This can overwhelm drainage systems and result in localized flooding.
- ❖ **Deforestation:** The destruction of forests for agriculture and development reduces the land's ability to absorb water. Deforestation increases runoff and can lead to more severe and frequent flooding.
- ❖ **Infrastructure Failures:** Aging or inadequate infrastructure, such as levees, dams, and stormwater management systems, can fail under extreme weather conditions.

Impacts of Global Flooding

- ❖ **Displacement:** Communities affected by severe flooding often face displacement and loss of homes.
- ❖ **Health:** Flooding poses significant health risks, including waterborne diseases, injuries, and fatalities.
  - ✓ Displaced populations often face challenges accessing medical care and clean water, exacerbating health issues.
- ❖ **Economic Losses:** Floods can cause extensive damage to property, infrastructure, and agriculture. The economic cost includes repair and rebuilding expenses, loss of business, and disruption of economic activities.
- ❖ **Environmental Damage:** Floods can have detrimental effects on ecosystems, including soil erosion, habitat destruction, and pollution of waterways.
  - ✓ The introduction of pollutants from industrial sites and sewage can degrade water quality and harm wildlife.

Mitigation and Adaptation Strategies

- ❖ **Improved Infrastructure**: Investing in resilient infrastructure is crucial for flood management.
  - ✓ This includes upgrading drainage systems, building flood barriers, and maintaining and improving existing flood defenses.
- ❖ **Sustainable Urban Planning:** Adopting sustainable urban planning practices can mitigate flooding risks.
  - ✓ This involves integrating green spaces, improving land use practices, and ensuring that development does not exacerbate flood risks.
- ❖ **Early Warning Systems:** Advancing early warning systems and emergency response mechanisms can help communities prepare for and respond to flooding more effectively.

❖ **Restoration of Natural Ecosystems:** Restoring wetlands, forests, and other natural landscapes can enhance water absorption and reduce flood risks.

❖ **Climate Change Mitigation:** Addressing the root cause of increased flooding requires global efforts to combat climate change. Reducing greenhouse gas emissions, transitioning to renewable energy sources, and adopting climate-resilient practices are essential steps.

GENERAL STUDIES 2.

POLITY, CONSTITUTION

SC Launches Special Lok Adalat Drive

Context: The Supreme Court commenced special Lok Adalat drive to amicably settle long-pending disputes as a part of its 75th anniversary celebrations.

❖ Cases including matrimonial disputes, property disputes, motor accident claims, land acquisition, compensation, service and labour, pending before the apex court will be listed before the Lok Adalats for speedy disposal.

What are Lok Adalats?

❖ Lok Adalat is one of the alternative dispute redressal mechanisms.
❖ It is a forum where disputes/cases pending in the court of law or at pre-litigation stage are settled/ compromised amicably.
❖ Article 39 A: With 42nd Amendment Act of Constitution of 1976, Article 39-A, has been inserted which requires the State to secure that the operation of the legal system:
  ✓ Promotes justice, on a basis of equal opportunity,
  ✓ Provide free legal aid, by suitable legislation or schemes or in any other way,
  ✓ Ensure that opportunities for securing justice are not denied to any citizen by reason of economic or other disabilities.
❖ **Legal status:** Lok Adalats have been given statutory status under the Legal Services Authorities Act, 1987.
❖ **Decision of the Lok Adalat:** Under the said Act, the award (decision) made by the Lok Adalats is deemed to be a decree of a civil court and is final and binding on all parties and no appeal against such an award lies before any court of law.
  ✓ If the parties are not satisfied with the award of the Lok Adalat though there is no provision for an appeal against such an award, but they are free to initiate litigation by approaching the court of appropriate jurisdiction by filing a case by following the required procedure, in exercise of their right to litigate.
❖ **Court fee:** There is no court fee payable when a matter is filed in a Lok Adalat.
  ✓ If a matter pending in the court of law is referred to the Lok Adalat and is settled subsequently, the court fee originally paid in the court on the complaints/petition is also refunded back to the parties.
❖ **Role of members of Lok Adalats:**
  ✓ The persons deciding the cases in the Lok Adalats are called the Members of the Lok Adalats, they have the role of statutory conciliators only and do not have any judicial role.
  ✓ Therefore, they can only persuade the parties to come to a conclusion for settling the dispute outside the court in the Lok Adalat.
  ✓ They shall not pressurise or coerce any of the parties to compromise or settle cases or matters either directly or indirectly.

Difference between Lok Adalat and a regular Court

❖ The difference between Lok Adalat and law court is that the law court sits at its premises where the litigants come with their lawyers and witnesses go to the people to deliver justice at their doorstep.
❖ It is a forum provided by the people themselves or by interested parties including social activities or social activist legal aiders, and public-spirited people belonging to every walk of life.

❖ It is just a firm forum provided by the people themselves for enabling the common people to ventilate their grievances against the state agencies or against other citizens and to seek a just settlement if possible.

What are Alternate Dispute Resolution Mechanisms?

❖ Uses a neutral third party to communicate, discuss the differences and resolve the dispute.
❖ Important Provisions Related To ADR:
  ✓ Section 89 of the Civil Procedure Code, 1908
  ✓ Acts dealing with ADR:
    ➢ Legal Services Authority Act, 1987 (established Lok Adalat System)
    ➢ Arbitration and Conciliation Act, 1996
❖ **Types:** Arbitration, Conciliation, Mediation, Negotiation, Judicial Settlements

SUB CATEGORISATION IN SCHEDULED CASTE RESERVATION

Context

❖ Recently, the Supreme Court of India allowed the sub-categorisation of scheduled castes in reservations, allowing wider protection for underrepresented groups in a 6:1 landmark verdict.

Background

❖ In 2004, the Supreme Court held that sub-classification among Scheduled Castes for the purpose of reservation would violate the right to equality.
❖ At that time, the court emphasised that the SC list must be treated as a single, homogenous group. However, fast forward to 2024, and we find ourselves re-examining this issue.
❖ In the last two decades, States like Punjab, Bihar, and Tamil Nadu have tried to bring in reservation laws at the State level in a bid to sub-categorise Scheduled Castes.

Roots of the Case

❖ The case has its origins in 1975 when the Punjab government issued a notification dividing its 25% SC reservation into two categories.
❖ The first category reserved seats solely for the Balmiki and Mazhabi Sikh communities, which were economically and educationally backward.
❖ The second category included the rest of the SC communities.
❖ Legal challenges arose when a similar law introduced by Andhra Pradesh in 2000 was struck down by a five-judge Constitution Bench in 2004.

Legality of Sub-categorisation

❖ E. V. Chinnaiah v State of Andhra Pradesh (2004): The Supreme Court through its 5-Judge Bench held that once a community is included in the Presidential List for Scheduled Castes under Article 341 of the Constitution, they become part of a single larger class of people, casting a wide net for the purposes of reservation.
❖ It held that the State did not have the legislative power to create sub-classifications within this single class and that such an action would violate the Right to Equality.
❖ However, all plans are held up in courts as the Supreme Court forms its larger Constitution Bench (in Davinder Singh Case) to decide the matter.

Committees for Sub-categorisation

❖ **Committee of Secretaries:** It is a five members committee comprising the Secretaries of the Home Ministry, Law Ministry, Tribal Affairs Ministry, and Social Justice Ministry and it is chaired by the Cabinet Secretary.
  1. Mandate: To look at strategies like special initiatives, focusing existing schemes towards them, etc.
  2. The Committee needs not to deviate into policy matters like reservation or break-up of SC quota for employment and education.
  3. There is no deadline given to present its findings. However, it has been asked to do so at the earliest.

Previous Commissions

❖ Justice P. Ramachandra Raju Commission (1996)
❖ National Commission (2007)

Sub-Categorisation within Scheduled Castes

❖ The Supreme Court addressed whether sub-classification of Scheduled Castes and Scheduled Tribes is permissible for the purpose of reservation.
❖ This ruling has crucial consequences for states that aim to provide broader protection to certain castes that are significantly underrepresented compared to the so-called dominant scheduled castes.

2004 Judgment Revisited

❖ The bench is revisiting its 2004 judgement in the case of EV Chinnaiah vs. State of Andhra Pradesh.
❖ In that judgement, the court had held that Scheduled Castes formed a homogenous group, and therefore, no sub-division among them was permissible.
❖ Now, the court is reconsidering whether this ruling needs to be modified.

Significance of Recent Judgements

❖ Graded Inequalities: The principal argument for sub-categorisation of SCs has been the graded inequalities among SC communities.
  ✓ The thrust of it has been that even among the marginalised, there are communities that have lesser access to basic facilities.
❖ **Unequal Representation:** Some communities are more backward and have less representation than others.
  ✓ For instance, the Madiga community has claimed that the benefits, including that of reservation, meant for the SC category had been cornered by the Mala community, with the Madigas being left out.
❖ **Legal Standpoint:** A five-judge Bench headed by Justice Arun Mishra has affirmed the competence of the States to give preferential treatment to the weakest among the Scheduled Castes without depriving other castes of any benefit.
  ✓ The Court has noted that the Scheduled Castes list contains many castes and cannot be treated as a homogeneous group.
❖ **Equitable Distribution of Benefits:** The Union government has formed a committee of Secretaries to evaluate and work out a method for the equitable distribution of benefits, schemes, and initiatives to the most backward communities amongst the over 1,200 Scheduled Castes across the country.
❖ **Recognizing Diversity:** The court acknowledged that 'historical and empirical evidence indicates that Scheduled castes are not a homogenous class'
  ✓ This recognition of diversity within the SC community is a departure from the earlier stance.

Possible Challenges of Sub Categorisation within Scheduled Castes

❖ These are primarily based on the legal and practical challenges associated with it.
❖ Legal Challenges: The Supreme Court held that the State did not have the power to unilaterally sub-categorise communities in the list of SCs or Scheduled Tribes (STs).
   ✓ The Constitution has provided that these lists can only be made by Parliament and notified by the President.
❖ **Data of socio-economic status:** The population data related to SC, ST, and OBC categories are not updated since the 2011 census.
   ✓ It hampers the objective and scientific basis for sub-categorisation.
❖ **Untouchability:** The social and educational backwardness cannot be applied to Scheduled Castes and Scheduled Tribes. The special treatment is given to the SCs due to untouchability with which they have suffered since ages.

Scheduled Castes in India

❖ As per the 2011 Census, the total population of SCs in India is 16.6% (16.2% in 2001 Census) of the total population of India.
❖ Article 341 of Constitution of India defines Scheduled Caste with respect to any State or Union Territory.
❖ **Constitutional Provisions**
❖ **Article 14:** Guarantees equality before law.
❖ **Article 15 (4):** The state is empowered to make any special provision for the advancement of any socially and educationally backward classes of citizens or for the scheduled castes.
❖ Article 16(4), 16 (4A) and 16 (4B): Provide for reservation in posts and services.
❖ **Article 17:** Untouchability stands abolished and its practice in any form is forbidden.
❖ **Article 23:** It emphasises the importance of protecting individual freedom and dignity.
❖ **Article 24:** It prohibits the employment of children below the age of 14 years in any factory, mine, or hazardous occupation.
❖ **Article 46:** Promotion of educational and economic interests of Scheduled Castes, Scheduled Tribes and other weaker sections.
❖ **Article 330:** Reservation of seats for Scheduled Castes and Scheduled Tribes in the House of the People.
❖ **Article 335:** It permits laws that reduce the requirements or relax qualifications for members of SC/ST communities in appointments to public services and posts.
❖ **Other Statutory Provisions**
❖ **RFCTLARR Act, 2013:** Special provisions have been made for Scheduled Castes and Scheduled Tribes under Sections 41 and 42 of the RFCTLARR Act, 2013 which protect their interests.
❖ **Scheduled Castes and Scheduled Tribes (Prevention of Atrocities) Act, 1898:** This legislation was designed to provide a measure of protection to Scheduled Castes and Scheduled Tribes and to enforce their rights.

Conclusion

❖ The recent verdict allows state governments to sub-classify SCs for granting reservation benefits in admissions and public jobs. It overturns the earlier ruling that restricted such sub-categorization.
❖ It recognises the need to address the varying levels of disadvantage within the SC community and provides a more nuanced approach to reservation policies. It's a step toward ensuring equitable opportunities for all.

SUB CLASSIFICATION OF SCs AND STs FOR QUOTA

Context: In a significant ruling, the Supreme Court of India has upheld the right of states to sub-classify SCs and STs for the purpose of providing reservation benefits. It recognises that these communities are not monolithic; rather, they exhibit varying degrees of social backwardness.

Data and Fact Related To SCs and STs

- ❖ Article 341 of the Constitution empowers the President to designate certain 'castes, races, or tribes' as SCs based on historical injustice related to untouchability.
- ❖ According to Census 2011, Schedule Castes (SCs) approximately 16.6%, and Schedule Tribes (STs) approximately 8.6% of India's population.
- ❖ SC groups collectively receive 15% reservation in education and public employment.
  1. Over time, some SC groups have been underrepresented compared to others.
- ❖ States have attempted to extend additional protection to these marginalised groups, but such efforts faced judicial scrutiny.

Related Constitutional Provisions

- ❖ **Article 14**: Guarantees equality before law.
- ❖ **Article 15 (4):** The state is empowered to make any special provision for the advancement of any socially and educationally backward classes of citizens or for the scheduled castes.
- ❖ **Article 16(4), 16 (4A) and 16 (4B):** Provide for reservation in posts and services.

Background: Roots of the Case (Chronology of the Event)

- ❖ The case has its origins in 1975 when the Punjab government issued a notification dividing its 25% SC reservation into two categories.
- ❖ The first category reserved seats solely for the Balmiki and Mazhabi Sikh communities, which were economically and educationally backward.
- ❖ The second category included the rest of the SC communities.
- ❖ Legal challenges arose when a similar law introduced by Andhra Pradesh in 2000 was struck down by a five-judge Constitution Bench in 2004.

2004 Decision and Its Reversal

- ❖ In 2004, the Supreme Court held in the E V Chinnaiah v State of Andhra Pradesh case that the SC/ST list is a 'homogenous group' and cannot be further divided.
- ❖ The court ruled that any attempt to create differentiation within the SC list would violate the Constitution's provisions.
- ❖ Consequently, sub-classifying SCs was considered impermissible.

Committees for Sub-categorisation

- ❖ **Committee of Secretaries:** It is a five members committee comprising the Secretaries of the Home Ministry, Law Ministry, Tribal Affairs Ministry, and Social Justice Ministry and it is chaired by the Cabinet Secretary.
  - ✓ **Mandate:** To look at strategies like special initiatives, focusing existing schemes towards them, etc.

- The Committee needs not to deviate into policy matters like reservation or break-up of SC quota for employment and education.
- There is no deadline given to present its findings. However, it has been asked to do so at the earliest.

Recent Verdict

❖ In August 2024, a seven-judge Bench, led by Chief Justice of India, overturned the 2004 decision.
❖ The new ruling permits states to create sub-classifications within the SC and ST categories.
❖ These sub-classifications aim to provide wider protections, particularly through fixed sub-quotas, to the most backward communities within SCs and STs.
❖ This decision recognises that not all SCs and STs face identical levels of disadvantage.
❖ Justice B.R. Gavai's opinion stands out: he advocates for introducing the 'Creamy Layer' exception for SCs and STs, similar to what exists for Other Backward Classes (OBCs).
❖ The 'Creamy Layer' concept sets an income ceiling for reservation eligibility, ensuring that benefits reach those who genuinely need them.

Why Sub-Classification Matters?

❖ **Diverse Social Realities:** The SCs and STs encompass a wide range of communities with distinct histories, cultures, and socio-economic conditions. Treating them as a homogenous group overlooks these nuances.
❖ **Targeted Benefits:** Sub-classification allows states to tailor reservation policies to address specific degrees of disadvantage. By identifying the most marginalised sub-groups, the benefits can be more effectively targeted.

Significance of Recent Judgements

❖ **Graded Inequalities:** The principal argument for sub-categorisation of SCs has been the graded inequalities among SC communities.
   ✓ The thrust of it has been that even among the marginalised, there are communities that have lesser access to basic facilities.
❖ **Unequal Representation:** Some communities are more backward and have less representation than others.
   ✓ For instance, the Madiga community has claimed that the benefits, including that of reservation, meant for the SC category had been cornered by the Mala community, with the Madigas being left out.
❖ **Legal Standpoint:** A five-judge Bench headed by Justice Arun Mishra has affirmed the competence of the States to give preferential treatment to the weakest among the Scheduled Castes without depriving other castes of any benefit.
   ✓ The Court has noted that the Scheduled Castes list contains many castes and cannot be treated as a homogeneous group.
❖ **Equitable Distribution of Benefits: The** Union government has formed a committee of Secretaries to evaluate and work out a method for the equitable distribution of benefits, schemes, and initiatives to the most backward communities amongst the over 1,200 Scheduled Castes across the country.
❖ **Recognizing Diversity:** The court acknowledged that 'historical and empirical evidence indicates that Scheduled castes are not a homogenous class'
   ✓ This recognition of diversity within the SC community is a departure from the earlier stance.

States and Communities Affected

- ❖ **Maharashtra:**
- ❖ **Mahar Community:** Politically active and relatively literate, the Mahar community has made significant strides. Notably, Dr. B. R. Ambedkar, a Mahar himself, played a pivotal role in drafting India's Constitution.
- ❖ **Matang Community:** The second-largest SC community in Maharashtra, the Matangs are predominantly Hindu.
- ❖ **Tribes:** Gond and Bhil are the largest tribes in the state.
- ❖ **Rajasthan:**
    - ❖ **Meghwal Community:** The largest SC community in Rajasthan, the Meghwals are spread across the state, particularly in border districts.
    - ❖ **Bairwa and Jatav**: Dominant in eastern Rajasthan.
    - ❖ **Meena Tribe:** Influential in electoral outcomes and well-represented in police and bureaucracy.
    - ❖ **Bhil Tribe:** Some Bhils do not consider themselves Hindu and have rallied behind a new tribal party.
- ❖ **Odisha:**
    - ✓ **Khond Tribe:** Numerically the largest tribal group in Odisha, residing mainly in southern districts.
    - ✓ **Santal Tribe:** Second-largest tribal group, followed by the Gonds.
    - ✓ **SC Communities:** The Pan community is dominant among the SCs in Odisha.
- ❖ Chhattisgarh, Madhya Pradesh, West Bengal, Gujarat, Assam, Tripura, and Uttarakhand etc are the most affected states in India.

Possible Hurdles

- ❖ These are primarily based on the legal and practical challenges associated with it.
- ❖ Legal Challenges: The Supreme Court held that the State did not have the power to unilaterally sub-categorise communities in the list of SCs or Scheduled Tribes (STs).
    - ✓ The Constitution has provided that these lists can only be made by Parliament and notified by the President.
- ❖ **Data of socio-economic status:** The population data related to SC, ST, and OBC categories are not updated since the 2011 census.
    - ✓ It hampers the objective and scientific basis for sub-categorisation.
- ❖ **Untouchability:** The social and educational backwardness cannot be applied to Scheduled Castes and Scheduled Tribes. The special treatment is given to the SCs due to untouchability with which they have suffered since ages.

What Lies Ahead?

- ❖ States now have the authority to identify different degrees of social backwardness within SCs and STs.
    - ✓ By sub-classifying, they can tailor reservation policies to address specific needs.
- ❖ The ruling acknowledges that SCs and STs are not monolithic; their experiences vary significantly.

Conclusion

- ❖ The court's decision opens the door to more nuanced and effective affirmative action. By recognising diversity within SCs and STs, we move closer to a fairer and more equitable society.
- ❖ It opens up new possibilities for affirmative action, allowing states to address the unique challenges faced by different sub-groups within SCs and STs. It also sparks discussions about whether the OBC model's 'creamy layer' could serve as a blueprint for ensuring targeted benefits reach those who need them most

SECULAR CIVIL CODE

Context: In his 11th Independence Day speech, PM Modi called for a Uniform Civil Code (UCC), framing it as a "Secular Civil Code" as distinct from the existing "communal civil code".

What is Uniform Civil Code (UCC)?

❖ A Uniform Civil Code refers to the provision of one law for the entire country, applicable to all religious communities, in their personal matters such as marriage, divorce, inheritance, adoption, etc.
❖ Currently, separate personal laws apply for the members of different major religions.
❖ The Supreme Court in 2019 hailed Goa as a "shining example" of an Indian State which has a functioning UCC.

Constitutional Provisions

❖ Article 44 contained in part IV of the Constitution says that the state "shall endeavor to secure for the citizens a uniform civil code throughout the territory of India".
❖ Part IV of the Constitution outlines the Directive Principles of State Policy, which, while not enforceable or justiciable in a court of law, are fundamental to the country's governance.

UCC in India

❖ **UCC in Goa:** It follows the Portuguese Civil Code of 1867, which means that people of all religions in Goa are subject to the same laws on marriage, divorce, and succession.
   ✓ The Goa Daman and Diu Administration Act of 1962, which was passed after Goa joined the union as a territory in 1961, gave Goa permission to apply the Civil Code.
❖ States like Gujarat, Madhya Pradesh and Assam have expressed their willingness to follow the UCC, none have officially adopted it.

Arguments in favor of UCC

❖ **Uniformity in Governance:** Having a common set of laws would streamline governance and administrative processes, making it easier for the state to administer justice and ensure the rights of its citizens.
❖ **Women's Rights**: Personal laws in different religions may have discriminatory provisions, particularly against women, and a uniform code will provide a more egalitarian legal framework.
❖ **Secularism: A** Uniform Civil Code is seen as a way to reinforce the secular fabric of the country by treating all citizens equally irrespective of their religious affiliations.
❖ **International Image:** Implementing a UCC may enhance India's international image by demonstrating a commitment to principles of equality, secularism, and human rights.
❖ The Supreme Court in various judgments including Mohd. Ahmed Khan vs Shah Bano Begum judgment of 1985, has called for the implementation of the Uniform Civil Code.
❖ **Promote national Spirit:** The implementation of a UCC will promote the integration of India by establishing a shared platform for diverse communities.

Arguments against UCC

❖ **Plurality in existing laws:** Experts argue that if there is plurality in already codified civil and criminal laws, how can the concept of 'one nation, one law' be applied to diverse personal laws of various communities.
❖ **Issues with implementation:** The implementation of the code has been difficult because India is a diverse country with various religious communities following their own personal laws.
   ✓ It has been argued that the marriage and death rituals observed by tribal communities differ from Hindu customs, and there is concern that these practices may also face prohibition.
❖ **Challenge for Law and Order:** It would be a tyranny to the minority and when implemented could bring a lot of unrest in the country.

❖ **Against Constitutional provisions:** UCC is perceived as an infringement upon the constitutional right to freely exercise one's chosen religion found in Article 25 and 26 and the Sixth Schedule of the Constitution

❖ **Fear among minorities:** There is a contention that the Uniform Civil Code may potentially enforce a code that is influenced by Hindu practices in all communities.

❖ The Law Commission of India stated that a UCC "is neither necessary nor desirable at this stage". It recommended that discriminatory practices, prejudices and stereotypes within a particular religion and its personal laws should be studied and amended.

Way Ahead

❖ The authorities should consult with different sections of society before implementing the UCC to foster an environment of inclusivity, transparency, and respect for diverse perspectives throughout the process.

❖ The Law Commission expressed its support for achieving "equality within communities" as opposed to pursuing "equality between" communities.

SECULAR CIVIL CODE IN INDIA

Context: On the occasion of Independence Day, the Prime Minister echoed his bold call for the implementation of a Secular Civil Code (SCC) reigniting a debate that has been lingering for decades.

Understanding the Concept

❖ A Uniform Civil Code (UCC) aims to provide a single set of laws governing personal matters—such as marriage, divorce, inheritance, and property rights—for all citizens, regardless of their religious affiliations.

❖ Currently, India follows different personal laws based on religion: Hindu law, Muslim law (Sharia), Christian law, and others.

❖ The idea behind a UCC is to replace these diverse legal frameworks with a common code applicable to everyone.

❖ The Supreme Court in 2019 hailed Goa as a 'shining example' of an Indian State which has a functioning UCC.

Historical Context

❖ The debate over a UCC dates back to the drafting of the Indian Constitution. Dr. B.R. Ambedkar, the chief architect of the Constitution, advocated for a secular approach to the civil code.

❖ He believed that the UCC should be seen as a secular law—one that treats all citizens equally, irrespective of their faith. Ambedkar argued that other laws, such as criminal procedure codes and property laws, already applied uniformly to all Indians.

Current Scenario

❖ The Prime Minister's call for a secular civil code echoes Ambedkar's vision. He highlighted that the existing civil code is often perceived as communal and discriminatory.

❖ Indeed, the Supreme Court has repeatedly discussed the need for a UCC, emphasising that laws dividing the country along religious lines should be eliminated.

❖ By advocating for a secular approach, the Prime Minister aims to bridge the gap and create a legal framework that unifies rather than divides Indians.

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❖ States like Gujarat, Madhya Pradesh and Assam have expressed their willingness to follow the UCC, none have officially adopted it.

Challenges and Controversies

❖ Implementing a UCC is not without challenges. India's diversity—linguistic, cultural, and religious—poses complexities. Critics argue that imposing a uniform code might infringe upon religious freedom and traditions.

❖ However, proponents emphasise that a UCC would promote gender equality, protect individual rights, and foster national unity.

Arguments Favouring UCC

❖ **Uniformity in Governance:** Having a common set of laws would streamline governance and administrative processes, making it easier for the state to administer justice and ensure the rights of its citizens.

❖ **Women's Rights:** Personal laws in different religions may have discriminatory provisions, particularly against women, and a uniform code will provide a more egalitarian legal framework.

❖ **Secularism:** A Uniform Civil Code is seen as a way to reinforce the secular fabric of the country by treating all citizens equally irrespective of their religious affiliations.

❖ **International Image:** Implementing a UCC may enhance India's international image by demonstrating a commitment to principles of equality, secularism, and human rights.

❖ The Supreme Court in various judgments including Mohd. Ahmed Khan vs Shah Bano Begum (1985) has called for the implementation of the Uniform Civil Code.

❖ **Promote national Spirit:** The implementation of a UCC will promote the integration of India by establishing a shared platform for diverse communities.

Arguments Opposing UCC

❖ **Plurality in existing laws:** Experts argue that if there is plurality in already codified civil and criminal laws, how can the concept of 'one nation, one law' be applied to diverse personal laws of various communities.

❖ **Issues with implementation:** The implementation of the code has been difficult because India is a diverse country with various religious communities following their own personal laws.
  o It has been argued that the marriage and death rituals observed by tribal communities differ from Hindu customs, and there is concern that these practices may also face prohibition.

❖ **Challenge for Law and Order:** It would be a tyranny to the minority and when implemented could bring a lot of unrest in the country.

❖ **Against Constitutional Provisions:** UCC is perceived as an infringement upon the constitutional right to freely exercise one's chosen religion found in Article 25 and 26 and the Sixth Schedule of the Constitution

❖ **Fear among minorities:** There is a contention that the Uniform Civil Code may potentially enforce a code that is influenced by Hindu practices in all communities.

o   The Law Commission of India stated that a UCC "is neither necessary nor desirable at this stage". It recommended that discriminatory practices, prejudices and stereotypes within a particular religion and its personal laws should be studied and amended.

Conclusion and Way Ahead

❖   The debate around the secular civil code is multifaceted, touching upon constitutional principles, social justice, and cultural sensitivity. As India continues to evolve, finding a balance between unity and diversity remains crucial.

o   Perhaps, in the spirit of Ambedkar's vision, a secular civil code can be a step toward a more harmonious and equitable society.

❖   The authorities should consult with different sections of society before implementing the UCC to foster an environment of inclusivity, transparency, and respect for diverse perspectives throughout the process.

❖   The Law Commission expressed its support for achieving "equality within communities" as opposed to pursuing "equality between" communities.

GOVERNANCE

WOMEN ENTREPRENEURSHIP PROGRAMME

Context: The National Skill Development Corporation (NSDC) launched the Women Entrepreneurship Programme.

About

❖ The initiative aims to empower 25 lakh women across India, providing them with the skills, knowledge, and resources needed to start and grow successful businesses.

❖ Divided into two phases, NSDC, with support from the National Institute for Entrepreneurship and Small Business Development (NIESBUD), will offer free online self-learning entrepreneurship courses through the Skill India Digital Hub (SIDH) as part of the programme.

❖ In the next phase, NSDC extends incubation support to 10,000 shortlisted contestants across 100 business models.

Challenges faced by Women Entrepreneurs in India

❖ **Low risk taking ability:** The women in India mostly lead a protected life, are less educated, less trained and get low financial support. Thus, they are not able to bear the amount of risk that is required for running an enterprise.

❖ **Male-Dominated Society:** Traditional Indian society is male-dominated, where women are often seen as subordinate to men. Women are restricted from pursuing entrepreneurial ventures, limiting their growth and prosperity.

❖ **Conflict with Family commitments:** Running a business often conflicts with family responsibilities, making it challenging for women to balance both.

❖ **Mobility Constraints:** Safety issues and societal expectations restrict their movement for business purposes.

❖ **Access to Technology:** Women face challenges in accessing the latest technology and integrating digital solutions into their business models, putting them at a disadvantage compared to male entrepreneurs.

Government Initiatives

❖ **MUDRA Loans:** It provides credit specifically for women entrepreneurs. It facilitates financial support for women-led businesses and startups.

❖ **Stand-Up India Scheme:** It encourages entrepreneurship among women by providing easy access to financing. It aims to promote self-employment and business ventures led by women.

❖ Trade Related Entrepreneurship Assistance and Development" (TREAD): The scheme envisages economic empowerment of such women through trade related training, information and counseling extension activities related to trades, products, services etc.
  ✓ Under the scheme, there is a provision for the Government of India to grant up to 30% of the loan/ credit maximum up to Rs. 30.00 lakh as appraised by lending institutions/ banks.

SUPREME COURT OF INDIA ON SC/ST ACT, 1989

Context: Recently, the Supreme Court held in a judgement that not all insults and intimidatory comments aimed at a Scheduled Caste or Scheduled Tribe person would be an offence under the Scheduled Castes and Scheduled Tribes (Prevention of Atrocities) Act, 1989 (SC/ST Act).

Background of SC / ST Act

- ❖ The Untouchability (Offences) Act, 1955 was initially passed in Parliament to eradicate inherent discriminatory attitudes against the SCs and STs.
- ❖ It was renamed as the Protection of Civil Rights (PCR) Act in 1976.
- ❖ Later, owing to the ineffectiveness of the above acts, the Scheduled Castes and Scheduled Tribes (Prevention of Atrocities) Act, 1989 came into existence.
- ❖ According to the SC/ST Act, the protection is provided from social disabilities such as denial of access to certain places and to use a customary passage, personal atrocities like forceful drinking or eating of inedible food, sexual exploitation, injury, etc, and atrocities affecting properties, malicious prosecution, political disabilities, and economic exploitation.
- ❖ The SC/ST Act is in place to deliver justice to the marginalised through proactive efforts, giving them a life of dignity, self-esteem, and a life without fear, violence, or suppression from the dominant castes.

Provisions of Criminal Law

- ❖ Atrocities can be committed only by non-SCs and non-STs on members of the SC or ST communities.
- ❖ Crimes among or between SCs and STs do not come under the purview of this Act.
- ❖ Cancellation of arms licences in the areas identified where an atrocity may take or has taken place and grant arms licences to the SCs and STs.

Amendment

- ❖ The Act was amended in 2015 to make it more effective and to provide greater justice and enhanced redressal to injustice suffered by the atrocity victims.
- ❖ It includes new offences, expanded scope of presumptions, institutional strengthening, and establishment of Special Courts and Exclusive Special Courts to exclusively try offences under the SC/ST Act to enable expeditious disposal of cases.

Recent Observation of Supreme Court

- ❖ **Intent Matters:** The court emphasised that the intention behind the insult or intimidation is crucial. Mere knowledge that the victim belongs to an SC/ST community is insufficient to invoke the provisions of the Act.
- ❖ Instead, the insult must be intentionally directed at the victim because of their caste identity.
- ❖ **Caste-Based Humiliation:** To trigger the Act, the 'humiliation' inflicted by the aggressor must be intricately associated with the victim's caste identity.
- ❖ In other words, it's not every intentional insult that results in caste-based humiliation. The court clarified that this applies only in cases where the insult reinforces historically entrenched ideas, such as untouchability or notions of caste superiority.
- ❖ The court recognised that insults or intimidation can occur without reference to caste. If the insult is not specifically tied to the victim's SC/ST status, it does not fall under the purview of the Act.
- ❖ **Anticipatory Bail:** It cannot be denied under Section 18 of the Act unless a prima facie case under the Act is established against the accused. It ensures that individuals are not unfairly deprived of their right to seek anticipatory bail.

10 Years of Pradhan Mantri Jan Dhan Yojana (PMJDY)

Context: The Pradhan Mantri Jan Dhan Yojana (PMJDY), launched in 2014 under the Ministry of Finance has completed a decade of successful implementation.

About

- ❖ PMJDY being the largest financial inclusion initiative to provide support to the marginalised and economically backward sections through its financial inclusion interventions.
- ❖ PMJDY provides one basic bank account for every unbanked adult.

Key Features of the Jan Dhan Yojana

❖ Under the PMJDY, individuals can open a basic savings bank deposit (BSBD) account at any bank branch or through a Business Correspondent ('Bank Mitra').

Key benefits of the scheme include:

❖ No requirement to maintain a minimum balance in PMJDY accounts;

❖ Interest earned on deposits in PMJDY accounts;

❖ Provision of a RuPay Debit card to account holders;

❖ Accident insurance cover of Rs 100,000 (increased to Rs 200,000 for new accounts opened after August 28, 2018) with the RuPay card;

❖ Overdraft facility of up to Rs 10,000 for eligible account holders;

❖ Eligibility for Direct Benefit Transfer (DBT), Pradhan Mantri Jeevan Jyoti Bima Yojana (PMJJBY), Pradhan Mantri Suraksha Bima Yojana (PMSBY), Atal Pension Yojana (APY), and Micro Units Development and Refinance Agency Bank (MUDRA) scheme.

Significance

❖ The PMJDY serves as a platform for hassle-free subsidies/payments made by the government to the intended beneficiary without any middlemen, seamless transactions, and savings accumulation.

❖ They have been crucial in providing life and accident insurance to millions of unorganized sector workers through Jan Suraksha schemes (micro insurance schemes).

Successful Implementation of the Scheme

❖ The success of the initiative is reflected in 53 crore people having been brought into the formal banking system through the opening of Jan Dhan Accounts.

❖ These bank accounts have garnered a deposit balance of Rs. 2.3 lakh crore, and resulted in the issuance of over 36 crore free-of-cost RuPay cards, which also provide for a ₹2 lakh accident insurance cover.

❖ 67% of the accounts have been opened in rural or semi-urban areas, and 55% of accounts have been opened by women.

Conclusion

❖ PMJDY's success highlights its mission-mode approach, regulatory support, public-private partnerships, and the importance of digital public infrastructure like Aadhaar for biometric identification.

❖ Account holders can now show saving patterns, which makes them eligible for loans from banks and financial institutions.

❖ PMJDY being the world's largest financial inclusion scheme, with its transformative power and its digital innovations have revolutionised financial inclusion in India.

INTERNATIONAL

INDIA'S STAND ON IRAN-ISRAEL WAR

Context: India's silence on rising tensions between Iran and Israel over the killing of Hamas leader Ismail Haniyeh reflects its "dilemma" in trying to balance ties with both countries.

About

❖ Palestinian militant group Hamas political leader, Ismail Haniyeh, was killed in an Israeli strike in Iran, where he had been attending the inauguration of the country's new president.

❖ Timeline of the Iran-Israel Conflict

IRAN AND ISRAEL: A LONG HISTORY OF SHADOW WARS

1979: Iran's pro-Israel leader Mohammed Reza Shah swept from power in Islamic Revolution, new regime considers Israel an enemy.

1982: Israel invades Lebanon, Iran's Revolutionary Guards set up Hezbollah.

1983: Hezbollah uses suicide bombings to expel Western, Israeli forces. Israel later withdraws from much of Lebanon.

2002: Israel urges tough action against Tehran after revelation that Iran has secret uranium enrichment programme.

2006: Israel fights Hezbollah in a month-long war in Lebanon, unable to crush them.

2009: Iran Supreme Leader Ayatollah Ali Khamenei calls Israel 'a dangerous and fatal cancer'.

2018: Benjamin Netanyahu hails US President Donald Trump's withdrawal from Iran's nuclear deal.

2020: Israel welcomes US assassination of General Qassem Soleimani.

2022: US President Joe

Biden and Israeli Prime Minister Yair Lapid sign a joint pledge to deny Iran nuclear arms.

2024: Suspected Israeli air strike on Iranian embassy in Damascus kills two IRGC commanders.

(Above) The Iron Dome system in action in central Israel; (and) celebrations in Tehran after Iran's airstrike. *AP, Reuters*

India's Stake in the Region's Stability

❖ Threat to Indian Community: There are about 18,000 Indians in Israel and about 5,000-10,000 Indians in Iran, about 90 lakh people are living and working in the Gulf and West Asia region.
   ✓ Any conflict that expands will end up posing a risk to the Indian community that is based in the region.

❖ **Energy Security:** The West Asia region contributes to India's 80 percent of oil supplies, which a potential conflict will impact.
   ✓ India has been able to minimise the impact of oil prices due to the Russia-Ukraine war by buying Russian oil at discounted prices, but this conflict will have an adverse impact on energy prices.

❖ **Investment and Strategic Importance:** India has invested in a strategic relationship with major Arab countries, Iran, and Israel.
   ✓ India sees the region as its extended neighbourhood, and it has been pushing for the India-Middle-East-Europe Economic corridor, which has strategic as well as economic benefits.

- ✓ Chabahar in Iran is another strategic economic project, which acts as a gateway to Afghanistan and Central Asia — since Pakistan denies land transit to Indian goods.
  - ✓ Any conflict in the region, and the implementation of any US sanctions will also impact India's plans for Chabahar port.
- ❖ In addition, the India-Israel-UAE-US I2U2 initiative and plans to connect Indian cargo routes through the International North South Transport Corridor (INSTC) to Russia could be affected.
- ❖ Defence Relations with Israel: India has a very deep strategic relationship with Israel, especially in the context of defence and security partnership.

India's Neutral Stand

- ❖ **Maintaining a Balanced Stand:** India's stakes in the bilateral relationships with both Israel and Iran are huge, India will expect both the countries to avoid military actions that will trigger a dangerous and wider war in the region.
- ❖ **Based on the Complex Regional Politics:** Inter-state and intra-state conflicts in the Middle East are deep and pervasive, and India will have to forever balance its engagement with key regional actors — Egypt, Iran, Israel, Qatar, Turkey, Saudi Arabia, and the United Arab Emirates — whose orientation and interests are different and often in conflict.
  - ✓ India's call for de-escalation between Israel and Iran is about recognising the complexity of the region's politics.
- ❖ **Non- Ideological Engagement:** The non-ideological engagement with the region is a necessary complement to India's expanding interests in the Middle East.
  - ✓ India's interests in the region are no longer limited to oil imports and labour exports.
  - ✓ The Gulf Arab states — especially Saudi Arabia and the United Arab Emirates — have emerged as major economic and political partners for India.

Way Ahead

- ❖ India has strategic ties with both Iran and Israel — and for decades, it has been able to balance between the two sides. But if the conflict widens, it would be difficult for it to maintain an ambivalent position.
  - ✓ In the context of such deep ties with both Israel and Iran, India has difficulty in choosing sides.
- ❖ India's position that there should be "immediate de-escalation" and "step back from violence" and "return to the path of diplomacy" is, therefore, crucial to its national interest.

SHEIKH HASINA'S EXIT AND INDIA-BANGLADESH TIES

Context: Recent exit of Bangladesh's Prime Minister from power could jeopardise India-Bangladesh relationships and affect growing trade ties, restricting the movement of people and goods, and stalling a potential free trade agreement (FTA) between the two countries.

Background

- ❖ Sheikh Hasina, who has been a key ally to India since coming to power in 2009, has played a crucial role in fostering a healthy relationship between New Delhi and Dhaka.
- ❖ During her tenure, efforts were made to eradicate anti-India terrorist groups that operated from safe havens in Bangladesh.
- ❖ Additionally, economic, social, and cultural ties between the two countries flourished.
- ❖ However, her recent resignation as Bangladesh's Prime Minister introduces uncertainties that could affect bilateral relations in several ways.

India-Bangladesh Ties

❖ Beginning: India's relationship with Bangladesh is anchored in common history, heritage, culture and geographical proximity, the foundation of which was laid in the 1971 Bangladesh Liberation War.

❖ India provided critical military and material support to assist Bangladesh in its fight for independence from Pakistan.
  ✓ It became a primary factor in shaping the newly independent nation's policy, as acknowledged by 'Bangabandhu' Sheikh Mujibur Rahman: 'Friendship with India is a cornerstone of the foreign policy of Bangladesh'.

❖ But There was a rise in anti-India sentiment in the mid-1970s over issues ranging from boundary disputes and insurgency to the sharing of water.

Bilateral Trade

❖ **Significance:** Bangladesh is India's largest trading partner in the subcontinent, while India ranks as Bangladesh's second-largest partner in Asia after China.

❖ **Trade Volume:** In the financial year 2023-24, their total bilateral trade amounted to $13 billion.

Exports and Imports:

❖ Bangladesh is the biggest export destination for India's cotton, accounting for 34.9% of India's total cotton exports (some $2.4 billion in FY24). Other major Indian exports to Bangladesh are petroleum products and cereals.

❖ India's top import from Bangladesh are readymade garments, amounting to $391 million in FY24.

Free Trade Agreement (FTA) Discussions

❖ In October 2023, India and Bangladesh initiated discussions on a FTA during a meeting of the Joint Working Group on Trade in Dhaka. An FTA would reduce or eliminate customs duties, promote further trade, and facilitate investments.
  ✓ A 2012 working paper published by the World Bank estimated that a full FTA for goods would increase Bangladesh's exports to India by 182%, whereas a partial FTA could lead to a 134% increase.
  ✓ However, an FTA accompanied with improved transport infrastructure and better connectivity could see Bangladesh's exports rise to 297%.
  ✓ India, too, would see an increase to its exports by as much as 172% in this scenario.

❖ **Potential Impact:** Sheikh Hasina's departure could stall progress on the FTA, affecting market access and economic ties between the two nations.

Infrastructure and Connectivity

❖ **Growing Ties:** Infrastructure development and connectivity have been crucial aspects of India-Bangladesh relations.

❖ **Lines of Credit:** India extended three lines of credit to Bangladesh since 2016, totaling $8 billion. These funds were earmarked for road, rail, shipping, and port infrastructure development.
  ✓ The Akhaura-Agartala rail link was inaugurated that connects Bangladesh and the northeast through Tripura.
  ✓ It is likely to boost small-scale industries and develop Assam and Tripura.
  ✓ The Maitree Express connecting Kolkata with Dhaka was started in 2008 after a hiatus of over 40 years.
  ✓ Bangladesh is also part of the Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC) which has its headquarters in Dhaka.

❖ **Uncertainty:** With an interim Bangladeshi government in place, the continuity of these infrastructure projects remains uncertain.

❖ **Regional Stability:** Stable infrastructure and connectivity contribute to regional stability and economic growth.

   ✓ A disruption in Indo-Bangladesh ties could thus restrict India's access to the Northeast, which will be connected to mainland India only through the narrow 'Chicken's Neck' — only 22 km at its narrowest — between West Bengal and Assam.

Regional Geopolitics

❖ **Influence from Jamaat-e-Islami and Pakistan:** Sheikh Hasina's departure may lead to increased influence from groups like Jamaat-e-Islami, which historically had ties with Pakistan. This could impact regional dynamics and stability.

Other Ongoing Issues and Concerns

❖ **Teesta dispute:** The issue revolves around the sharing of Teesta's waters, with Bangladesh seeking an equitable distribution.

❖ **Rohingya issue:** The Bangladesh government aims for the peaceful repatriation of Rohingyas to Myanmar, but it's talks with the military junta have been unsuccessful so far.

❖ Cross-border terrorism and infiltration are additional threats to internal security. The rise of majoritarian forces adds another layer to the complex landscape.

❖ **China Factor:** India's concern is the deepening relationship between Bangladesh and China, marked by the substantial Chinese investments in infrastructure in recent years.

Conclusion

❖ Bangladesh's Prime Minister resignation introduces complexities and challenges for India-Bangladesh relations. The movement of people, goods, and the progress of critical agreements like the FTA hang in the balance.

❖ As the situation unfolds, both countries will need to navigate this transition carefully to maintain their positive trajectory of cooperation and friendship.

FTA TALKS WITH BIMSTEC NEEDS REVIVAL

Context: The business summit of the Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC) was organized by the Confederation of Indian Industries (CII) and the Ministry of External Affairs.

Background

❖ BIMSTEC has been negotiating a proposed Free Trade Agreement (FTA) since 2004, with 22 rounds of talks held so far including the last round that was held in 2018.

❖ The Union Minister of Commerce & Industry that BIMSTEC members should re-examine the priorities of member nations so that the delayed Free Trade Agreement can be finalized.

❖ In 2004, Bimstec concluded the Framework Agreement on the Bimstec Free Trade Area.

   ✓ The Framework Agreement encouraged the establishment of effective trade and investment facilitation measures, including simplification of customs procedures and development of mutual recognition arrangements

What is BIMSTEC?

- BIMSTEC is a regional organization that was established in 1997 with the signing of the Bangkok Declaration.
- Permanent Secretariat: Dhaka, Bangladesh
- **Members:** Bangladesh, Bhutan, Sri Lanka, Nepal, Thailand, Myanmar and India.
- **Significance:** The BIMSTEC countries are home to 22 percent of the total world population and have a combined gross domestic product (GDP) of about $3.6 trillion.

India's trade with BIMSTEC

- India's total trade with BIMSTEC countries amounted to $44.32 billion in 2023-24.
- Thailand was India's largest trading partner within the bloc, with exports worth $5.04 billion and imports at $9.91 billion, resulting in a trade gap of $4.87 billion.
- Bangladesh followed, with exports of $11.06 billion and imports of $1.84 billion, creating a trade balance of $9.22 billion in India's favor.

What Is a Free Trade Agreement (FTA)?

- A free trade agreement is a pact between two or more nations to reduce barriers to imports and exports among them.
- Under a free trade policy, goods and services can be bought and sold across international borders with little or no government tariffs, quotas, subsidies, or prohibitions to inhibit their exchange.
- India has signed 13 Regional Trade Agreements (RTAs)/Free Trade Agreements (FTAs) with various countries/regions namely, Japan, South Korea, countries of ASEAN region and countries of South Asian Association for Regional Cooperation (SAARC), Mauritius, United Arab Emirates and Australia.

Benefits of BIMSTEC free trade agreement

- Increased Trade Flows: An FTA would reduce tariffs, non-tariff barriers, and other restrictions on trade, thereby increasing the volume of goods and services exchanged among BIMSTEC countries.
- **Economic Integration:** The FTA could lead to deeper economic integration, fostering closer economic ties and enhancing regional stability.
- **Market Access:** Member states would gain access to each other's markets, which could help smaller countries like Bhutan and Nepal integrate more effectively into the global economy.
- **Attraction of Foreign Direct Investment (FDI):** A more integrated market with reduced trade barriers would be more attractive to foreign investors, potentially increasing FDI flows into the region.

Way Ahead

- The business community of the countries and the governments will have to work together to find new pathways, new ways of engaging, and alternative solutions that are more practical to build up the momentum towards an FTA
- Payments in local currencies within this region along with better integration of custom borders, computerisation of border controls, and faster clearance of documents for imports and exports can help to improve the situation.

EXTERNAL AFFAIRS MINISTERS VISIT TO MALDIVES

Context: External Affairs Minister of India S. Jaishankar has commenced a three-day official visit to the Maldives.

Key highlights of the meeting

- Both the nations signed MoUs on capacity building and inaugurated six High Impact Community Development Projects (HICDPs).

- ❖ India's Line of Credit (LoC)-assisted project of water and sewerage network in 28 islands of Maldives was jointly inaugurated during the meeting of both the nations.
- ❖ MoUs on capacity building of additional 1,000 Maldivian civil servants in India and on the introduction of UPI in Maldives were exchanged.

Significance of Maldives for India

- ❖ **Trade Route:** Situated along crucial maritime trade routes between the Gulf of Aden and the Strait of Malacca, the Maldives acts as a "toll gate" for nearly half of India's external trade and 80% of its energy imports.
- ❖ **Strategic Location:** The Maldives is strategically located in the Indian Ocean, and its stability and security are of interest to India.
- ❖ **Counterbalancing China:** Maldives presents an opportunity for India to counterbalance China's growing influence in the Indian Ocean, fostering regional balance of power.
- ❖ **Economic partnership**: India is one of the biggest investors and tourism markets for the Maldives, with significant trade and infrastructure projects underway.
- ❖ **Defense and Security Cooperation:** Since 1988, defense and security has been a major area of cooperation between India and Maldives.
  - ✓ A comprehensive Action Plan for Defence was also signed in 2016 to consolidate defense partnership.
  - ✓ Estimates suggest that almost 70 percent of Maldives' defense training is done by India — either on the islands or in India's elite military academies.

Significance of India for Maldives

- ❖ **Essential Commodities:** India supplies Maldives with its everyday essentials: rice, spices, fruits, vegetables, poultry, medicines and life-saving drugs.
- ❖ **Education**: Every year, Maldivian students come to Indian higher educational institutions.
- ❖ **Economic dependence:** Of the Rs 50 crore total trade between India and Maldives in 2022, Rs 49 crore was India's exports to Maldives. India emerged as Maldives' second largest trade partner in 2022.
- ❖ **Disaster Relief Assistance:** When a tsunami struck the islands in 2004, India was the first to send in help.
  - ✓ In 2014 Male had a drinking water crisis as the major desalination plant broke down, India overnight airlifted drinking water to the islands.
  - ✓ During the Covid-19 pandemic, India sent essential medicines, masks, gloves, PPE kits and vaccines for the island country.

Challenges in Relations

- ❖ **Domestic turmoil in the Maldives:** Recent political upheavals and changes in government have created uncertainty and complicated long-term cooperation projects.
- ❖ **Chinese Influence:** China's growing economic presence in the Maldives, evidenced by investments in infrastructure projects and debt-trap diplomacy, is perceived as a challenge to India's strategic interests in the region.
- ❖ **Military ambitions:** Chinese naval expansion and potential military ambitions in the Indian Ocean with the active support from Maldives has raised concerns for India.
- ❖ **Trade imbalance:** The significant trade imbalance between India and the Maldives could lead to resentment and calls for diversifying trade partnerships.

Conclusion

- ❖ The visit highlights the importance of the Maldives, India's maritime neighbor, as a key partner in the 'Neighbourhood First' policy and India's Vision SAGAR (Security and Growth for All in the Region).
- ❖ Maldives remains an important partner of India in maintaining peace, stability and prosperity in the Indian Ocean region.

CHANGE IN BANGLADESH, THE CHALLENGES FOR INDIA

Context: Recent crisis in Bangladesh could jeopardise its relations with India and affect growing trade ties, restricting the movement of people and goods, and stalling a potential free trade agreement (FTA) between the two countries.

Background (India-Bangladesh Ties)

❖ **Beginning:** India's relationship with Bangladesh is anchored in common history, heritage, culture and geographical proximity, the foundation of which was laid in the 1971 Bangladesh Liberation War.

❖ India provided critical military and material support to assist Bangladesh in its fight for independence from Pakistan. It became a primary factor in shaping the newly independent nation's policy, as acknowledged by 'Bangabandhu' Sheikh Mujibur Rahman: 'Friendship with India is a cornerstone of the foreign policy of Bangladesh'.

❖ But There was a rise in anti-India sentiment in the mid-1970s over issues ranging from boundary disputes and insurgency to the sharing of water.

❖ Back in February 2009, then-Prime Minister Sheikh Hasina faced a significant crisis within just two months of taking office.

❖ The mutiny of the Bangladesh Rifles (BDR), a paramilitary force, resulted in a loss of lives and posed a direct threat to the newly elected government.

❖ Fast forward to 2024, and we find Bangladesh facing a different set of challenges.

❖ Sheikh Hasina, who has been a key ally to India since coming to power in 2009, has played a crucial role in fostering a healthy relationship between New Delhi and Dhaka.

❖ During her tenure, efforts were made to eradicate anti-India terrorist groups that operated from safe havens in Bangladesh.

❖ Additionally, economic, social, and cultural ties between the two countries flourished.

❖ However, her recent resignation as Bangladesh's Prime Minister introduces uncertainties that could affect bilateral relations in several ways.

Bilateral Trade

❖ **Significance:** Bangladesh is India's largest trading partner in the subcontinent, while India ranks as Bangladesh's second-largest partner in Asia after China.

❖ **Trade Volume:** In the financial year 2023-24, their total bilateral trade amounted to $13 billion.

Exports and Imports:

❖ Bangladesh is the biggest export destination for India's cotton, accounting for 34.9% of India's total cotton exports (some $2.4 billion in FY24). Other major Indian exports to Bangladesh are petroleum products and cereals.

❖ India's top import from Bangladesh are readymade garments, amounting to $391 million in FY24.

Recent Developments

❖ **Elections and Disconnect:** The 2024 elections in Bangladesh were marked by the Opposition's boycott, limited democratic space, erosion of human rights, economic downturn, and high youth unemployment.

✓ These factors contributed to a growing disconnect between the government and its people, especially the youth who had previously benefited from economic growth under Prime Minister Hasina.

❖ **Student Protests:** When students' protests erupted, the government's handling of the situation—almost treating protesters as enemies of the state—sealed Prime Minister Hasina's fate. The use of violence further exacerbated tensions.

Bangladesh Army's Role

❖ **Changing Landscape:** Unlike in 2007, when the army intervened to restore order, the situation in 2024 is different.

  ✓ The army now appears to be facilitating the will of the people by removing a beleaguered Prime Minister and restoring democratic processes.

❖ **Vulnerability and Responsiveness:** This shift has made the army more vulnerable and responsive to public opinion. General Waker-uz-Zaman, the current Bangladesh Army chief, faces a delicate balancing act.

India's Stakes

❖ **Historic Ties:** India and Bangladesh share deep-rooted bonds of history, language, and culture. Their bilateral relations have evolved into a model for the entire region.

❖ **Recent Interactions:** In 2024, there were several high-level interactions between the two countries. Prime Minister Modi reaffirmed people-centric cooperation, and Bangladesh's Foreign Minister Dr. Hasan Mahmud visited India.

  ✓ Both leaders participated in virtual summits and inaugurated the India-Bangladesh Friendship Pipeline.

❖ **Vaccine Cooperation**: India assured Bangladesh of vaccine availability as soon as they are produced domestically.

Free Trade Agreement (FTA) Discussions

❖ In October 2023, India and Bangladesh initiated discussions on a FTA during a meeting of the Joint Working Group on Trade in Dhaka. An FTA would reduce or eliminate customs duties, promote further trade, and facilitate investments.

  ✓ A 2012 working paper published by the World Bank estimated that a full FTA for goods would increase Bangladesh's exports to India by 182%, whereas a partial FTA could lead to a 134% increase.

  ✓ However, an FTA accompanied with improved transport infrastructure and better connectivity could see Bangladesh's exports rise to 297%.

  ✓ India, too, would see an increase to its exports by as much as 172% in this scenario.

❖ **Potential Impact:** Sheikh Hasina's departure could stall progress on the FTA, affecting market access and economic ties between the two nations.

Infrastructure and Connectivity

❖ **Growing Ties:** Infrastructure development and connectivity have been crucial aspects of India-Bangladesh relations.

❖ **Lines of Credit:** India extended three lines of credit to Bangladesh since 2016, totaling $8 billion. These funds were earmarked for road, rail, shipping, and port infrastructure development.

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❖ **Regional Stability:** Stable infrastructure and connectivity contribute to regional stability and economic growth.

✓ A disruption in Indo-Bangladesh ties could thus restrict India's access to the Northeast, which will be connected to mainland India only through the narrow 'Chicken's Neck' — only 22 km at its narrowest — between West Bengal and Assam.

Challenges for India

❖ **Stability and Fundamentalism**: Bangladesh's escalating protests, financial crisis, and rising fundamentalist forces pose challenges for regional stability. India must closely monitor these developments.

❖ **Refugee Crisis:** Any instability in Bangladesh could spill over into India, affecting border security and potentially leading to a refugee crisis.

Conclusion

❖ India needs to navigate this changing landscape in Bangladesh carefully. Strengthening bilateral ties, supporting stability, and addressing shared challenges are crucial for both nations.

❖ As the situation unfolds, both countries will need to navigate this transition carefully to maintain their positive trajectory of cooperation and friendship.

AUKUS NEW DEAL

Context: Australia had signed a deal to allow the exchange of nuclear secrets and material with the United States and Britain.

About

❖ It is a key step toward equipping its navy with nuclear-powered submarines.

❖ It binds the three countries to security arrangements for the transfer of sensitive U.S. and U.K. nuclear material and knowhow as part of the tripartite 2021 AUKUS security accord.

Major Highlights

❖ It specifies that the agreement will remain in force until December 31, 2075, but any party can exit it with a one-year written notice.

❖ In the event of a breach or termination, the remaining countries can demand the return or destruction of any exchanged information, material, or equipment.

❖ The material, to be transferred in complete, welded power vgunits, must only be used for naval propulsion.

❖ The treaty also allows the US and UK to cease cooperation and demand the return of materials if Australia breaches the Nuclear Non-Proliferation Treaty or detonates a nuclear device.

❖ Australia will be responsible for any nuclear safety risks and will indemnify the US and UK against liabilities related to the nuclear material and equipment.

❖ The treaty includes a non-legally binding document outlining additional political commitments but does not specify any obligation for Australia to participate in US-led military actions.

What is AUKUS?

❖ AUKUS is a trilateral defence and security partnership between Australia, the United Kingdom and the United States.

❖ It was established in 2021 to bolster their allied deterrence and defense capabilities in the Indo-Pacific.

- ❖ The trilateral partnership has two pillars.
  - ✓ Pillar I revolves around the acquisition and development of conventionally armed nuclear-powered submarines for the Royal Australian Navy;
  - ✓ and Pillar 2 focuses on cooperation in eight advanced military capability areas: artificial intelligence (AI), quantum technologies, innovation, information sharing, and cyber, undersea, hypersonic and counter-hypersonic and electronic warfare domains.

Why was AUKUS formed?

- ❖ Increasing Presence of China: The Indo-Pacific region has witnessed increasing geopolitical tensions, including territorial disputes, military build-up, and assertive behavior by China.
  - ✓ The participating countries share concerns about maintaining peace, stability, and freedom of navigation in the region.
- ❖ **Technological Cooperation:** AUKUS aims to enhance technological cooperation, particularly in the field of defense and security.
- ❖ **Alliance Strengthening:** AUKUS represents a deepening of security ties between Australia, the United Kingdom, and the United States.
- ❖ **Response to Regional Dynamics**: The formation of AUKUS is seen as a response to shifting regional dynamics and evolving security challenges in the Indo-Pacific.
- ❖ It reflects a broader trend of countries in the region seeking to forge closer security partnerships and alliances to address common concerns and counterbalance China's influence.

Way Ahead

- ❖ Achieving the core objectives will take years, with Pillar I likely requiring decades, even with all states moving forward at full speed.
- ❖ Regardless, AUKUS still holds immediate promise for participating countries.
- ❖ Critically, it will help catalyze technological innovation and enhance research and development for emerging capabilities necessary to maintain a competitive edge, strengthen defense ties, and deepen the three countries' presence in the Indo-Pacific.

INDIA AND MALAYSIA COMPREHENSIVE STRATEGIC PARTNERSHIP

Context: India and Malaysia decided to upgrade ties to a 'Comprehensive Strategic Partnership' during talks between Prime Minister Narendra Modi and Malaysian Prime Minister Anwar Ibrahim.

About

- ❖ Both leaders announced the decision to upgrade the 2010 Strategic Partnership, which had been made an 'Enhanced Strategic Partnership' in 2015, along with a number of agreements and MoUs signed in their presence.
  - ✓ These include MoUs on workers' mobility, digital technology, culture, tourism, sports, and education.
- ❖ The two Prime Ministers also discussed geopolitical challenges, including the current conflicts and tensions in the Indo-Pacific region.

Overview of India and Malaysia Relations

- ❖ Diplomatic Relations: India and Malaysia established diplomatic relations shortly after Malaysia gained independence from British rule in 1957.
  - ✓ Both countries are members of various international organizations, such as the United Nations, ASEAN (Association of Southeast Asian Nations), and the Non-Aligned Movement.

- Trade and Economic Relations: Malaysia is the 13th largest trading partner for India while India stands amongst the 10 largest trading partners globally.
  - ✓ Furthermore, Malaysia has emerged as the third largest trading partner for India from the ASEAN region and India is the largest trading partner for Malaysia among the countries of the Southeast Asian region.
  - ✓ Malaysia stands as an important trade partner, as both countries have engaged in various economic agreements such as the India-Malaysia Comprehensive Economic Cooperation Agreement (CECA).
  - ✓ Both countries have agreed to conduct trade settlements in Indian rupees, reflecting an intention to bolster trade relations.
- **Defense and Security:** The defense ties have steadily expanded, marked by the signing of a defense cooperation memorandum in 1993, regular defense cooperation meetings, joint military exercises, and Malaysia's interest in acquiring 18 new Indian light fighter jets, indicating potential growth in arms trade between the two nations.
- **Strategic Partnership:** India and Malaysia have aimed to strengthen their strategic partnership through various initiatives, including high-level visits, joint commissions, and dialogues.
  - ✓ Both countries have expressed interests in enhancing cooperation in areas such as defense, counter-terrorism, maritime security, and cultural exchanges.
- **ASEAN Centrality:** Malaysia holds a crucial position in expanding India's trade with ASEAN, aligning with India's Act East Policy, advancing maritime connectivity in the Strait of Malacca and South China Sea, and supporting ASEAN's Indo-Pacific Perspective (AOIP) and the Indo-Pacific Initiative (IPOI).
- **Tourism and diaspora:** Over the last two decades, tourism has been a cornerstone in fostering relations between India and Malaysia.
  - ✓ Various agreements, including the India-Malaysia visa waiver for diplomatic and official passport holders, a tourism-focused memorandum of understanding in 2010, a bilateral agreement on employment and workers' welfare in 2009, and a revised air services agreement in 2017, have significantly contributed to the growth of tourism between the nations.
- **Cultural Ties: Indian** influence in Malaysia can be seen in various aspects of Malaysian culture, including language, religion (Hinduism and Buddhism), architecture, cuisine, and festivals.

Challenges

- **Trade Disputes and Imbalances:** Issues related to tariffs, non-tariff barriers, and trade restrictions have occasionally strained economic ties between the two countries.
- **Domestic Politics:** Internal political developments in either country often strain relations. For example, changes in government or political leadership lead to shifts in foreign policy priorities.
- **Geopolitical Considerations:** Both countries have diverse foreign policy priorities and engagements with other nations, which lead to differences in strategic perspectives.
- **South China Sea**: While not directly involved, Malaysia's stance on South China Sea disputes impact its broader regional strategies.
  - ✓ India's interest in regional stability and maritime security sometimes align or conflict with Malaysia's positions.

Conclusion

- India and Malaysia completed 65 years of modern diplomatic relations in 2022.

❖ The relations between India and Malaysia have grown from a Strategic Partnership to an Enhanced Strategic Partnership and to a comprehensive partnership now, with new cooperation in cultural diplomacy, digital economy, and agricultural commodities forthcoming.

'2+2' DIALOGUE BY INDIA AND JAPAN FOCUSING ON INDO-PACIFIC

Context: In a significant diplomatic engagement, India and Japan recently conducted their third "2+2" dialogue, bringing together their foreign and defence ministers.

About the India-Japan 2+2 Dialogue (2024)

❖ It refers to a high-level meeting between the foreign affairs and defence ministers (or secretaries) of two countries.
❖ It's a format that allows for comprehensive discussions on a wide range of issues, including defence cooperation, regional security, and strategic alignment.
❖ It emphasised defence cooperation and the significance of a free and open Indo-Pacific. Both sides reaffirmed their commitment to a rules-based order in the region, especially in light of China's assertiveness.
❖ The strategic partnership between India and Japan is closely tied to the Indo-Pacific. For India, this aligns naturally with its Act East policy.
❖ Both countries recognize the importance of a free and open Indo-Pacific region, where maritime security, trade, and connectivity play crucial roles.

Strategic Context

❖ The dialogue took place against the backdrop of a free, open, and rules-based Indo-Pacific. Both nations recognise the importance of this region, especially given China's assertive military actions in the area.
❖ India and Japan share a "Special Strategic and Global Partnership." This relationship is built on common values such as democracy, freedom, and the rule of law. Defence cooperation has emerged as a crucial pillar within this partnership.

Mutual Cooperation

❖ The India-Japan relationship has transformed into a special strategic and global partnership over the last decade. This evolution stems from expanding interests and collaborative efforts.

Recent Instances of the "2+2" Dialogue

❖ **India-U.S. 2+2 Ministerial Dialogue (2023):** It was aimed to expand the global strategic partnership between India and the US, focusing on defence industrial ties, Indo-Pacific engagement, and cooperation in critical areas like high-technology and minerals.
❖ **India-Australia 2+2 Ministerial Dialogue (2023):** Discussions centred on enhancing defence cooperation and deepening the strategic relationship, particularly in critical sectors such as trade, investment, and access to critical minerals.

Significance of "2+2" Dialogue

❖ **Comprehensive Engagement:** The "2+2" format allows for a holistic discussion that combines diplomatic and defence perspectives. It ensures that both ministries align their strategies and policies.
❖ **Strategic Alignment:** In an increasingly complex geopolitical landscape, countries seek reliable partners who share common interests. The dialogue helps strengthen strategic alignment and mutual understanding.

❖ **Indo-Pacific Focus:** Many of these dialogues emphasise the Indo-Pacific region—a critical area for global security and economic stability. Participants discuss maritime security, freedom of navigation, and regional stability.

Conclusion and Way Forward

❖ India stressed that the "2+2" dialogue should focus on the road ahead. Since their last meeting in Tokyo two years ago, global developments and changes in capabilities necessitate recalibrating their relationship.

❖ It echoed the sentiment, emphasising that the India-Japan partnership rests on democratic values and adherence to the rule of law.

❖ India and Japan continue to strengthen their bilateral ties, particularly in the context of regional security challenges. The Indo-Pacific remains a critical theatre for cooperation, and both nations are committed to maintaining a stable and open environment in the face of geopolitical complexities

TENSIONS IN SOUTH CHINA SEA POSES THREAT TO INTERNATIONAL TRADE

Context: The rising tensions in the South China Sea are posing a threat to international trade.

South China Sea

❖ It is a marginal sea of the Western Pacific Ocean.

❖ It is located between southern China, Taiwan, the Philippines, Indonesia, Vietnam, Thailand, Cambodia and Malaysia.

❖ It is a crucial maritime gateway and junction for shipping between the Pacific and Indian Oceans.

Choke Point in the South China Sea

❖ While the current tensions are between China, the Philippines and Taiwan, the real threat to trade in the Sea comes in the Malacca Strait.
  ✓ The strait is the Choke point in the South China Sea, which lies between Malaysia, Indonesia and Singapore.

Nine Dash Line

❖ China stakes claim to 90% of the South China Sea (SCS), and this claim is based on the U-shaped nine-dash line etched on map in the 1940s by a Chinese geographer.
  ✓ He helped to officially name each chunk of rock and reef, referring to the territory collectively as the South China Sea Islands.

❖ These lines cut into the exclusive economic zones (EEZs), of Brunei, Indonesia, Malaysia, the Philippines, Taiwan and Vietnam.

❖ In recent years, China has doubled down on its territorial claims in the SCS, including in the waters off the Philippines, where Chinese vessels have engaged in brazen acts of provocation.

Importance of the South China Sea for international trade

❖ According to the United Nations Conference on Trade and Development (UNCTAD), about a third of global maritime trade passes through the 3.5 million square kilometer seaway annually,

❖ Around 40% of petroleum products traded globally are delivered via the sea every year.

❖ In 2016, an estimated $3.6 trillion worth of goods and commodities traveled the seaway.

❖ Tens of thousands of cargo vessels move through the South China Sea every year, carrying around 40% of China's, a third of India's and 20% of Japan's trade with the rest of the world.

  ✓ Out of all of Asia, the three countries' economic security is most closely tied to the smooth running of the waterway.

Why is the South China Sea contested?

❖ According to the US Energy Information Administration, the South China Sea is estimated to hold about 5.38 trillion cubic meters of natural gas and 11 billion barrels of oil reserves,

❖ The disputed waters also contain large deposits of rare-earth minerals crucial to China's technological ambitions, including electric vehicle batteries and advanced electronics.

❖ China could also deny foreign military forces, particularly the United States', access to the maritime region.

❖ Control of the sea lane would allow China to potentially disrupt, or threaten to disrupt cargo shipments traveling to and from all countries in East and Southeast Asia.

Way Ahead

❖ The South China Sea is a vital crossroads for both intra-Asian trade as well as for commerce with the rest of the world, especially Europe, the Middle East and Africa.

❖ Hence to de-escalate the current tensions in the South China Sea different parties should avoid hostile actions against each other, uphold a more reconciliatory attitude and emphasize the need to cooperate rather than compete.

PM's VISIT TO UKRAINE

Context: Prime Minister Narendra Modi's visit to Ukraine on August 23, 2024, was largely seen as a diplomatic balancing act rather than a significant peace effort.

India-Ukraine Relations:

❖ **Diplomatic Relations:** India recognized Ukraine as an independent country in December 1991 after the breakup of the Soviet Union. Warm and friendly relations, cooperation in education, legal assistance, and outer space.

❖ **Defence Relations:** Ukraine has supplied military technology to India since its independence. India uses Ukraine-made R-27 air-to-air missiles for SU-30MKI fighters. India has started supplying weapons to Ukraine to enhance defence cooperation.

❖ **Trade:** India is Ukraine's largest export destination in the Asia-Pacific region and fifth largest overall. Pharmaceuticals are India's main export to Ukraine.

❖ **Culture:** Over 30 Ukrainian cultural associations promote Indian dance across Ukraine. Approximately 18,000 Indian students, primarily in medical fields, study in Ukraine. Indian professionals work in pharmaceuticals, IT, engineering, and more.

❖ **Agriculture:** Pre-war Ukraine was one of the biggest sources of sunflower oil for India.

❖ **Post-war Recovery:** Both countries are exploring Indian companies' involvement in Ukraine's reconstruction and recovery efforts.

India's Stand on the Ukraine-Russia Conflict:

1. Advocates peaceful resolution through dialogue and diplomacy.

2. Asserted that India is not neutral, choosing the side of peace.
3. Expressed concern without openly condemning Russia.
4. Emphasised the importance of the UN Charter and territorial sovereignty.
5. Highlighted the economic impact of the war on the Global South.
6. Strongly favours a return to dialogue and diplomacy.

Why is India regarded as the best mediator?

1. **Neutral player:** As India has walked the diplomatic tightrope, it has won credibility on both sides as a mediator between them.
2. **Successful diplomatic involvement earlier:**
   a) Preventing the attack on the nuclear power station at Zaporizhzhia in eastern Ukraine.
   b) During the Black Sea grain shipment, discussions to intervene with Russia.
3. **Leader of Global South:** Mexico had suggested that the PM of India, Pope Francis and the UN Secretary-General should mediate the Russia-Ukraine crisis.
4. **Good relations with Moscow and the West:** India can use this unique leverage to put pressure on Russia to end its war in Ukraine.
5. **Geopolitical aspirations:** Peace-making might help India gain a permanent seat on the UN Security Council.

Challenges ahead for India to be a mediator:

1. **Understanding the dynamics:** Between Russia and Ukraine, Russia and the European players, Ukraine and European partners and move ahead accordingly.
2. **Experience:** India has effectively negotiated in bilateral and multilateral formats, but negotiating in a crisis is a different question.
3. **Risk-taking ability**: While India has shown risk-taking abilities in its immediate region (surgical strikes in Pakistan), entering a geopolitical crisis of this size is different.
4. **Credibility:** The West sees India as closer to Russia, as India keeps buying Russian oil at discounted prices despite the West's criticism.
5. **Cannot afford a slide in relations with Russia:**
   a) Both India and Russia have strategic ties in nuclear, space, defence, energy, and connectivity – sectors.
   b) Russia does not transfer to any other country the military technologies shared with India.
   c) Also, India cannot afford a closer strategic relationship between Russia and China.

Conclusion:

The Russia-Ukraine crisis has entered a new phase, in which Indian diplomacy could aid in a range of realistic ways to address the stated challenges.

INDIA, US SIGNED TWO PACTS TO DEEPEN DEFENCE COOPERATION

Context: Defence Minister Rajnath Singh reached Washington DC on a four-day official visit.
About
❖ India and US signed two key pacts — a non-binding Security of Supply Arrangement (SOSA) and a Memorandum of Agreement regarding Assignment of Liaison Officers.

Security of Supply Arrangement (SOSA)

❖ The SOSA will mandate the US and India to provide reciprocal priority support for goods and services that promote national defence.
❖ The arrangement will enable both countries to acquire the industrial resources they need from one another to resolve unanticipated supply chain disruptions to meet national security needs.

- ❖ India is the 18th SOSA partner of the US after Australia, Canada, Denmark, Estonia, Finland, Israel, Italy, Japan, Latvia, Lithuania, the Netherlands, Norway, Republic of Korea, Singapore, Spain, Sweden, and the UK.
- ❖ The two sides also signed a memorandum of agreement regarding the assignment of liaison officers to deepen defence cooperation.
  - ✓ This agreement seeks to enhance cooperation, understanding, interoperability, and sharing of information on matters of mutual interest.

Overview of India and US Bilateral Relations

- ❖ Since India's independence, ties with the United States have weathered the Cold War–era distrust and estrangement over India's nuclear program.
  - ✓ Relations have warmed in recent years and cooperation has strengthened across a range of economic and political areas.
- ❖ **Bilateral Trade:** The bilateral trade between the two countries has risen by 72 percent between 2017-18 and 2022-23.
  - ✓ The US accounted for 18 percent of the gross FDI inflows into India during 2021-22, ranking second behind Singapore.
- ❖ **Defense and Security:** India and the US have signed a troika of "foundational pacts" for deep military cooperation, beginning with the Logistics Exchange Memorandum of Agreement (LEMOA) in 2016, followed by the Communications Compatibility and Security Agreement (COMCASA) after the first 2+2 dialogue in 2018, and then the Basic Exchange and Cooperation Agreement (BECA) in 2020.
  - ✓ In 2016, the United States elevated India to a major defense partner, a status no other country holds.
- ❖ **Space:** Artemis Accords signed by India established a common vision for the future of space exploration for the benefit of all humankind.
  - ✓ The United States and India cooperate through the bilateral Civil Space Joint Working Group.
- ❖ **Multilateral Cooperation:** India and the United States cooperate closely in multilateral organizations and fora, including the United Nations, G20, Association of Southeast Asian Nations (ASEAN)-related fora, International Monetary Fund, World Bank, and World Trade Organization.
  - ✓ Together with Australia and Japan, the United States and India convene as the Quad, a diplomatic network, to promote a free and open Indo-Pacific.
- ❖ **Nuclear Cooperation:** Civil Nuclear Deal was signed in 2005, under the agreement, India agrees to separate its civil and military nuclear facilities and place all its civil resources under International Atomic Energy Agency (IAEA) safeguards.
  - ✓ In exchange, the United States agrees to work toward full civil nuclear cooperation with India.

Challenges

- ❖ India's preference to its strategic autonomy: While its embrace with the U.S. is getting stronger, deeper and more comprehensive, India is also cognisant of the need to maintain its strategic autonomy.
- ❖ Conflicting positions: India's muted criticism of the Russian invasion of Ukraine in 2022 expectedly led to some frustration in the West, raising questions over India's credibility as a security partner.
- ❖ Defence Relations with Russia: The United States has expressed particular concern regarding new streams of arms like the S-400 air defense system, because they fuel Russian power, diminish prospects for interoperability of and secure communications between U.S. and Indian forces, and preclude sharing of existing sensitive weapons technologies.

Conclusion

- ❖ The evolving relationship between India and the United States holds significant importance in shaping the global order of the 21st century.
- ❖ To fully unlock the potential of this partnership, both governments must focus on reducing bilateral and multilateral bottlenecks and charting a course for a comprehensive and strategic global alliance.

❖ The strengthening of the mechanisms of cooperation between the two militaries is of significance in the context of an increasingly aggressive China.

INDIA-BRAZIL STRATEGIC PARTNERSHIP

Context: India's External Affairs Minister S. Jaishankar co-chaired the 9th India-Brazil Joint Commission with his Brazilian counterpart Mauro Vieira in New Delhi.

About

❖ India's External Affairs Minister said that The India-Brazil strategic partnership has "deepened and diversified" over the years. It spans defense, space, security, technology, and people-to-people relations, strengthening ties across various domains.

❖ India reiterated its full support to the Brazilian G20 presidency as it is currently the chair of the bloc.

❖ The G20 presidency was relayed to Brazil by India last year.

Major Highlights of India and Brazil Relations

❖ **Strategic Partnership**: Relations were established in 1948, and the two countries have been Strategic Partners since 2006.

❖ Both sides also have several Joint Working Groups to take forward sectoral cooperation.

❖ **Trade Relations:** In 2022, the bilateral trade expanded by 32% to US$15.2 billion (India's exports US$8.8 billion & Imports – US$6.4 billion).

❖ India and Brazil have established Trade Monitoring Mechanism as an institutional mechanism to monitor and identify bottlenecks in bilateral trade and take appropriate measures to address them.

❖ **Defence & Security Cooperation:** India and Brazil signed an agreement in 2003 for cooperation in defense. Meetings of the Joint Defence Committee (JDC) are held as an institutionalized mechanism for defense cooperation.

❖ **Security Cooperation:** India and Brazil established a Strategic Dialogue mechanism in 2006 to cover regional and global issues of mutual concern.

❖ The two countries have an Extradition Treaty, Mutual Legal Assistance Treaty in Criminal Matters and an Agreement of Transfer of Sentenced Persons in place.

❖ **Space Cooperation:** India and Brazil signed a framework agreement for peaceful use of outer space in 2004 as well an Agreement for inter-institutional cooperation between the space agencies.

❖ Both countries have been collaborating in Data sharing and satellite tracking of Indian satellites.

❖ **Multifora Relations:** India and Brazil share a very close and multifaceted relationship both at bilateral level as well as in plurilateral fora such as BRICS, BASIC (a bloc consisting of Brazil, South Africa, India and China), G-20, G-4, IBSA, International Solar Alliance, as well as in the larger multilateral bodies such as the UN, WTO, UNESCO, and WIPO.

Challenges in the Relations

❖ **Geopolitical Competition:** Both India and Brazil are emerging powers with aspirations for greater global influence. This leads to competition, particularly in international forums like the United Nations, where both countries seek greater representation and influence.

❖ **Trade Barriers:** Trade between India and Brazil has not reached its full potential, partly due to various trade barriers and protectionist measures in both countries. These barriers hinder the growth of bilateral trade and investment.

❖ **Infrastructure and Connectivity:** Improving infrastructure and connectivity between the two countries remains a challenge.

Way Ahead

❖ Overcoming the challenges requires sustained diplomatic efforts, enhanced economic cooperation, and a commitment to finding common ground on global issues.

❖ Despite the obstacles, the potential benefits of a stronger India-Brazil partnership make overcoming these challenges a worthwhile endeavor.

SOCIAL ISSUES, EDUCATION

A New Era in Health Care in India

Context: India is now recognised globally for its world-class medical services, witnessing profound transformations in the health-care sector and stands as a global health-care hub which signifies our medical prowess but also our economic resilience.

About India's Health Sector: Recent Trends and Initiatives

❖ Government Health Expenditure and Primary Healthcare: Economic Survey 2023-2024 sheds light on several key aspects of India's health sector.
  - ✓ **Rise in Government Health Expenditure:** The latest National Health Accounts (NHA) estimates reveal an increase in the share of Government Health Expenditure in the total GDP as well as the share of GHE in Total Health Expenditure.
  - ✓ Specifically, the share of primary healthcare expenditure has risen from 51.3% of Government Health Expenditure in FY15 to 55.9% of Government Health Expenditure in FY20.
  - ✓ The combined share of primary and secondary care in GHE has also increased significantly, from 73.2% in FY15 to 85.5% in FY20.
❖ **Shift in Private Health Expenditure:** Interestingly, the share of primary and secondary care in private health expenditure has declined during the same period (from 83% to 73.7%).
  - ✓ This shift is attributed to rising tertiary disease burden and increased utilisation of government facilities for primary healthcare.
  - ✓ It indicates a positive move towards strengthening public healthcare infrastructure and reducing reliance on private services.
❖ **Social Security Expenditure on Health:** The Survey highlights a significant increase in social security expenditure on health, growing from 5.7% in FY15 to 9.3% in FY20.
  - ✓ It reflects efforts to provide better healthcare access and financial protection to citizens.
❖ **Medical Tourism and Cost Advantage:** India's healthcare system has become a hub for medical tourism. Patients from around the world seek treatment here due to cost advantages. For instance, the cost of surgery in India is approximately one-tenth of that in the US or Western Europe.

Health Indicators and Initiatives

❖ **Infant Mortality Rate (IMR):** IMR has declined from 39 per 1,000 live births in 2013 to 28 per 1,000 live births in 2020.
  - ✓ This reduction signifies progress in maternal and child health outcomes.
❖ **Maternal Mortality Rate (MMR):** MMR has also shown improvement, declining from 167 per lakh live births in 2014 to 97 per lakh live births in 2020.
  - ✓ Efforts to enhance maternal care and safe deliveries have contributed to this positive trend.

India: From Medical Tourism to Preferred Destination

❖ **Economic Implications:** Until the 1980s, medical tourism was the norm. Indians sought treatments abroad, but this trend has reversed.
  - ✓ Recent studies reveal that India now saves billions in foreign exchange annually because fewer Indians need to travel abroad for medical care.
  - ✓ The cost of treatment here is significantly lower than in western countries, while maintaining high-quality care.
  - ✓ This shift has not only conserved valuable foreign exchange but also positioned India as a cost-effective health-care destination.

- ❖ **Boosting the Economy:** International patients contribute significantly to our economy. The influx of medical tourists generates revenues of over $9 billion annually. Beyond health care, this also fuels related sectors such as hospitality, transportation, and pharmaceuticals.
  - ✓ The Prime Minister's vision of "Heal in India" extends beyond rhetoric—it's a strategic move to position India as a global health-care leader.
- ❖ **State-of-the-Art Infrastructure:** Our state-of-the-art hospitals, skilled medical professionals, and cost-effective treatments have made India a preferred destination for medical tourists.
  - ✓ Patients from across the globe come here for a wide range of treatments, from complex cardiac surgeries to advanced oncology.

A Comparative Overview of India's Health Sector

- ❖ Today, India stands as a global health-care hub, attracting patients from over 147 countries. This evolution signifies not only our medical prowess but also our economic resilience.
- ❖ Health System Review by the World Health Organization (WHO):
  - ✓ **Mixed Health System:** India's health system is diverse, reflecting varying levels of maturity across states. This diversity arises due to the country's vast heterogeneity in health and development indicators.
  - ✓ **Public Expenditure:** One significant challenge is the low public expenditure on health, which remains below 1% of GDP. This contrasts sharply with developed countries where health spending is substantially higher.
  - ✓ **Healthcare Infrastructure:** India has made progress in healthcare infrastructure, but gaps persist. While urban areas boast modern facilities, rural regions often lack adequate healthcare access.
  - ✓ **Human Resources**: India faces shortages of healthcare professionals, including doctors, nurses, and paramedics. This scarcity affects service delivery.
- ❖ **Selected Indicators and International Comparisons:** A report titled "International Health Care Models – Overview of 10 Developing Nations" provides a comparative table of health indicators across different countries, including India.
  - ✓ **Life Expectancy:** India's life expectancy has improved but still lags behind developed nations. Factors like nutrition, sanitation, and healthcare access play a crucial role.
  - ✓ **Infant Mortality:** India faces challenges in reducing infant mortality rates. Developed countries have significantly lower rates due to robust healthcare systems.
  - ✓ **Healthcare Costs: India** is cost-competitive compared to its peers in Asia and the West. The cost of medical services is significantly lower, leading to medical tourism.

Key Concerns and Challenges

- ❖ **Violences Against Healthcare Workers (VAHCW):** These are alarmingly common in India. Over the last few months, there have been numerous incidents reported across various states, targeting doctors, nurses, and paramedics.
  - ✓ Statistics reveal an increasing pattern of aggression, particularly in public healthcare facilities. Younger and female professionals are disproportionately affected.
  - ✓ Lack of Uniformity and Loopholes in Existing Laws: The healthcare community has consistently called for robust laws to deter violence. However, as of 2020, only 19 states had implemented their statutes, each with varying provisions.
- ❖ **Expenditure on Primary Healthcare:** While private health expenditure has risen overall, the share allocated to primary and secondary care has declined. This shift—from 83% to 73.7%—is attributed to rising tertiary care costs.
  - ✓ It's essential to prioritise investment in primary healthcare to ensure preventive and early intervention services.
- ❖ **'One Health' Approach for Emerging Diseases:** Epidemics like Nipah virus outbreaks and Covid-19 often originate from non-human sources and cross over to humans.

- ✓ Integrating human, animal, and environmental health is crucial for disease prevention and control.
- ❖ **Health Inflation and Expenditure:** The current annual rate of medical inflation stands at 15%, while overall inflation is 6-7% per annum.
  - ✓ Health expenditure currently accounts for 5% of India's private final consumption expenditure.

Significant Initiatives

- ❖ **Ayushman Bharat Digital Mission (ABDM):** It aims to create a national digital health ecosystem that supports universal health coverage. It focuses on efficiency, accessibility, inclusivity, affordability, and safety.
  - ✓ The Ayushman Bharat Health Account (ABHA) Number facilitates digital access to health records. It allows interaction with healthcare providers and seamless receipt of lab reports, prescriptions, and diagnoses from verified professionals.
- ❖ **CoWIN App:** CoWIN (COVID Vaccine Intelligence Network) played a crucial role during the pandemic. It facilitated vaccine registration, appointment scheduling, and tracking of vaccination status.
  - ✓ By leveraging technology, CoWIN ensured efficient vaccine distribution and administration across the country.
- ❖ **Aarogya Setu:** Originally developed as a COVID-19 contact tracing app, Aarogya Setu has evolved into a comprehensive National Health App.
  - ✓ Through Aarogya Setu, individuals can register for an Ayushman Bharat Health Account (Digital Health ID). It enables interactions with healthcare providers and seamless access to digital health records.
- ❖ **e-Sanjeevani and e-Hospital:** These telemedicine platforms have revolutionised healthcare delivery. Patients can consult doctors remotely, receive prescriptions, and seek medical advice without physical visits.
  - ✓ e-Sanjeevani focuses on outpatient services, while e-Hospital caters to inpatient consultations.
- ❖ **PM Jan Aushadhi Kendras:** Providing affordable generic medicines.
  - ✓ AMRIT (Affordable Medicines and Reliable Implants for Treatment): Ensuring access to quality medicines and medical devices.
- ❖ **Increased Budget Allocation:** In the 2024-2025 budget, the Union Health Ministry received a 12.9% increase in funding, reaching Rs. 90,958.63 crore.
  - ✓ The budget also exempted customs duty on three cancer treatment drugs: Trastuzumab Deruxtecan, Osimertinib, and Durvalumab.
- ❖ **Addressing Obesity and Mental Health:** The Economic Survey highlighted rising obesity and mental health challenges.
  - ✓ Obesity is linked to processed food consumption, sedentary lifestyles, and micronutrient deficiencies. The survey emphasised the need for balanced diets.
  - ✓ Mental health, intertwined with overall well-being, received attention. The National Tele Mental Health Programme was allocated Rs. 90 crore.
- ❖ **One Health Initiative:** This cross-sectoral collaboration aims to improve health outcomes by addressing interlinked issues related to livestock health, human health, wildlife health, and the environment.
- ❖ **Citizens' Commission on Reimagining India's Health System:** A citizen-led initiative working towards achieving universal health coverage (UHC) in India. It emphasises collaboration across sectors and community involvement.

Way Forward: Room for Growth

- ❖ India's Aspiration as a Global Health-Care Leader needs to foster an environment conducive to innovation by ensuring equitable access to quality health care, and prioritising the well-being of every individual.

- ❖ NITI Aayog emphasises affordable health care as a national priority, leveraging technology to reduce costs for all citizens.
- ❖ While India has made significant strides in medical tourism, there's still room for improvement. Compared to our neighbouring countries, we can do more to enhance our health-care offerings.

But the trajectory is promising, and with continued efforts, we can solidify our position as a global health-care leader.

LANDSCAPE OF SEXUAL VIOLENCE LEGISLATION IN INDIA

Context

- ❖ The issue of sexual violence against women is deeply concerning, and it's essential to explore why our legal framework sometimes falls short in addressing this pervasive problem.

About the Sexual Violence

- ❖ According to the World Health Organisation (WHO), it is any sexual act, attempt to obtain a sexual act, or other act directed against a person's sexuality using coercion, by any person regardless of their relationship to the victim, in any setting.
- ❖ It includes rape, defined as the physically forced or otherwise coerced penetration of the vulva or anus with a penis, other body part or object.

Historical Context and Legal Framework in India

- ❖ India's legal framework related to sexual violence has evolved over time, influenced by feminist movements, anti-caste movements, and other vocalisations.
    - ✓ Laws cover a range of offenses, from rape to verbal abuse of a sexual nature.
- ❖ Minority laws related to sexual violence—ranging from rape to verbal abuse—hold significant historical importance. Understanding this context is crucial for meaningful reform.

Intersectionality and Gender Violence

- ❖ To understand sexual violence legislation comprehensively, there is need to consider intersectionality. Factors such as class, caste, religion, and geography significantly influence how cases of gender violence are perceived by civil society, the government, and the media.
- ❖ These factors also impact the perception of perpetrators and the punishments meted out.

Beyond Rape Alone

- ❖ Laws on rape cannot exist in isolation. To truly address men's brutalisation of women, there is need to recognise that sexual violence is just one facet of a larger problem, including:
- ❖ Dowry Deaths: In India, annual dowry deaths claim approximately 6,516 lives—that's one victim every 90 minutes.
    - ✓ Shockingly, the conviction rate in such cases remains abysmally low. The accused often escape justice by paying "blood money" to the victim's family—a compromise routinely allowed by the police and courts.
- ❖ **Domestic Violence:** Undoubtedly, domestic violence is the most underrated crime against women across all socio-economic strata.
    - ✓ The law prescribes a maximum punishment of three years' imprisonment, making it nearly impossible for the police to arrest the accused promptly.

- ❖ **Stalking and Harassment:** Similar issues plague cases of stalking and harassment. Lax bail norms hinder corrective action, allowing aggressors to continue their predatory behaviour unchecked.
- ❖ **Marital Rape:** The penal code does not recognise marital rape, which is a significant issue.

Calcutta High Court Verdict (2023)

- ❖ It issued a controversial judgement advising adolescent girls to "control sexual urges." This ruling sparked significant debate and concern.
- ❖ The contentious observations made by the Calcutta High Court included statements such as:
  - ✓ **Duty to Protect Autonomy and Dignity:** The High Court suggested that it is the duty of every female adolescent to protect her right to integrity, dignity, and self-worth.
  - ✓ **Control of Sexual Urges**: The judgement implied that girls should control their sexual urges, as societal perception often labels them as "losers" when they engage in sexual pleasure.
- ❖ However, recently the Supreme Court stepped in and set aside the High Court's order, emphasising the need to protect children from sexual offences.

Related Concerns

- ❖ Despite legal frameworks, the implementation of rape laws in India remains poor.
  - ✓ Survivors, especially those from marginalised communities based on caste, class, and ethnicity, face numerous obstacles in accessing justice.
  - ✓ Corruption within law enforcement agencies exacerbates these challenges.
- ❖ **Low Conviction Rates:** Despite doubling prison terms for rapists to 20 years, India still grapples with a low conviction rate.
  - ✓ Structural factors—such as caste, community, and class status—contribute to this.
  - ✓ Vulnerable groups, including working-class women, minorities, and lower-caste Dalits, face heightened risk.
  - ✓ Additionally, riot or conflict situations exacerbate their vulnerability to sexual violence.
- ❖ **Flaws in the Judicial System:** The wheels of justice turn too slowly. Civil society activists rightly demand quicker implementation of laws.
  - ✓ Vigilante justice sometimes fills the void left by the sluggish legal process.

Supreme Court Intervention

- ❖ The Supreme Court's intervention restored the conviction of the accused under the Protection of Children from Sexual Offences (POCSO) Act and the Indian Penal Code (IPC).
- ❖ Additionally, the Court directed states to implement relevant provisions of the POCSO Act and the Juvenile Justice Act.
- ❖ Such decisions play a vital role in shaping legal norms and societal attitudes toward sexual violence.

Intersectional Approaches and Community Engagement

- ❖ **Safe Spaces:** Courts must ensure that marginalised groups—such as Muslim and Dalit women—feel safe within legal and medical institutions.
- ❖ Community engagement programs can educate people about the impact of sexual violence and the importance of supporting survivors.
- ❖ Changing societal attitudes is crucial for long-term change.

Conclusion

- ❖ There are multifaceted solutions against sexual violence. Strengthening laws is essential, but so is addressing the broader ecosystem—where dowry deaths, domestic violence, and harassment persist.

❖ Efforts to combat sexual violence must address gaps in governance systems. Recommendations made by experts often remain unimplemented, leading to inadequate utilisation of allocated budgets.

❖ Solutions should focus on effective implementation and systemic change.

GENERAL STUDIES 3.

ECONOMY

TOURISM SECTOR IN INDIA

Context: According to the Travel and Tourism Development Index (TTDI) 2024 report published by the World Economic Forum (WEF), India is ranked 39th among 119 countries.

About

❖ In the previous index published in 2021, India was ranked 54th.
❖ India's scores have improved in three areas: Prioritization of Travel & Tourism, Safety & Security, and Health & Hygiene.
❖ There were 975 million International Tourist arrivals around the world in 2022, wherein India recorded 14.3 million International Tourist Arrivals that represented 1.47% of the international inbound tourism market share.
    ✓ The share of India's International Tourist Arrivals in Asia & Pacific is 15.66% in 2022.

Types of Tourism offered in India

❖ Bounded by the Himalayan ranges in the north and edged by a coastline surrounded by three seas, India has magnificent historical sites and royal cities, golden beaches, misty mountain retreats, rich cultures and festivities.
❖ Adventure tourism: This involves exploration of remote areas and exotic locales and engaging in various activities.
    ✓ For adventure tourism in India, tourists prefer to go trekking to places like Ladakh, Sikkim, and Himalaya.
❖ **Spiritual Tourism :** The astounding diversity of religions, cultures, and languages of India is unique and unparalleled.
❖ **Beach Tourism:** India's vast coastline and islands provides ample opportunities for tourism.
    ✓ Kerala, Goa, Andaman & Nicobar Islands, Lakshadweep islands attract tourists in large numbers all around the year.
❖ **Cultural tourism: India** is known for its rich cultural heritage and an element of mysticism, which is why tourists come to India to experience it for themselves.
❖ The various fairs and festivals that tourists can visit in India are the Pushkar fair (Rajasthan), Taj Mahotsav (Uttar Pradesh), and Suraj Kund mela (Haryana).
❖ **Wildlife tourism:** India has a rich forest cover which has exotic species of wildlife – some of which are even endangered and very rare. This has boosted wildlife tourism in India.
❖ **Medical tourism**: Tourists from all over the world come to India to avail themselves of cost-effective but superior quality healthcare in terms of surgical procedures and general medical attention.

Indian Tourism Sector

❖ The Indian Tourism sector ranks among the fastest-growing economic sectors in the country.
❖ International Tourist arrival is expected to reach 30.5 million by 2028.
❖ By 2028, India's tourism and hospitality industry is projected to generate revenue of over $59 Bn.
    ✓ Additionally, Foreign Tourist Arrivals (FTAs) are anticipated to reach 30.5 Mn by 2028.

Challenges

❖ **Infrastructure Deficiencies:** Many tourist destinations in India suffer from inadequate infrastructure, including poor road conditions, insufficient public transportation, and inadequate facilities in popular tourist areas.

- ❖ **Environmental Degradation:** Increased tourism lead to environmental problems such as pollution, overuse of natural resources, and damage to wildlife and ecosystems. Sustainable tourism practices are often lacking.
- ❖ **Lack of Standardization:** There is a lack of standardized quality control across various services in the tourism sector, from hotels and restaurants to tour operators. This inconsistency affect the overall tourist experience.
- ❖ **Seasonality:** Many tourist destinations face seasonal fluctuations, with high tourist numbers during peak seasons and low numbers during off-seasons.
- ❖ **Marketing and Promotion Challenges**: Effective marketing strategies are often lacking, and there is a need for better promotion of lesser-known destinations.
- ❖ **Cultural Sensitivity and Management:** Managing cultural heritage responsibly while balancing tourism needs is challenging.
  - ✓ There are issues related to respecting local traditions and practices while catering to tourist demands.

Government Initiatives

- ❖ **Incredible India Campaign:** Launched in 2002, this ongoing campaign aims to position India as a premier tourist destination.
  - ✓ It focuses on highlighting India's diverse culture, heritage, and attractions through various media and promotional activities.
- ❖ **National Tourism Policy:** The National Tourism Policy aims to promote sustainable tourism, improve infrastructure, and increase tourist arrivals.
- ❖ **Swadesh Darshan Scheme:** This scheme was launched to develop theme-based tourist circuits across the country.
  - ✓ It focuses on creating world-class infrastructure, including roads, amenities, and signage, to improve the tourist experience.
- ❖ **Prasad Scheme:** The Pilgrimage Rejuvenation and Spiritual, Heritage Augmentation Drive (PRASAD) aims to develop and beautify pilgrimage destinations across India, enhancing facilities and accessibility for spiritual tourism.
- ❖ **Atithi Devo Bhava Campaign:** This initiative promotes hospitality and the cultural ethos of treating guests with utmost respect and care.
  - ✓ It includes training programs for service providers in the tourism sector.
- ❖ **Visa Reforms:** The introduction of e-visa facilities for citizens of many countries has simplified the process for obtaining a visa to visit India. This move aims to attract more international tourists.
- ❖ **Tourism Infrastructure Development:** The government has invested in improving infrastructure, including the development of airports, roads, and railways, to make travel more convenient for tourists.
- ❖ **Support for Sustainable Tourism: The** government is promoting eco-friendly and sustainable tourism practices through various schemes and guidelines, including the promotion of responsible tourism.

LOW DISBURSAL OF MGNREGA UNEMPLOYMENT ALLOWANCE

Context: Recently, only ₹90,000 was released as 'unemployment allowance' in 2023-24 under Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA).

About

- ❖ The Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA), enacted in 2005, aims to enhance the livelihood security of households in rural areas.
- ❖ It is one of the largest public workfare programs in the world and has been instrumental in addressing the issue of rural poverty and unemployment in India.
- ❖ One of its key objectives is to ensure that work is provided promptly to those who demand it.

Key Provisions

❖ **Guaranteed Employment:** MGNREGA guarantees at least 100 days of unskilled work per year for every rural household that seeks it. This work can include projects related to water conservation, land development, construction, agriculture, and allied activities.

❖ **Decentralised planning:** The program is implemented through Gram Panchayats, which are local self-governance institutions, ensuring decentralised planning and implementation.

❖ **Demand-Driven Approach:** Unlike top-down programs, MGNREGA is demand-driven.
  - ✓ As per the Section 7(1) of MGNREGA, if a household requests work, it must be provided within 15 days. If not, the worker is entitled to a daily unemployment allowance.
  - ✓ It is meant to provide relief to workers when work is not provided despite their demand.

❖ **Wage Payments:** Unskilled workers must receive their wages within 15 days. In case of delays, the central government compensates them.

❖ **Coverage:** MGNREGA covers all rural districts in India except those with a 100% urban population. It's a lifeline for rural households, especially during challenging times.

❖ **Statutory Limit:** Wages must be paid according to the wages specified for agricultural labourers in the state under the Minimum Wages Act, 1948.

❖ **Social Security Measures:** The program provides for a number of social security measures such as unemployment allowances and pension schemes for the aged and widows.

❖ **Transparency and Accountability**: MGNREG Aprovides for transparency and accountability through the use of biometric tools and a transparent complaint redressal mechanism.

Unemployment Allowance (Figures)

❖ In the financial year 2023-24, various states released a mere ₹90,000 as unemployment allowance. To put this in perspective, the corresponding figure in the previous year (2022-23) was ₹7.8 lakh.

❖ Clearly, there has been a significant drop in disbursals, raising concerns about the effectiveness of MGNREGA in addressing rural unemployment.

State-Level Disbursals

❖ In the last two financial years (2022-23 and 2023-24), only six states disbursed the unemployment allowance.

❖ In the preceding years (2021-22 and 2020-21), the numbers were even lower—only three and four states, respectively, paid the allowance.

Underlying Issues

❖ **Unavailability of Work:** Work is often unavailable for beneficiaries. Despite their demand, suitable employment opportunities are scarce. This situation exacerbates rural economic distress.

❖ **Delayed Registration of Demand:** Block-level functionaries responsible for registering work demand may not do so in real time. Consequently, formal data on MGNREGA work demand may not accurately reflect the true demand.

❖ **Flawed Reporting System:** The reporting system for MGNREGA has its flaws. Work demanded is only reported on the portal when actual employment is provided.
  - ✓ It may be driven by a desire to reduce the state government's liability towards unemployment allowance.

Other Challenges

❖ **Funding:** Adequate funding is crucial to sustain the program. Budget allocations need to keep pace with demand.

- ❖ **Effective Implementation:** Ensuring timely work provision and wage payments remains a challenge. The recent release of only ₹90,000 as "unemployment allowance" in FY 2023-24 highlights this issue.
- ❖ **Monitoring and Accountability:** Strengthening monitoring mechanisms and social audits can enhance transparency and accountability.

Conclusion

- ❖ The low disbursal of unemployment allowance undermines the very purpose of MGNREGA. As we strive for inclusive growth and rural development, addressing this chronic issue should be a priority.
- ❖ States must take proactive measures to ensure timely employment and fair compensation for workers who rely on this vital safety net.

DEVELOPED COUNTRY: A STATUS INDIA IS AIMING

Context: There's an optimistic belief that India's economic growth is inevitable .

- ❖ But previous countries with similar growth trajectories have often failed to transition to developed status.

India's Status

- ❖ India's journey towards becoming a developed nation by 2047 hinges significantly on improving its infrastructure, a cornerstone for fostering liveable, climate-resilient, and inclusive cities that drive economic growth.
  - ✓ From 1991 to 2011, India's poverty rate dropped from about 50% to 20%, lifting 35 crore people out of poverty.
  - ✓ While income inequality persists, overall living standards have improved, especially for those at the bottom of the economic pyramid.
- ❖ **Present Scenario :**
- ❖ India's real GDP is projected to grow between 6.5–7 per cent in 2024-25. The Indian economy recovered swiftly from the pandemic, with its real GDP in FY24 being 20 per cent higher than the pre-COVID, FY20 levels.
- ❖ The World Bank in June 2024 predicted that India is set to remain the fastest-growing major economy globally, though its growth rate is expected to slow.
  - ✓ It maintained the GDP growth forecast for India at 6.6 per cent for FY25.

Challenges

- ❖ **Agricultural Sector:** 46% of India's labor force is in agriculture, which is low-productivity and contributes only 18% to GDP.
- ❖ **Female Labor Force Participation:** At 37%, this is low compared to other countries like China, Vietnam, and Japan.
- ❖ **Middle-Income Trap**: Many countries fail to progress from middle-income to high-income status.
- ❖ There is difficulty in leveraging surplus labour for low-end manufacturing, limiting growth opportunities.
- ❖ Indian States face cost disabilities for power, logistics and financing, coupled with low labour productivity when compared to countries such as Bangladesh, China and Vietnam, and a compliance burden that deters new players from entering and the existing ones from expanding
- ❖ India lags behind in HDI rank mainly because of its low life expectancy and per capita income, which can be improved with government spending in the education and health sectors.

Suggestions

- ❖ India's focus should be on Manufacturing and To grow, India should emulate successful models like South Korea and Vietnam by focusing on low-skilled, export-oriented manufacturing.
  - ✓ Prioritize low-skilled manufacturing sectors like electronics and apparel to create large-scale employment.
- ❖ There is a need to avoid protectionism because large tariffs could harm industries dependent on imported components, raising prices and reducing competitiveness.
- ❖ The government should develop industrial clusters with modern infrastructure, education, healthcare, and other amenities.
- ❖ There is a need to maintain a market-led economy with minimal government interference, improve ease of doing business, and foster private enterprise.
- ❖ Track inter-State migration, urbanization, female labor force participation, and the decline of agriculture's employment share to assess progress.
- ❖ With ambitious and forward-thinking strategies, India can achieve its economic goals and fulfil its potential.

THE PERILS OF DELAYING THE POPULATION CENSUS

Context: The Indian decadal Census has been delayed by more than three years now despite several concerns having been raised about the consequences of not having a Census.

Why does the Census matter beyond mere numbers?

- ❖ **Beyond Headcounts:** The Census is not just about tallying heads; it encompasses a wide range of crucial information. It provides insights into locational patterns, familial structures, and individual characteristics.
  - ✓ Imagine it as a snapshot of our society—a comprehensive view that helps us understand the changing dynamics of our population.
- ❖ **Reliability of Surveys:** Large-scale surveys, such as the National Family Health Survey and the Periodic Labour Force Survey, rely on a Census frame that is now one and a half decades old.
  - ✓ Using outdated data affects the reliability and representativeness of these surveys. We need fresh information to make informed decisions about education, occupation, employment, health (including the impact of COVID-19), and livelihoods.
- ❖ **Course Correction and Strategy:** Over the past fifteen years, India has undergone significant transformations. These changes extend beyond population size and composition. We've witnessed shifts in education, employment patterns, and health outcomes.
  - ✓ Without a current Census, our strategies for development and welfare risk being misaligned. It's like trying to navigate without a compass—possible, but not advisable.
- ❖ **Political Echoes and Caste Census:** There's a universal echo for conducting a caste-based Census, often driven by political motives rather than genuine development planning.
  - ✓ However, this focus on caste alone misses the broader utility of a Census. It's not just about politics; it's about understanding our society comprehensively.

Importance of Census in India

- ❖ **Understanding Demographics:** The census provides a snapshot of India's demographic structure. It tells us how many of us there are, where we live, our age groups, gender distribution, and more. It is crucial for policymakers, researchers, and social planners.
- ❖ **Resource Allocation:** Governments allocate resources based on population data. Whether it's building schools, hospitals, or roads, decisions hinge on accurate population figures. It helps distribute funds fairly across states and regions.
  - ✓ For instance, if a state has a rapidly growing population, it needs more schools and healthcare facilities.
- ❖ **Tracking Progress:** Decade by decade, the census paints a canvas of India's journey. One can see improvements in literacy rates, healthcare access, and gender ratios.

- ❖ **Planning for the Future:** By analysing trends from past censuses, demographers predict future population growth. It informs urban planning, infrastructure development, and environmental policies.
- ❖ **Social Justice and Equity:** The census ensures that marginalised communities aren't left behind. It captures data on caste, religion, and other social parameters. It helps identify disparities and design affirmative action policies.
- ❖ **Political Representation:** The census plays a very important role in redrawing-of-constituency maps. It determines how many seats each state gets in the Lok Sabha. Accurate population data ensures fair representation.

Why is the Census Delaying?

- ❖ **When it comes to the decennial Census—**the grand national headcount that shapes our understanding of demographics, social structures, and resource allocation—time is of the essence.
- ❖ Unfortunately, we find ourselves in a situation where the Census, originally slated for 2021, remains in limbo due to delays.
- ❖ The Centre's decision not to extend the deadline for freezing administrative boundaries beyond June 30, 2024, raised hopes that the Census operations would finally kick off in October 2024.
- ❖ The Budget for 2024-25 allocated a mere ₹1,309.46 crore for the Census—a significant reduction from the ₹3,768 crore allocated in 2021-22.
  - ✓ It hints that the Census might not happen anytime soon, even after considerable delay.

Does Delaying the Census Matter?

- ❖ **Access to Welfare Schemes:** Conducting the Census on a priority basis is non-negotiable. Since the last Census in 2011, our population has grown, and so have the needs of our citizens.
  - ✓ Access to government welfare schemes—ranging from healthcare to education to employment—is often tied to Census data. Without an updated Census, many remain excluded from these crucial benefits.
- ❖ **Women's Reservation Act:** It aims to reserve 33% of seats in both Parliament and State Assemblies for women. However, its implementation hinges on accurate Census data. Until we count heads and households anew, this transformative legislation remains in a holding pattern.
- ❖ **Economic Well-Being of Marginalised Communities:** There's a growing demand for a caste-based Census. Precisely understanding the economic well-being of marginalised communities requires granular data. Without it, targeted policies and affirmative action become shots in the dark.

Urgency

- ❖ Missing the 2021 Census cannot be justified, especially when we managed to hold a general election amidst uncertainties. The machinery required for a Census is comparable to that of an election.
  - ✓ Delaying it further seems more like avoidance than a logistical challenge.
- ❖ **Demographic Transition and Dividend:** India is experiencing rapid demographic changes. A population Census is essential to reveal these shifts, including familial structures, occupational distributions, and geographical patterns.
  - ✓ Without this data, monitoring the success of government programs becomes misleading.

Conclusion and Way Forward: What Needs to Happen?

- ❖ **Budgetary Provisions:** The 2025-26 Census Budget must be robust enough to accommodate the postponed 2021 Census. We need to allocate resources for house listing, housing census, and updating the National Population Register (NPR).
- ❖ **Preliminary Preparations:** Thankfully, groundwork has been underway. State and Union Territory Census Directorates have been prepping—updating maps, testing questionnaires, and training staff. Once the new Census date is fixed, they're ready to roll. A quick refresher training is all they need.
- ❖ **Digital Census:** The future is digital. Collecting Census data via mobile apps streamlines the process. The ₹1,309.46 crore in the 2024-25 budget could fund essential preliminary activities, including finalising enumeration areas, refining questionnaires, and training core staff for the digital shift.

❖ The Census isn't just about numbers or just a bureaucratic exercise; it's about empowerment, equity, informed policymaking, and the pulse of our nation. Let's prioritise it, come what may. Our nation's well-being depends on it.

CLEAN PLANT PROGRAMME' TO BOOST HORTICULTURE SECTOR

Context: The Cabinet approved the Clean Plant Programme (CPP) with a budget of Rs 1,766 crore.

About 'Clean Plant Programme'

❖ It is part of the Mission for Integrated Development of Horticulture (MIDH).
❖ It was announced in the Budget Speech by the Finance Minister in February 2023.
❖ It seeks to set new standards for excellence and sustainability in horticulture.
❖ It will be executed by the National Horticulture Board in collaboration with the Indian Council of Agricultural Research.
❖ **Components:**
  ✓ **Clean Plant Centres (CPCs):** For developing and providing clean planting materials.
    ➢ Nine state-of-the-art CPCs will be established across India for advanced diagnostics and virus-free planting material
  ✓ **Certification and Legal Framework:** To ensure quality and compliance.
    ➢ Implementation of a robust certification system under the Seeds Act 1966 for accountability and traceability.
  ✓ **Enhanced Infrastructure:** To support the program's implementation.
    ➢ Support for large-scale nurseries to develop infrastructure for efficient multiplication of clean planting material.
❖ **Benefits:** It aims to enhance the quality and productivity of fruit crops in India.
  ✓ Provides access to virus-free and high-quality planting materials.
  ✓ Expected to improve crop yields and farmer incomes.
  ✓ Strengthens India's position as a global exporter, expanding market opportunities and increasing international trade share.
  ✓ Supports Mission LiFE and One Health initiatives.

Overview of Horticulture Sector in India

❖ It has emerged as a vital component of the agricultural economy, contributing significantly to the nation's GDP and providing employment to millions.
❖ With diverse agro-climatic conditions, India is well-suited for the cultivation of a wide variety of horticultural crops, including fruits, vegetables, flowers, spices, and medicinal plants.
❖ The horticulture production in the country in 2023-24 (Second Advance Estimates) is estimated to be about 352.23 Million Tonnes, a decrease of about 32.51 Lakh Tonnes (0.91%) over 2022-23 (Final Estimates).
❖ Increase in production of Fruits, Honey, Flowers, Plantation Crops, Spices and Aromatics & Medicinal Plants is seen over 2023-24 (Final Estimates) whereas decrease in Vegetables.
❖ Global Leadership: India is a world leader in the production of several fruits including mango, banana, guava, papaya, sapota, pomegranate, lime, and aonla.
  ✓ India is the second-largest producer of fruits and vegetables globally.
  ✓ Dominates in the production of spices, coconut, and cashew nut.

Importance

❖ It provides raw materials for various industries, including food processing, pharmaceuticals, and cosmetics, thereby generating substantial employment opportunities

❖ It plays a significant role in the Indian economy by ensuring nutritional security, providing rural employment, diversifying farm activities, and enhancing farmers' income.

❖ The horticulture sector contributes about 28% to the agricultural GDP of India

Challenges

❖ **Infrastructure:** Inadequate cold storage and transportation facilities lead to significant post-harvest losses.

❖ **Market Access:** Farmers often face difficulties in accessing markets and getting fair prices for their produce.

❖ **Climate Change:** Erratic weather patterns and climate change pose a threat to horticultural production.

Government Initiatives

❖ **Mission for Integrated Development of Horticulture (MIDH)**: It aims for the holistic development of horticulture by increasing area, production, and post-harvest infrastructure.
   ✓ MIDH is a Centrally Sponsored Scheme implemented in States/UTs since 2014-15.

❖ **Rashtriya Krishi Vikas Yojana (RKVY):** State governments' horticulture development projects are also supported under RKVY.

❖ The launch of the National Horticulture Mission has significantly boosted production and productivity.
   ✓ Focuses on the development of horticulture through technology promotion, extension, and post-harvest management

❖ **Horticulture Cluster Development Programme:** Launched to promote integrated and market-led development of horticulture clusters to enhance global competitiveness

Conclusion and Way Forward

❖ The horticulture sector in India holds immense potential for driving economic growth and improving livelihoods.

❖ With supportive government policies, technological innovations, and a focus on sustainable practices, the sector is poised for significant advancements in the coming years.

❖ There is a need for adoption of modern technologies such as precision farming, protected cultivation, and drip irrigation can enhance productivity and sustainability.

INDIA'S COMMITMENT TOWARDS BECOMING A GLOBAL LEADER IN SEMICONDUCTOR PRODUCTION

Context: The Prime Minister on the occasion of 78th Independence day, outlined commitment towards becoming a global leader in semiconductor production and achieving the target of Viksit Bharat by 2047.

About

❖ There was a time when India used to import mobile phones but now India has created a manufacturing ecosystem in the country and emerged as a big manufacturing hub.

❖ Many global companies are eager to invest in India, with the nation poised to become a global leader in semiconductor production.

❖ There is a need for state governments to compete in attracting these investments, which requires policies that ensure good governance and law and order.

India's Semiconductor Industry

❖ In 2022, the Indian semiconductor market was valued at US$ 26.3 billion and is projected to expand at a CAGR of 26.3% to US$ 271.9 billion by 2032.

❖ Semiconductor devices include diodes, transistors and photovoltaic cells assembled or not assembled in modules or panels, light-emitting diodes (LEDs) and mounted piezo-electric crystals.

Factors favouring India

❖ **Skilled Workforce:** India leads the world with record number of Science, Technology, Engineering and Mathematics (STEM) graduates, offering the much-needed skilled workforce required in semiconductor manufacturing, design, research, and development.

❖ **Cost Advantage:** India offers a substantial cost advantage for semiconductor manufacturing due to the lower labour cost, supply chain efficiency and emerging ecosystem.

❖ **Global Supply Chain Diversification**: India has become a preferred destination for back-end assembly and testing operations amidst this industry relocation, with potential for future front-end manufacturing.

❖ **Policy support:** The Indian government has promptly seized the opportunity following the global semiconductor supply chain glut after the pandemic and showed great intent through policy support to present India as an alternative to China in the global semi supply chain.

Government Initiatives

❖ **India Semiconductor Mission:** It functions as a dedicated division within the Digital India Corporation.
  ✓ Its main goal is to nurture a strong semiconductor and display ecosystem to position India as a prominent global player in electronics manufacturing and design.
  ✓ Under ISM, there are several schemes in place:
❖ The government offers incentives for manufacturing setup in India:
  ✓ Under the Semiconductor Fab Scheme, fiscal support of 50% of the project cost on an equal footing for all technology nodes.
  ✓ Under the Display Fab Scheme, fiscal support of 50% of the project cost on an equal footing basis.
  ✓ Under the Compound Semiconductor Scheme, fiscal support of 50% of the capital expenditure on an equal footing basis, including support for discrete semiconductor fabs.
❖ In February 2024, the government approved the establishment of three semiconductor plants, two in Gujarat and one in Assam.

Way Ahead

❖ India is poised to witness exponential growth in its semiconductor industry with the advent of well-thought initiatives as well as calculated partnerships.

❖ Through the European Commission and Japan, the Indian government's MoU indicates their commitment to take proactive steps towards strengthening global semiconductor ecosystems.

❖ With sustained efforts and a proactive stance, India is on course to solidify its position as a leading semiconductor manufacturing hub, contributing majorly to technological advancement and economic growth
.

INDIA NEED TO CREATE CLOSE TO 8 MILLION NEW JOBS

Context: In the recently released Economic Survey, the Chief Economic Advisor estimated that India needed to create close to 8 million new jobs each year for the coming decade.

Status

❖ India has been one of the brightest spots when it comes to GDP growth rates.
❖ India is doing extremely well in terms of its growth numbers.

✓ At 7% growth for this fiscal year makes India the fastest growing major economy in the world, and that contributes about 17% to global growth

Main Challenges

❖ **Inflation:** Inflation is stabilizing but still needs careful management to avoid adverse economic effects.
❖ Geopolitical Tensions: Conflicts, particularly in the Middle East, could affect commodity prices, such as oil.
❖ **Political Uncertainty:** Numerous elections globally this year may bring policy uncertainty affecting growth.
❖ **Medium-Term Growth:** Projected global growth rates are weak compared to historical averages, necessitating structural reforms.
❖ The dollar's dominance is due to the strength of U.S. institutions, open capital markets, and network effects.

Impact of Artificial Intelligence (AI) on Employment

❖ About 25% of Indian workers are exposed to AI, with mixed effects on different sectors.
    ✓ AI can help address skill shortages, improve public finance, and enhance educational methods.
    ✓ But certain sectors, like call centres, may see reduced demand for human labour due to AI.

Related steps

❖ Flexible inflation targeting has generally been successful globally by anchoring inflation expectations and improving credibility.
❖ **India's Experience:** Since adopting inflation targeting in 2015, India has seen more stable inflation, although challenges remain.\
    ✓ India is experiencing robust GDP growth, contributing significantly to global growth.

Suggestions and Way Forward

❖ Encouraging corporate investment and flexible labour markets can aid broad-based growth and job creation.
❖ Improving ease of doing business and reducing trade restrictions are vital.
❖ Focus on education, skilling, and raising productivity in agriculture is essential for long-term growth.
❖ Improving macroeconomic and financial stability, and currency convertibility, benefits countries regardless of whether their currency becomes dominant.
❖ With continued reforms, India could sustain and possibly enhance its growth, but job creation is crucial.
    ✓ India needs to create 60 to 148 million new jobs by 2030, requiring broad-based growth across sectors.

MECHANISATION OF INDIAN FARMING SECTOR

Context: Recent replies in Parliament showed that the overall average mechanisation level for crops stands at 47%, and it will take another 25 years to reach 75-80% mechanisation in India.

About Farm Mechanisation in India

❖ Farm mechanisation refers to the adoption of machinery and technology in various agricultural operations. It plays a pivotal role in enhancing productivity, reducing manual labour, and ensuring timely and efficient farm practices.
❖ In India, where agriculture remains a backbone of the economy, mechanisation becomes even more critical.

Current Scenario

Operation-wise average mechanisation levels
(in %)

70	40	32	34	47
Seed-bed preparation	Sowing, planting, transplanting	Weeding, inter-culture and plant protection	Harvesting and threshing	Overall average

❖ **Overall Mechanisation Level:** The available data for major crops—such as rice, wheat, maize, sorghum, millets, pulses, oilseeds, cotton, and sugarcane—paints a picture of 47% overall mechanisation.

❖ While states like Uttar Pradesh, Haryana, and Punjab have relatively high mechanisation levels, the northeastern states lag behind significantly.

Crop-Specific Insights

❖ **Wheat:** Leading the pack, wheat achieves 69% mechanisation.

❖ **Rice:** Not far behind, rice clocks in at 53% mechanisation.

❖ **Others:** Maize (46%), pulses (41%), oilseeds (39%), cotton (36%), and sugarcane (35%) are still catching up. .

Automating agriculture
Crop-wise farm mechanisation
(in %)

	Seed-bed preparation	Sowing, planting, transplanting	Weeding, inter-culture and plant protection	Harvesting and threshing	Crop-wise average
Rice	80	35	35	60	53
Wheat	85	65	50	75	69
Maize	70	45	40	30	46
Sorghum and millets	60	30	20	20	33
Pulses	65	40	25	35	41
Oilseed	65	40	20	30	39
Cotton	70	40	35	0	36
Sugarcane	65	25	30	20	35

❖ **Sorghum and Millets:** These crops lag at 33% mechanisation.

Key Areas of Mechanisation

❖ **Seed-Bed Preparation:** This operation is highly mechanised (over 70%) for major crops like rice and wheat. Proper seedbed preparation ensures optimal soil conditions for planting.
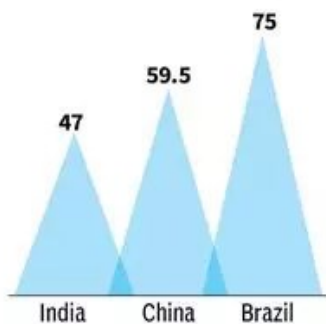
- ❖ **Sowing and Planting:** Mechanisation levels vary, with wheat sowing being the most mechanised. Sugarcane and rice transplanting still rely significantly on manual labour.
  - o At 40%, there's room for improvement.
- ❖ Weeding and Inter-Culture: Currently mechanised to 32%.
- ❖ Harvesting and Threshing: This critical phase stands at 34% mechanisation.
  - o Surprisingly, this area remains the least mechanised for most crops, except rice and wheat. Rice and wheat harvesting see mechanisation levels of over 60%, while cotton lags behind.

Global Comparisons

- ❖ **United States:** The U.S. leads the way with a mechanisation level of 95%. Advanced technologies, precision agriculture, and large-scale farming contribute to this impressive figure.
- ❖ **Brazil:** Brazil stands at 75% mechanisation. Its vast agricultural expanses, especially in soybean and sugarcane cultivation, benefit from modern machinery.
- ❖ **China:** China, with 59.5% mechanisation, has made significant strides. Its focus on rice and wheat production, along with government support, drives mechanisation efforts.
  - o India's overall mechanisation level lags behind countries like China (59.5%) and Brazil (75%).

India vs other developing nations
Farm mechanisation level (in %)

India: 47, China: 59.5, Brazil: 75

Advantages
- Saves 15-20% on seeds and fertilizers
- Improves seed germination by 7-25%
- Reduces time spent by 20-30%
- Cuts weed levels by 20-40%
- Lowers labour requirement by 20-30%
- Increases the number of crops grown per year by 5-20%
- Boosts crop yields by 13-23%

Source: Parliament answers; Parliamentary standing committee on agriculture

- ❖ While India's farm mechanisation industry is valued at around ₹9,200 crores (as of 2022), the global industry stands at approximately $100 billion. India aims to grow its share to ₹15,000 crores by 2026.

Factors at Play

- ❖ **Socio-Economic Conditions:** Different economic realities influence farmers' choices.
- ❖ **Geographical Factors:** Terrain, climate, and soil type impact the feasibility of mechanisation.
- ❖ **Crop Diversity**: Different crops have unique requirements.
- ❖ **Irrigation Facilities:** Availability of water plays a role.

Benefits of Mechanisation

- ❖ **Cost Savings:** Farmers save 15-20% on seeds and fertilisers.
- ❖ **Improved Germination:** Mechanization boosts seed germination by 7-25%.
- ❖ **Time Efficiency:** It saves 20-30% of farmers' time.
- ❖ **Small and Marginal Farmers:** With 86% of farmers owning less than 2 hectares, tailored machinery for small holdings is crucial.

Challenges

- ❖ **Skills Gap:** Many farmers lack awareness about modern technology and machinery management.
- ❖ **Small Landholdings:** India has a large number of small and marginal farmers, making individual ownership of expensive machinery economically challenging.

❖ **Rainfed Agriculture:** Half of India's arable land depends on rainfed agriculture, which requires tailored mechanisation solutions.

Related Government Initiatives

❖ Sub-Mission on Agricultural Mechanisation (SMAM): Launched in 2014-15, this centrally sponsored scheme aims to promote farm mechanisation. It provides financial assistance for purchasing agricultural machines, establishing Custom Hiring Centres (CHCs), and setting up Farm Machinery Banks (FMBs).

  o Components of SMAM include Hubs for Hi-tech & High-value Farm Equipment, Awareness and Skill Development, and Quality Assurance along with the CHCs, and FMBs.

  o From 2014-15 to 2020-21, over ₹4,556.93 crores have been released under SMAM, resulting in the establishment of more than 27,500 Custom Hiring Institutions and distribution of over 13 lakh agricultural machines.

❖ **Make in India:** The government encourages domestic manufacturers to produce agricultural machinery through research and development support, skill development, and simplified rules for testing.

  o Preference is given to domestically manufactured products in public procurement, fostering a level playing field for Indian manufacturers.

State-Specific Initiatives

❖ States like Rajasthan and Karnataka have also taken steps to promote farm mechanisation. For instance:

❖ **Rajasthan:** The state budget includes an agri-tech mission that provides subsidies for various types of equipment, benefiting small and marginal farmers and women farmers.

❖ **Karnataka:** The state aims to establish 100 Harvester Hubs and invest in farm mechanisation projects under the Krishi Bhagya scheme.

  o Karnataka emphasises the importance of scientific farming and integrated farming systems to improve farmers' income.

What more to be done for achieving 75-80% Farm Mechanisation in India?

❖ Financial Support and Incentives: Offering subsidies or financial incentives for purchasing agricultural machinery encourages adoption. Governments can provide targeted support for small and marginal farmers.

❖ Indigenous Solutions: Encouraging research and development for locally relevant machinery is essential.

  o 'Make in India' initiatives should focus on creating equipment suited to Indian soil conditions, crop types, and farm sizes.

❖ **Precision Farming Technologies:** Investing in precision agriculture technologies (such as GPS-guided tractors, drones, and sensor-based systems) can optimise resource use and improve yields.

Infrastructure Development

❖ **Rural Roads and Connectivity:** Improved rural infrastructure ensures smooth transportation of machinery to farms.

❖ **Electricity Access:** Reliable electricity supply is critical for running electric-powered machinery. Promoting solar-powered solutions can address energy challenges.

Collaboration with Private Sector

❖ **Industry Partnerships:** Collaborating with private companies, especially farm equipment manufacturers, can accelerate innovation and technology adoption.

  o Mahindra & Mahindra emphasises the importance of automation technologies, including self-driven tractors, can reduce manual interventions, enhance productivity, and minimise costs for farmers.

- o Mahindra's recent OJA tractor range incorporates cutting-edge technologies to empower smaller farmers.
- ❖ **Start-ups and Agri-Tech Companies**: Supporting start-ups that focus on mechanisation and precision farming can drive technological advancements.

Customisation for Small Landholdings

- ❖ **Small and Marginal Farmers:** Given that a majority of Indian farmers have small landholdings, customised solutions (e.g., mini tractors, small-scale implements) are essential. Cooperative models for machinery sharing can be explored.
- ❖ **Affordable Technology:** Developing cost-effective machinery suitable for small plots is crucial.

Policy Reforms

- ❖ **Trade Policies:** Ensuring import restrictions on low-quality machinery while promoting domestic manufacturing.
- ❖ **Incentivising Research:** Tax breaks and grants for companies investing in R&D for farm equipment.

Promotion of Agri-Entrepreneurship

- ❖ **Young Entrepreneurs:** Encouraging youth to venture into agri-mechanisation services can create a network of service providers.
- ❖ **Skill Development Institutes:** Establishing institutes that train technicians in farm machinery repair and maintenance.

Monitoring and Evaluation

- ❖ **Performance Assessment:** Regularly evaluating the impact of mechanisation programs helps identify gaps and refine strategies.
- ❖ **Data-Driven Approaches**: Using data analytics to understand adoption rates, challenges, and success stories.

Conclusion

- ❖ Farm mechanisation is not just about replacing human labour; it's about bridging efficiency gaps, ensuring food security, and sustaining livelihoods. As India continues its agricultural journey, smart mechanisation will play a pivotal role in shaping a prosperous and resilient farming sector.

PLANNING FOR SUSTAINABLE MASS EMPLOYMENT

Context: The recent Union Budget unveiled five major employment-related schemes with an ambitious ₹2 lakh crore outlay spread over five years, aimed to facilitate jobs, skilling, and other opportunities for 4.1 crore youth, and these need policy initiatives for meaningful employment opportunities.

About

- ❖ In recent years, the issue of unemployment has gained prominence globally. Governments, policymakers, and economists grapple with finding sustainable solutions to create jobs and ensure economic stability.
- ❖ In India, this challenge is particularly acute, given our large and diverse population.

Recent Employment Package

- ❖ In response to the jobs crisis, the current Finance Minister announced a five-scheme package. One of these schemes aims to incentivise corporates to hire 1 crore interns over the next five years.
- ❖ However, the design of this scheme has raised concerns. It limits participation to the top 500 companies, excluding micro, small, and medium enterprises (MSMEs).

❖ Given that MSMEs form a significant part of our economy, this exclusion seems counterproductive.

Flaws in Announcements

❖ One key flaw with annual budget announcements is that they often lead to grand headlines but lack effective implementation. Finance Ministers make promises—whether related to disinvestment targets or employment schemes—but the follow-through often falls short.
  ✓ For instance, disinvestment targets rarely materialise as planned, and employment-related announcements face similar hurdles.
❖ Moreover, the scale of the announced internship program—each company taking on an average of 4,000 interns annually—appears unrealistic.
❖ With automation and artificial intelligence making some positions redundant, expecting companies to double or triple their workforce in the short run seems ambitious.

Recognising the Wage Challenge

❖ In the pursuit of sustainable mass employment, it needs to acknowledge the existing race to the bottom on wages first. India has an abundance of unskilled workers, which often leads to suppressed wages.
❖ The Periodic Labour Force Survey of 2019-20 revealed that a wage earner falls within the top 10% if they earn ₹25,000 per month. It highlights the need to uplift wages and ensure dignified livelihoods for all.

Skilling and Placement Challenges

❖ Short-duration skill programs often suffer from low long-term placements. Part of this issue lies in the low wages offered, which make it challenging for individuals to maintain a life of dignity in urban areas.
❖ Many end up returning to their villages in search of alternative livelihoods.

Education, Skills, and Consumption

❖ States with better human development indicators tend to have higher monthly per capita consumption.
❖ Tamil Nadu, Kerala, Himachal Pradesh, Goa, and Sikkim fall into this category. Odisha, despite pushing short-duration skilling, faces low per capita consumption due to a lack of robust higher secondary, higher education, and vocational opportunities.

Role of the State

❖ While urging the private sector to create jobs is essential, the state also plays a critical role. Determining the floor rate of wages and ensuring high-quality public goods are responsibilities that impact mass employment with dignity.
❖ Interestingly, India's public employment per unit of population remains lower than that of most developed countries.

Key Policy Initiatives

❖ **Decentralised Community Action:** Begin by identifying skilling needs through community involvement. Gram sabhas (village councils) and basti samitis (urban neighbourhood committees) can play a crucial role in taking government programs directly to the people.
❖ **State Role in Wage Determination:** While urging the private sector to create jobs, the state should also play a role in setting minimum wages and ensuring high-quality public goods.
❖ **Productivity Enhancement:** Encourage productivity gains through targeted interventions and investments.

- ❖ **Public Employment:** India's public employment per unit of population is lower than in most developed countries. Exploring avenues for increased public employment can contribute to sustainable mass employment.
- ❖ **Focusing on Youth:** Create a register of all individuals seeking employment or self-employment. Develop personalised plans for each youth in partnership with professionals at the cluster level.

Green Jobs and Beyond

- ❖ Additionally, the concept of 'green jobs' is gaining traction. Industries related to sustainable finance, clean energy, and environmental conservation are creating employment opportunities.
  - ✓ For instance, green building professionals, energy managers, and smart city planners are in demand.

Related Government Initiatives

- ❖ **Infrastructure Investments:** The focus on roads, railways, airports, ports, mass transport, waterways, and logistics infrastructure creates job opportunities.
- ❖ **Aatmanirbhar Bharat Rojgar Yojana (ABRY):** Launched in 2020, this scheme incentivises employers to create new jobs and restore lost employment during the pandemic.
- ❖ **Digital Platforms and Manufacturing:** Expanding public digital platforms and boosting manufacturing output contribute to economic growth and employment.

Way Forward: Need for Comprehensive Solutions

- ❖ Creating employment in the long run is a topic of immense importance, especially given the challenges posed by economic shifts, technological advancements, and demographic changes.
- ❖ **Demand-Side Measures:** Rather than relying solely on supply-side measures, we need to address the demand for goods and services. A robust economy generates jobs naturally. Policies that stimulate consumer spending and business investment play a crucial role.
- ❖ **Skill Development:** Upskilling and reskilling are essential. As technology evolves, workers must adapt. Government initiatives should focus on enhancing employability through vocational training and lifelong learning.
- ❖ **Support for MSMEs:** MSMEs are the backbone of our economy. Encouraging their growth and providing them with resources—financial, technological, and managerial—can lead to substantial job creation.
- ❖ **Labour Reforms:** Ensuring acceptable working conditions, reasonable hours, fair wages, and safety measures is vital. Labour laws need to strike a balance between worker rights and business viability.
- ❖ **Investment in Essential Public Services:** Rather than relying solely on nudges, the government should consider a comprehensive economic package. Long-term investments in critical sectors like healthcare, education, and infrastructure can create jobs and improve overall well-being.

Conclusion

- ❖ Addressing the employment challenge requires a multifaceted approach—one that combines policy innovation, private sector participation, and a commitment to long-term growth.
- ❖ Sustainable mass employment requires a multifaceted approach, involving community engagement, skill development, and supportive policies.
- ❖ Achieving sustainable mass employment requires addressing wage disparities, improving skilling programs, and recognizing the state's role in ensuring dignified work opportunities.

WHAT IS THE DEMOGRAPHIC TRANSITION AND DEMOGRAPHIC DIVIDEND?

Context: The proportion of older persons in the total population will increase from 6 percent in 2011 to 20.8 percent in 2050.

❖ A demographic shift refers to a change in the composition of a population over time.
❖ This change can occur due to various factors such as changes in birth and death rates, migration patterns, and changes in social and economic conditions.
❖ A demographic dividend is a phenomenon that occurs when a country's population structure shifts from having a high proportion of dependents (children and elderly) to having a higher proportion of working-age adults.
❖ This change in population structure can result in economic growth and development if the country invests in its human capital and creates conditions for productive employment.

Demographic changes in India:
❖ In 1941, male life expectancy was about 56 years; only 50% of boys survived to age 28.
    ✓ Today, life expectancy for men is 69 years, and nearly 50% live to see the ripe old age of 75.
❖ Total Fertility Rate fell from 7(five point seven) in 1950 to 2.1(two point one)in 2019.
❖ With four children: The chance of not having a son was barely 6%, but with two children, it grew to 25%.
    ✓ Social norms and patrilocal kinship patterns combined with lack of financial security reinforce a preference for sons.
❖ The India Human Development Survey (IHDS) found that:
    ✓ 85% of women respondents expected to rely on their sons for old age support
    ✓ 11% expected support from their daughters.
❖ Parents who want to ensure that they have at least one son among their one or two child families, resorted to sex-selective abortion, and, in some cases, the neglect of sick daughters.
❖ The number of girls per 100 boys, ages under five dropped from 96 to 91 between 1950 and 2019.

Demographic distribution:
❖ Most states in the southern region and select northern states such as Himachal Pradesh and Punjab reported a higher share of elderly population than the national average in 2021.
    ✓ This gap is expected to widen by 2036.
❖ **East and South Asian societies:** rapidity of ageing compared to the experience of Western countries.
❖ The magnitude of the increase in the proportion of older persons witnessed over a hundred years in the West has occurred in a mere 20-30 years in South and East Asia.

Challenges associated with increasing elderly population(middle and low-middle-income countries)
❖ Inadequate social protection for the elderly, including pensions, access to health and social-care services.
❖ Rapid changes in family structures, with the spread of nuclear families,

Steps taken by East Asian countries:
❖ They have integrated health and social care through financial investments, including a variety of insurance schemes
❖ They have strengthened these institutions at the community level.

Challenges for India:

- ❖ Unlike the East and South East Asian countries, India does not have a universal public pension scheme, health insurance or social-care provisioning
- ❖ India has some health insurance and social welfare schemes targeted only at older persons below the poverty line.
- ❖ Available macro data and a few micro studies highlight inequalities in the availability, accessibility, affordability and acceptability of the services and support needed by older persons.
- ❖ Access to government health insurance like the Ayushman Bharat Programme is seen as being limited to those below the poverty line.
- ❖ Government insurance programmes like the Central Government Health Scheme (CGHS) or the Employment State Insurance Scheme (ESIS) cover only government employees and those in the organized sector.
- ❖ Older persons face difficulties in claiming insurance due to long processing times, claim deductions and rejections.

What steps need to be taken?

- ❖ Assess the supply side in terms of social protection, insurance schemes, and health and social-care institutions.
- ❖ Given the fractured landscape of financing and provisioning of the required services.
  - ✓ Define the ecosystem of care and then offer a guide to policy planning.

Different surveys:

- ❖ **Longitudinal Ageing Survey in India (LASI):** Those above 60 years suffer from multiple morbidities due to non-communicable diseases that include diabetes, hypertension and cardiovascular conditions.
  - ✓ It highlights the variations in the social determinants of the health and well-being of older persons.
  - ✓ Geographical location, class, caste and gender, work and pensions are important determinants for perceived quality of life.
  - ✓ A large proportion of older persons, especially those who continue to work and that too in the unorganized sector, are ineligible for pension or other forms of income support.
- ❖ **The Helpage India Report 2024, 'Ageing in India:** Exploring Preparedness and Response to Care Challenges': It carried out across 10 states and 20 cities
  - ✓ It highlights the gaps in access to financial security, health and social care.
  - ✓ The cross-sectional survey covered Tier I and Tier II cities.
  - ✓ Its findings highlight the poor coverage of social pensions, which were largely skewed to the middle classes in government service.
  - ✓ Older persons reportedly felt financially insecure and were dependent on their family members for support.
- ❖ Both the LASI survey and the Helpage India Report highlight the burden of multiple morbidities due to one or more Non-Communicable Diseases (NCDs).

Way Forward

- ❖ As the disease burden increases with age, the ability to manage activities of daily living reduces.
  - ✓ The elderly require both physical and emotional support that is mostly provided by family members.
  - ✓ Given the changes in family structure in urban areas, the stress of caregiving falls on women in the household.

- ✓ In households where adult children have migrated for work, older persons often live on their own.
- ❖ Institutional support outside the realm of family and home-based care, in the form of retirement communities and long-term and end-of-life care, is poorly developed in India in the public, private and non-profit sectors.
- ❖ The upper-middle class and the rich are able to access the newly emerging retirement communities that provide a range of services for health and social care.
    - ✓ The problem is acute for the lower-middle class and the urban and rural poor.
- ❖ Public policy must unpackage the multiple axes of inequalities in access to financial security, health and social care of older persons.
- ❖ As India becomes an aging society there are significant gaps in access to pensions, health services and social care for older persons that need to be addressed.
- ❖ As the country seeks to encash the "demographic dividend" it must pay attention to healthy ageing.

INDIA'S ETHANOL BLENDED PETROL (EBP) PROGRAMME

Context: India is on its way to achieve its target of blending 20% of petrol with ethanol by 2025-26.

- ❖ 20% by 2025-26 would mean producing some 1,000 crore litres of ethanol for blending with petrol.
- ❖ Taking stock in December 2023, India's ethanol production capacity had already increased to 1,380 crore litres — some 875 crore litres capacity from sugarcane and 505 crore from foodgrains.
    - ✓ This means the targeted total ethanol capacity is nearly achieved although with a greater sugarcane-based component.
- ❖ Government policy is that maize as well as surplus rice and damaged grains will be used to feed grain-based distilleries.

Ethanol

- ❖ Ethanol, an anhydrous ethyl alcohol having chemical formula of C_2H_5OH, can be produced from sugarcane, maize, wheat, etc which are having high starch content.
- ❖ In India, ethanol is mainly produced from sugarcane molasses by fermentation process.
- ❖ It can be mixed with gasoline to form different blends.

Ethanol Blending

- ❖ Ethanol blending refers to the practice of mixing ethanol with gasoline to create a fuel mixture that can be used in internal combustion engines.
- ❖ There are a few common blends:
    - ✓ **E10:** This is a mixture of 10% ethanol and 90% gasoline. It is the most common blend and is used widely in many countries.
    - ✓ **E15:** This blend contains 15% ethanol and 85% gasoline.
    - ✓ **E85:** This is a high-ethanol blend, consisting of 85% ethanol and 15% gasoline. It's used in flex-fuel vehicles designed to run on higher ethanol content.
- ❖ **Significance:** As the ethanol molecule contains oxygen, it allows the engine to more completely combust the fuel, resulting in fewer emissions and thereby reducing the occurrence of environmental pollution.
    - ✓ Since ethanol is produced from plants that harness the power of the sun, ethanol is also considered as renewable fuel.

India's Ethanol Blending Program

- ❖ The Ethanol Blended Petrol (EBP) programme was launched in 2003.
    - ✓ The programme sought to promote the use of alternative and environment friendly fuels and to reduce import dependency for energy requirements.
- ❖ **Objectives**
    - ✓ **Reduce Import Dependence:** India aims to decrease its reliance on imported crude oil, thereby improving energy security.
    - ✓ **Environmental Benefits:** Ethanol is a cleaner-burning fuel compared to gasoline, which helps in reducing air pollution and greenhouse gas emissions.
    - ✓ **Support for Farmers:** The program supports the agricultural sector by providing a market for ethanol, which is often derived from sugarcane, corn, or other crops.
- ❖ **Key Components**
    - ✓ **Blending Targets:** India has set specific targets for ethanol blending. For instance, the National Policy on Biofuels (2018) outlines a target of 20% ethanol blending in petrol by 2025.
    - ✓ **Phased Implementation:** The blending targets are being rolled out in phases. Initially, the focus was on achieving a 10% ethanol blend (E10) by 2022, and the program is gradually moving towards higher blends like E20.
    - ✓ **Infrastructure Development**: The government has been investing in the infrastructure necessary for ethanol production, storage, and distribution, including establishing more ethanol production facilities and blending units.
    - ✓ **Incentives and Support:** Various financial incentives and support mechanisms are provided to encourage ethanol production and blending. This includes subsidies for ethanol producers and incentives for upgrading infrastructure.

Challenges

- ❖ **Infrastructure:** Developing the necessary infrastructure for large-scale ethanol production and blending can be complex and costly.
- ❖ **Feedstock Availability:** Ensuring a steady and adequate supply of raw materials for ethanol production, such as sugarcane, can be challenging, especially in the face of changing agricultural conditions and market fluctuations.
- ❖ **Consumer Acceptance:** Educating consumers and ensuring that vehicles can run efficiently on higher ethanol blends are also important for the program's success.

Conclusion

- ❖ India's Ethanol Blending Program is a significant step towards a more sustainable and self-reliant energy future, aligning with broader goals of environmental protection and energy independence.

NEED FOR A NEW INDUSTRIAL POLICY IN INDIA

Context: In recent years, there has been a resurgence of interest in industrial policy—a topic that often walks a tightrope between government intervention and market forces. India, like many other countries, is grappling with the need for a fresh approach to industrial policy—one that can facilitate sustained economic growth and transform the nation into a global manufacturing hub.

India's Historical Industrial Policies

- ❖ **Licence-Permit Raj Era:** Post-Independence, India's industrial policy was characterised by what became infamously known as the 'License-Permit Raj'.

- ❖ The Industries (Development and Regulation) Act of 1951 mandated government approval for every industrial decision, resulting in excessive bureaucracy.
- ❖ The Monopolies and Restrictive Trade Practices (MRTP) Act of 1969 and the Foreign Exchange Regulation Act (FERA) of 1973 further restricted growth and isolated Indian industries from global competition.
    - ✓ Unfortunately, these policies stifled innovation and hindered progress.
- ❖ On the other hand, laissez-faire approaches left gaps in addressing market failures and public goods provision, resulted in inefficiency and stifled innovation.

Shift Towards Liberalisation

- ❖ The 1980s marked a shift towards liberalisation, and the landmark reforms of 1991 dismantled barriers like industrial licensing and reduced import tariffs.
    - ✓ These changes aimed to boost efficiency and encourage private investment.
- ❖ However, India's manufacturing sector still faced challenges related to infrastructure, labour laws, and regulatory complexities.

Need for a New Industrial Policy

- ❖ Industrial Policies are conceptualises as policies and government interventions specifically designed to alter the composition of economic activities in pursuit of predetermined public objectives.
- ❖ These objectives typically encompass enhancing innovation, increasing productivity, and fostering economic growth.
- ❖ However, they may also extend to objectives such as facilitating the climate transition, improving labour market outcomes, reducing regional disparities and expanding export capacity.
- ❖ A defining feature of industrial policy is its inherent selectivity, wherein policy makers exercise allocative discretion — strategically prioritising certain sectors or industries over others to induce structural transformation, albeit with the implicit trade-off that some sectors may be de-prioritised.

Role of Industrial Policy

- ❖ **Strategic Interventions:** Industrial policies should be purposeful. Governments can strategically intervene to correct market failures, promote innovation, and guide resource allocation.
- ❖ **Balancing Act**: It's about finding the sweet spot—enough regulation to address inefficiencies but not so much that it stifles growth. Economic progress must not be sacrificed.
- ❖ **Public Objectives:** Industrial policies can target specific sectors, such as automakers, energy companies, or semiconductor manufacturers. These policies may create new costs or provide incentives for R&D and manufacturing investments.

Key Features of the New Industrial Policy

- ❖ **Make in India**: The policy aims to transform India into a manufacturing hub by promoting domestic production and attracting foreign investment. It encourages industries to set up manufacturing units within the country.
- ❖ **Smart Technologies**: The new policy incorporates modern technologies like the Internet of Things (IoT), artificial intelligence (AI), and robotics. These technologies enhance productivity and competitiveness in manufacturing.
- ❖ **Ease of Doing Business:** Simplifying regulatory processes and reducing bureaucratic hurdles are essential components. Streamlining approvals and licences can attract more investment.
- ❖ **Sectoral Missions:** Initiatives like the Semiconductor Mission and Gati Shakti focus on specific sectors, fostering growth and innovation.

Related Concerns

❖ **Global Trends and Shift:** Worldwide, there's a rethinking of market-driven approaches, because of technological disruption, economic stagnation, and geopolitical competition.

❖ **China's Rise:** China's rapid industrialisation has prompted both admiration and concern. As it becomes a global manufacturing powerhouse, other countries are reevaluating their own strategies.

❖ **Technological Changes:** Automation, digitalisation, and Industry 4.0 underscore the need for government involvement. Industrial policies can shape economic activities, enhance innovation, and boost productivity.

❖ **Weak Manufacturing Base:** Countries worldwide recognise that a robust manufacturing sector is crucial for sustained economic growth. No major economy has achieved poverty reduction or long-term prosperity without a strong manufacturing base.

   ✓ India's recent manufacturing push, including initiatives like 'Make in India' aligns with global trends.

   ✓ While the Production Linked Incentive (PLI) scheme is often seen as an industrial policy, it primarily offers financial incentives to boost manufacturing in specific sectors and does not fully address the broader structural challenges needed to transform India into a global manufacturing hub.

❖ **Declining Manufacturing Employment:** Advanced economies are grappling with this challenge. They seek ways to maintain competitiveness and create jobs.

❖ **Challenges Faced By Fourth Industrial Revolution:** India's new industrial policy acknowledges the challenges and opportunities posed by the Fourth Industrial Revolution.

   ✓ It aims to position India as a global leader in emerging technologies such as artificial intelligence, blockchain, and drones.

   ✓ The policy emphasises ease of doing business, production-linked incentives, and sectoral missions. By leveraging digital technology, India aims to leapfrog into the global supply chain.

Do You Know About Washington Consensus

❖ It emerged as a set of economic policy prescriptions promoted primarily by institutions based in Washington, D.C., including the International Monetary Fund (IMF), the World Bank, and the United States Department of the Treasury.

❖ It was first introduced in 1989 by economist John Williamson and laid out Ten Broad Policy recommendations (Decalogue of Consensus Policies) that constituted this "standard" reform package that were meant for crisis-hit developing countries, aiming to guide their economic recovery and growth.

It includes:

1. Fiscal Policy Discipline: Keep those fiscal deficits in check relative to your GDP.

2. Redirect Public Spending: Move away from indiscriminate subsidies and focus on essential services like primary education, healthcare, and infrastructure.

3. Trade Liberalisation: Open up your markets, embrace global trade, and let those goods flow.

4. Privatisation: Sell off state-owned enterprises and let private hands manage them.

5. Financial Liberalisation: Free up your financial markets—let capital flow, but keep an eye on stability.

6. Monetary Policy: Tame inflation, stabilise your currency, and keep the money supply in check.

Conclusion and Way Forward

❖ India's industrial policy is no longer trapped in the maze of bureaucracy. Instead, it seeks a balanced approach—enough regulatory nudge to correct market failures while allowing businesses to thrive.

❖ As India continues its journey toward economic transformation, a dynamic and forward-looking industrial policy remains crucial.

A well-crafted industrial policy—one that balances pragmatism with ambition—can propel India forward.

E-COMMERCE IN INDIA: A MATTER OF CONCERN?

Context: Recently, the Union Trade Minister stirred up debate on India's e-commerce sector, instead of celebrating its exponential growth, he expressed concern.

About status of the e-commerce market in India

❖ India, with its rapidly growing digital economy and expanding internet user base, is on the brink of a massive transformation in its retail sector.

❖ At present, the e-commerce market in India is valued at $70 billion, which accounts for around 7% of the nation's overall retail market.It is predicted to grow to a staggering $325 billion, and the country's digital economy is expected to reach $800 billion.

❖ The number of online shoppers in India is projected to increase with a compound annual growth rate (CAGR) of 22% to 88 million in rural India and 15% to 263 million across urban India between 2019 and 2026.

❖ It is expected to lead to India surpassing the US as the second largest online shopper base in one to two years.

Factors Driving Rise of the E-commerce

❖ India currently boasts the second-largest internet user base in the world, with over 900 million users.

❖ By 2030, it is expected to rise to the third position in the online retail industry.

❖ This growth is driven by increasing internet penetration, with around 87% of Indian households expected to have internet connections by 2025.

❖ The duration of internet access through mobiles has seen a 21% rise compared to 2019.

❖ Indian consumers with annual incomes ranging from INR 2.5 lakh to INR 10 lakh will be responsible for driving nearly half of the growth in India's $300 billion e-commerce market by 2030.

❖ The growth of e-commerce in India has been done by the advancement of efficient logistics and supply chain networks. Government initiatives, like the National Logistics Policy, have streamlined last-mile deliveries, significantly improving logistical efficiency and cost-effectiveness.

❖ E-commerce offers consumers the ease of shopping from their homes or on the go, saving both time and effort. For example, food delivery platforms like Zomato and Swiggy have become incredibly popular due to this convenience.

❖ Invest India predicted a significant increase in the number of households engaging in e-commerce transactions, from 60-70 million in 2022 to 120-130 million by 2030.

Challenges associated with e-commerce market in India

❖ **Platform Neutrality and Fairness:** There are concerns about lack of platform neutrality, unfair platform-to-business contract terms, exclusive contracts between online marketplace platforms and sellers/service providers, platform price parity restrictions, and deep discounts.

- ❖ **Taxation:** The provisions on carry-forward of losses need to be more accommodative of business restructuring, and withholding tax norms need more clarity.
- ❖ **Inclusion of Small and Medium Enterprises (SMEs):** SMEs often find it challenging to participate in the e-commerce ecosystem due to the need for separate infrastructures for different platforms, distinct terms and conditions of each platform, and the costs associated with these.
- ❖ **Digital Infrastructure and Internet Penetration:** The robustness of digital infrastructure is crucial for smooth and seamless online transactions.
  - ✓ Any disruption in the digital infrastructure can lead to transaction failures, affecting the trust and confidence of consumers in e-commerce.
  - ✓ While internet penetration is increasing in India, there is still a significant portion of the population, particularly in rural areas, that does not have access to the internet.
- ❖ **Regulatory Challenges:** E-commerce businesses in India also face regulatory challenges including issues related to data protection, consumer protection, taxation, and other legal and regulatory compliances.

Related Initiatives to Overcome Challenges

- ❖ Policy Support: 100% FDI is allowed in B2B e-commerce.
  - ✓ 100% FDI under the automatic route is permitted in the marketplace model of E-commerce.
- ❖ **Government e-Marketplace (GeM):** It has facilitated government procurement, crossing an impressive INR 4 Lakh Cr in GMV.
- ❖ **Open Network for Digital Commerce (ONDC):** It aims to provide equal opportunities to MSMEs to thrive in digital commerce and democratise e-commerce.
- ❖ Other major initiatives include Digital India (to transform India into a digitally empowered society and knowledge economy), Skill India (to train people in different skills), Startup India (to build a strong ecosystem for nurturing innovation and startups in the country), Make in India (to encourage companies to manufacture their products in India), Innovation Fund (aimed at encouraging entrepreneurship and innovation in the country), and BharatNet (to grow rural broadband penetration) etc.

Way Forward (Policy Shift: Striking a Balance)

- ❖ **Stricter Regulations:** The government is contemplating stricter regulations for e-commerce players. While growth is fantastic, it shouldn't come at the cost of the well-being of others. There is a need to balance growth with consumer safety.
- ❖ **Fair Play and Transparency:** The Union Trade Minister wants foreign direct investment (FDI) and technology to thrive but insists on honesty and transparency. Both online and offline businesses should play by the same rules.
  - ✓ It's about finding that sweet spot where progress doesn't compromise our health and social fabric.

Conclusion

- ❖ The rapid growth of India's digital economy, coupled with the increasing internet penetration and the rise of the mass consumer segment, is set to propel India to become the world's third-largest ecommerce market by 2030.
- ❖ It presents a tremendous opportunity for businesses and investors alike, making India one of the most attractive markets for ecommerce in the world.

CONTRIBUTION OF SPACE SECTOR TO INDIA'S GDP

Context: India's space sector has directly contributed about $24 billion (₹20,000 crore) to India's Gross Domestic Product over the last decade.

Space Sector of India

❖ India's space sector has benefitted from decades of consistent investment, with $13 billion invested in the last decade.
  ✓ It is the 8th largest space economy (in terms of funding) in the world.
❖ In the recently announced Union Budget for 2024-25, India's space sector received a significant boost.
❖ The Central government allocated ₹13,042.75 crore to support space-related initiatives.

Contribution of Space Sector to India's GDP

❖ The Sector has supported 96,000 jobs in the public and private sector.
❖ For every dollar produced by the space sector, there was a multiplier effect of $2.54 to the Indian economy and India's space force was 2.5 times more productive than the country's broader industrial workforce.
❖ The Indian space sector was diversifying and now had 700 companies including 200 start-ups and had seen revenues grow to $6.3 billion in 2023, which was about 1.5% of the global space market.
❖ Satellite communications contributed 54% to the space economy, followed by navigation (26%) and launches (11%).
  ✓ The main industries supported by the space sector were telecom (25%), information technology (10%) and administrative services (7%).

FDI in space sector

❖ Under the amended FDI policy, 100% FDI is allowed in the space sector. The entry route for the various activities are as follows:
  ✓ **Up to 74% under Automatic route:** Satellites-Manufacturing & Operation, Satellite Data Products and Ground Segment & User Segment.
  ✓ **Up to 49% under Automatic route:** Launch Vehicles and associated systems or subsystems, Creation of Spaceports for launching and receiving Spacecraft.
  ✓ **Up to 100% under Automatic route:** Manufacturing of components and systems/ sub-systems for satellites, ground segment and user segment.

Potential of Space Sector

❖ **Export Potential and Investment:** Currently, India's export market share in space-related services stands at ₹2,400 crore (about $0.3 billion). The goal is to boost this to ₹88,000 crore ($11 billion).
❖ **Rise of Space Tourism:** In 2023, the space tourism market was valued at $848.28 million.
  ✓ It is expected to grow to $27,861.99 million by 2032.

Challenges in India's Space Sector

❖ **Competition and Global Market Share**: To achieve this ambitious goal of 8% of the global market share, Indian space companies must compete effectively on the international stage.
❖ **Private Sector Participation:** While the private sector has shown interest, there's a need for more substantial investment and commitment.
❖ **Technology Development and Innovation:** Developing cutting-edge technologies, such as reusable launch vehicles, miniaturized satellites, and advanced propulsion systems, requires substantial investment and research.
❖ **Regulatory Framework and Licensing:** Navigating licensing processes, export controls, and compliance can be complex.

❖ **Infrastructure and Facilities:** Developing and maintaining such infrastructure requires significant capital.

Major Reforms In Space Sector of India

❖ **Indian Space Policy 2023:** It laid down roles and responsibilities of organizations such as ISRO, New Space India Limited (NSIL) and private sector entities.
  ✓ It aims to enhance the participation of research, academia, startups and industry.
❖ **Strategic Proposals by SIA:** The Space Industry Association – India (SIA-India) in its Pre-Budget Memorandum for the FY 2024-25 has proposed a substantial increase in India's space budget.
  ✓ It aims to support India's expanding space program, foster private sector involvement, drive technological advancements, and position the nation as a key player in the dynamic global space ecosystem.

Way Ahead

❖ India aims to commission the Bharatiya Antariksha Station (BAS) by 2035 and land Indian astronauts on the Moon by 2040.
❖ Private entities are now actively involved in crucial aspects of research, manufacturing, and fabrication of rockets and satellites, fostering a vibrant ecosystem of innovation. It is expected to integrate Indian companies into global value chains.
❖ With this, companies will be able to set up their manufacturing facilities within the country duly encouraging 'Make In India (MII)' and 'Atmanirbhar Bharat' initiatives of the Government.

UNIFIED PENSION SCHEME

Context: Recently, the Union Cabinet, chaired by the Prime Minister, approved the Unified Pension Scheme (UPS) by replacing the National Pension System (NPS).

About

❖ It is based on the recommendations of T. V. Somanathan Committee (2023), will be effective from April 1, 2025.
❖ The UPS proposes to amalgamate advantages of both Old Pension Scheme (OPS) and New Pension Scheme (NPS).
❖ It represents a forward-looking approach to retirement planning in India, aiming to provide a secure and sustainable pension system for all eligible employees.
❖ It aims to provide long-term financial security to government employees while maintaining flexibility and choice.

Key Features of the Unified Pension Scheme (UPS)

❖ **Guaranteed Pension:** Under the UPS, eligible employees are assured a pension equal to 50% of their average basic pay drawn over the last 12 months prior to superannuation.
  ✓ For service periods between 10 and 25 years, the pension will be proportional.
❖ **Minimum Qualifying Service:** Employees with a minimum qualifying service of 25 years will receive the full assured pension.
  ✓ In case of an employee's demise, their family will receive an assured pension equal to 60% of the employee's pension before their demise.
❖ **Assured Minimum Pension:** Upon superannuation after a minimum of 10 years of service, employees will receive an assured minimum pension of Rs 10,000 per month. It ensures a safety net for retirees.
  ✓ The UPS promises central government employees who have completed at least 25 years of service a guaranteed pension.
  ✓ It is calculated as half of their average basic salary over the 12 months preceding superannuation.

- ❖ **Inflation Indexation:** The UPS applies inflation indexation to the assured pension, assured family pension, and assured minimum pension.
    - ✓ In the form of Dearness Relief based on All India Consumer Price Index for Industrial Workers (AICPI-IW), similar to service employees.
- ❖ **Lump Sum Payment: In** addition to gratuity, 1/10th of monthly salary+ Dearness Allowance for every completed six months of service.
- ❖ **Financial Contributions**: Employees choosing the UPS will continue to contribute 10% of their salary.
    - ✓ The government's contribution will increase from 14% to 18.5%.
    - ✓ It ensures that employees do not face any additional financial burden.

Choice Between UPS and NPS

Central government employees have the option to choose between the UPS and the National Pension Scheme (NPS).
Unlike the UPS, the NPS is market-linked.

Similarities to the Old Pension Scheme (OPS)

- ❖ The UPS shares similarities with the old pension scheme in terms of benefits. However, it differs significantly in its funding mechanism.
- ❖ Unlike the OPS, which was a pay-as-you-go program, the UPS is fully funded each year from the budget and absorbed into it. This approach prevents future generations from bearing the burden of pension payments.

Choice for NPS Subscribers

- ❖ Employees currently under the National Pension System (NPS) have the option to shift to the UPS.
- ❖ NPS, introduced in 2004, is a defined contribution scheme where employees accumulate a retirement corpus based on their contributions.
- ❖ UPS provides an alternative for those seeking a more assured pension.

SMART CITIES UNDER THE NATIONAL INDUSTRIAL CORRIDOR DEVELOPMENT PROGRAMME

Context

Government has approved 12 new industrial smart cities under the National Industrial Corridor Development Programme (NICDP).

About the New Industrial Smart Cities Project

- ❖ The projects span across ten states and are strategically planned along six major corridors.
- ❖ These are Khurpia in Uttrakhand, Gaya in Bihar, Rajpura-Patiala in Punjab, Zaheerabad in Telangana, Dighi in Maharashtra, Orvakal and Kopparthy in Andhra Pradesh, Palakkad in Kerela, Jodhpur-Pali in Rajasthan, and Agra and Prayagraj in Uttar Pradesh.

Key Highlights:

- ❖ **Strategic Investments:** NICDP is designed to foster a vibrant industrial ecosystem by facilitating investments from both large anchor industries and Micro, Small, and Medium Enterprises (MSMEs).
- ❖ These industrial nodes will act as catalysts for achieving $2 trillion in exports by 2030, reflecting the government's vision of a self-reliant and globally competitive India.
- ❖ **Smart Cities and Modern Infrastructure:** The new industrial cities will be developed as greenfield smart cities of global standards, built "ahead of demand" on the 'plug-n-play' and 'walk-to-work' concepts.
- ❖ This approach ensures that the cities are equipped with advanced infrastructure that supports sustainable and efficient industrial operations.

❖ **Area Approach on PM GatiShakti:** Aligned with the PM GatiShakti National Master Plan, the projects will feature multi-modal connectivity infrastructure, ensuring seamless movement of people, goods, and services.

❖ The industrial cities are envisioned to be growth centers for transformation of the whole region.

Significance

❖ By positioning India as a strong player in the Global Value Chains (GVC), the NICDP will provide developed land parcels ready for immediate allotment, making it easier for domestic and international investors to set up manufacturing units in India.

❖ These projects are designed to attract substantial investments, with expectations of approximately Rs 1.52 trillion from both large anchor industries and MSMEs (micro, small and medium enterprises).

❖ Economic Impact and Employment Generation: This initiative is projected to generate 1 million direct and 3 million indirect jobs.

❖ **Commitment to Sustainable Development:** By providing quality, reliable, and sustainable infrastructure, the government aims to create industrial cities that are not just hubs of economic activity but also models of environmental stewardship.

❖ **National Industrial Corridor Development Programme**

❖ It is India's most ambitious infrastructure programme aiming to develop new industrial cities as "Smart Cities" and converging next generation technologies across infrastructure sectors.

❖ These are aimed at development of futuristic industrial cities in India which can compete with the best manufacturing and investment destinations in the world.

❖ The same will create employment opportunities and economic growth leading to overall socio-economic development.

❖ 32 Projects in 4 Phases under 11 Corridors forming part of National Infrastructure Pipeline

Conclusion

❖ The approval of 12 new industrial nodes under the NICDP marks a significant milestone in India's journey towards becoming a global manufacturing powerhouse.

❖ In addition to these new sanctions, the NICDP has already seen the completion of four projects, with another four currently under implementation.

❖ This continued progress highlights the government's commitment to transforming India's industrial sector and fostering a vibrant, sustainable, and inclusive economic environment.

CYBER SECURITY

UN CONVENTION AGAINST CYBERCRIME

Context: The member states of the United Nations has finalized a new international convention against cybercrime.

About

- ❖ The draft convention is expected to be adopted by the General Assembly later this year, thus becoming the first global legally binding instrument on cybercrime.
- ❖ **Background:** The road to this convention began more than five years ago when the United Nations recognized the new challenges to international security and criminal law.
  - ✓ The Ad Hoc Committee was established in 2019 and the draft convention was finally finalized in August 2024.

About the Convention

- ❖ **Aim:** To strengthen international cooperation in the fight against cybercrime, coordinate law enforcement efforts, and promote technical assistance and capacity building in member states.
- ❖ **Tools:** It provides states with a range of tools to effectively combat crimes such as terrorism, drug trafficking, human trafficking, arms smuggling, and other criminal activities facilitated by modern information technologies.
  - ✓ It is supporting developing countries through technical assistance and capacity building.
- ❖ The key objective is to improve the capabilities of national authorities in the prevention, detection, investigation, and prosecution of cybercrime.
- ❖ Convention includes the definition of criminal offenses such as illegal access to information systems, illegal interception, data manipulation, and system interference.
- ❖ It deals with the criminal liability of legal persons, the seizure and confiscation of the proceeds of crime, and international cooperation in criminal prosecution and the preservation of evidence.

What is Cybercrime?

- ❖ Cybercrime refers to criminal activities that involve the use of computers, networks, and digital technologies.
- ❖ It encompasses a wide range of illicit activities conducted in the virtual space, often with the intent to compromise, damage, or gain unauthorized access to computer systems, networks, and data.
- ❖ Cybercriminals employ various techniques and tools to exploit vulnerabilities in networks, and they may target individuals, organizations, or even governments.

Common types of Cybercrime include:

- ❖ **Hacking:** Unauthorized access to computer systems or networks to steal, alter, or destroy data.
- ❖ **Phishing:** Deceptive attempts to acquire sensitive information, such as usernames, passwords, and financial details, by posing as a trustworthy entity.
- ❖ **Malware:** Malicious software designed to disrupt, damage, or gain unauthorized access to computer systems. This includes viruses, worms, trojans, ransomware, and spyware.
- ❖ **Identity Theft**: Stealing and using someone's personal information, such as social security numbers or credit card details, for fraudulent purposes.
- ❖ **Cyber Espionage:** Covert activities aimed at gaining unauthorized access to sensitive information for political, economic, or military purposes.
- ❖ **Cyberbullying:** Using digital platforms to harass, threaten, or intimidate individuals.
- ❖ **Online Fraud:** Engaging in fraudulent activities, such as online scams and financial fraud, to deceive and exploit victims for monetary gain.

Cybercrime in India

- ❖ Chief executive officer of Indian Cyber Crime Coordination Centre (I4C), mentioned that on average 5,000 cyber complaints are registered in the country every day and around 40-50% originate outside the country.
- ❖ Most cyber crimes were reported from Haryana, Telangana, Uttarakhand, Gujarat and Goa. Among Union Territories, most complaints came from Delhi, followed by Chandigarh and Puducherry.

Impact of Cyber Crimes

- ❖ **National Security Threats:** Cybercrimes pose a threat to national security when state-sponsored actors or criminal organizations target critical infrastructure, government institutions, or military systems.
- ❖ **Financial Loss:** This includes theft of personal information, online banking fraud, credit card fraud, and ransomware attacks.
- ❖ **Data Breaches:** Data breaches can lead to the exposure of personal information, trade secrets, intellectual property, and other confidential data, causing severe damage to the affected entities.
- ❖ **Disruption of Services:** Cyber-attacks can disrupt essential services such as power grids, communication networks, and transportation systems.

Initiatives by Government of India to Prevent Cybercrimes

- ❖ **Indian Computer Emergency Response Team (CERT-In):** CERT-In is the national nodal agency for responding to cybersecurity incidents.
  - ✓ It provides proactive and reactive cybersecurity support and plays a crucial role in ensuring the security and resilience of the country's cyber infrastructure.
- ❖ **National Critical Information Infrastructure Protection Centre (NCIIPC):** It is responsible for protecting critical information infrastructure from cyber threats.
  - ✓ It identifies and designates critical sectors and advises organizations in these sectors on enhancing their cybersecurity measures.
- ❖ **Cyber Crime Prevention against Women & Children (CCPWC) scheme:** The Ministry of Home Affairs has provided financial assistance to all the States & UTs under the scheme to support their efforts for setting up of cyber forensic-cum-training laboratories, training, and hiring of junior cyber consultants.
- ❖ **Indian Cyber Crime Coordination Centre (I4C):** The Government has established I4C to provide a framework and ecosystem for Law Enforcement Agencies (LEAs) to deal with cyber crimes in a comprehensive and coordinated manner.
- ❖ **National Cyber Crime Reporting Portal:** The Government has launched the National Cyber Crime Reporting Portal to enable the public to report incidents pertaining to all types of cyber crimes.
- ❖ **Cyber Swachhta Kendra (Botnet Cleaning and Malware Analysis Centre):** This initiative is aimed at creating awareness about botnet and malware infections and providing tools for detection and cleaning.

International Conventions on Cyber Crimes

- ❖ **Budapest Convention on Cybercrime (Council of Europe Convention on Cybercrime):** Also known as the Budapest Convention, it is the first international treaty specifically addressing crimes committed via the internet and other computer networks.
  1. It includes provisions on offenses such as illegal access, data interference, system interference, and content-related crimes.

- ❖ **Internet Governance Forum:** The United Nations Internet Governance Forum (IGF) serves to bring people together from various stakeholder groups, as equals, in discussions on digital public policy.
- ❖ **African Union Convention on Cyber Security and Personal Data Protection (Malabo Convention):** This convention focuses on cybersecurity and personal data protection on the African continent.
- ❖ **Organization of American States (OAS) Cybercrime Convention:** This convention, also known as the "OAS Model Law on Cybercrime," provides a model legal framework for member states to address cybercrime.

Conclusion

- ❖ The UN Convention against Cybercrime is more than just a legal instrument.
- ❖ It is a symbol of the need for global cooperation in a world in which digital technologies are becoming increasingly important and at the same time pose new risks and threats.
- ❖ The global community now faces the task of putting this Convention into practice and ensuring that it not only helps to combat cybercrime but also protects human rights and freedom in the digital age.

SCIENCE AND TECHNOLOGY

SMALL SATELLITE LAUNCH VEHICLE (SSLV)

Context: The Indian Space Research Organisation (ISRO) successfully launched the third developmental flight of the Small Satellite Launch Vehicle (SSLV) from the Satish Dhawan Space Centre.
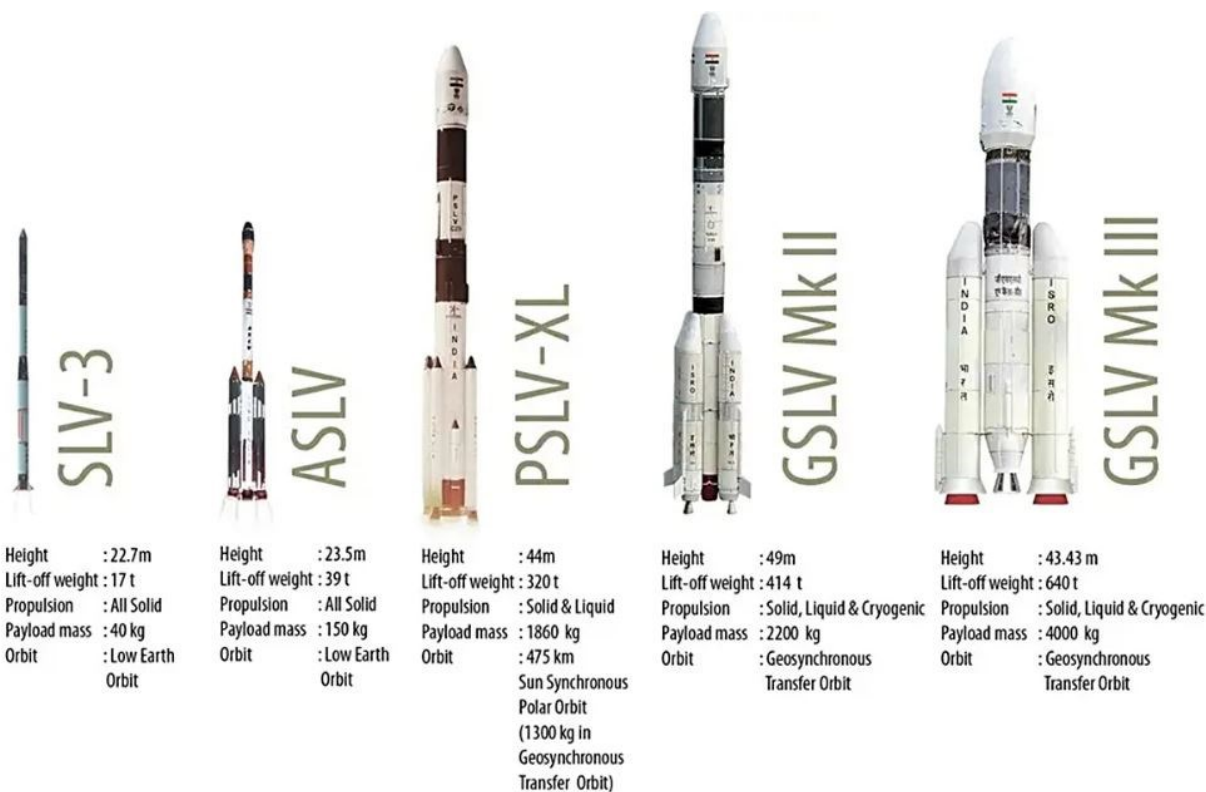
About

- ❖ The SSLV-D3 placed the Earth observation satellite EOS-08 precisely into orbit.
- ❖ It also marks the completion of ISRO/Department of Space's SSLV Development Project.
- ❖ NewSpace India Limited (NSIL), ISRO's commercial arm, and India's private space industry can now produce SSLVs for commercial missions.

What is an SSLV?

- ❖ It is a three-stage Launch Vehicle configured with three Solid Propulsion Stages.
- ❖ It also has a liquid propulsion-based Velocity Trimming Module (VTM) as a terminal stage, which can help adjust the velocity as it prepares to place the satellite.
- ❖ Significance: Essentially, the aim behind SSLVs is to produce low-cost launch vehicles with short turnaround times and minimal infrastructural requirements.
  - ✓ The SSLV can launch satellites weighing up to 500kg and accommodate multiple satellites.
  - ✓ Before SSLVs, smaller payloads had to be sent into Space using other launch vehicles carrying multiple, bigger satellites. They depended upon the launch schedules of those satellites.

Launch Vehicles

- ❖ Launchers or Launch Vehicles are used to carry spacecraft to space.
- ❖ India has three active operational launch vehicles: Polar Satellite Launch Vehicle (PSLV), Geosynchronous Satellite Launch Vehicle (GSLV), Geosynchronous Satellite Launch Vehicle Mk-III (LVM3).
- ❖ PSLV: PSLV has been a versatile launch vehicle deployed for launching all the three types of payloads viz. Earth Observation, Geo-stationary and Navigation. It has got highest success rate and considered as work horse of ISRO.
- ❖ GSLV with indigenous Cryogenic Upper Stage has enabled the launching up to 2 tonne class of communication satellites.
- ❖ The LVM3 is the next generation launch vehicle capable of launching 4 tonne class of communication satellites and 10 tonne class of payloads to LEOs.
  - ✓ The vehicle was developed with completely indigenized technologies including the C25 cryo stage.
  - ✓ The launch vehicle has a track record of all successful launches even from the first development flight.
  - ✓ The Human rated LVM3 is identified as the launch vehicle for Gaganyaan mission, which is named as HRLV.

SLV-3
Height   : 22.7m
Lift-off weight : 17 t
Propulsion   : All Solid
Payload mass   : 40 kg
Orbit   : Low Earth
                  Orbit

ASLV
Height   : 23.5m
Lift-off weight : 39 t
Propulsion   : All Solid
Payload mass   : 150 kg
Orbit   : Low Earth
                  Orbit

PSLV-XL
Height   : 44m
Lift-off weight : 320 t
Propulsion   : Solid & Liquid
Payload mass   : 1860 kg
Orbit   : 475 km
                  Sun Synchronous
                  Polar Orbit
                  (1300 kg in
                  Geosynchronous
                  Transfer Orbit)

GSLV Mk II
Height   : 49m
Lift-off weight : 414 t
Propulsion   : Solid, Liquid & Cryogenic
Payload mass   : 2200 kg
Orbit   : Geosynchronous
                  Transfer Orbit

GSLV Mk III
Height   : 43.43 m
Lift-off weight : 640 t
Propulsion   : Solid, Liquid & Cryogenic
Payload mass   : 4000 kg
Orbit   : Geosynchronous
                  Transfer Orbit

CABINET APPROVES SCHEME TO BOOST BIOTECH MANUFACTURING

Context: The Union Cabinet approved the BioE3 Policy (Biotechnology for Economy, Environment, and Employment) to drive a biotech manufacturing revolution, akin to the IT sector's transformation in the 1990s.

Aim:

❖ The BioE3 Policy aims to revolutionize biotechnology in India by boosting sustainable bio-manufacturing across sectors like healthcare, agriculture, and environmental conservation. It fosters innovation, supports national priorities, and enhances employment through advanced biotechnological processes.

❖ Features of the BioE3 (Biotechnology for Economy, Environment, and Employment) Policy:

❖ It focuses on promoting biotechnology-based manufacturing in India, aiming to catalyze a technological revolution. Here are the important features:

1. **High-Performance Biomanufacturing: Focuses** on manufacturing products through advanced biotechnological processes, including medicines, materials, and bio-based products for agriculture and industry.

2. **Strategic Thematic Sectors:** The policy covers six thematic areas:
   a) Bio-based chemicals, biopolymers, and enzymes.
   b) Smart proteins and functional foods.
   c) Precision biotherapeutics.
   d) Climate-resilient agriculture.
   e) Carbon capture and utilization.
   f) Marine and space research.

3. **Fostering Innovation:** Encourages the development of bio-based products that can address environmental, agricultural, and industrial challenges.

4. **Capacity Building:** Supports the creation of internships for students in grades 11th and 12th, as well as fellowships for graduate and post-graduate research.

5. **Focus on National Priorities:** Addresses critical areas such as sustainable agriculture, environmental conservation, and biotechnology innovation to meet national needs.
6. **Government Backing:** Merged various schemes into a single initiative called "Vigyan Dhara," which allocates significant resources for science, technology, research, and innovation.

What is Biotechnology?

It is a technology that utilizes biological systems, living organisms or parts of this to develop or create different products. Genomic technologies are defined as technologies used to manipulate and analyze genomic information.

Examples of Biotechnology

1. Medical Biotechnology
2. Genetic engineering
3. Industrial Biotechnology
4. Environmental Biotechnology

Potential of Biotechnology in Healthcare and Agriculture:

Potential of Biotechnology	Details
Gene Therapy	Replaces/modifies defective genes with healthy ones. Cures diseases like Parkinson's, cystic fibrosis, haemophilia, muscular dystrophy, sickle cell anaemia.
Pharmacogenomics	Studies genetic response to drugs, optimizing therapy with fewer adverse effects. Helps develop better vaccines, powerful medicines.
Stem Cell Therapy	Uses stem cells to repair diseased or injured tissues. Treats cardiovascular and neurodegenerative diseases (Parkinson's, Alzheimer's, Huntington's).
Molecular Diagnostics	Techniques like Recombinant DNA, PCR, and ELISA enable early diagnosis for better treatment.
Edible Vaccines	Uses transgenic plants to produce vaccines. Treats diseases like cholera, hepatitis B, and foot and mouth disease.
GM Crops	Enhances pest resistance, tolerance to abiotic stresses (cold, drought), and nutritional value (golden rice). Increases photosynthesis efficiency.
Increase in Crop Production	Improves crop yield through better disease control and stress tolerance. Reduces losses for farmers.
Biofortification	Enhances micronutrient content in crops through genetic modification or enriched fertilizers.
Tissue Culture	Regenerates disease-free plants in labs, providing high-quality planting materials.
Fresher Produce/Increased Shelf-Life	Extends the shelf life of food, reducing waste and ensuring access to fresher produce.
Aesthetic Flowers	Improves flowers' smell, size, and ornamental qualities of shrubs and trees.
Breeding of Animals	Uses artificial insemination for enhanced breeding in livestock like sheep and cattle.
Other Applications	Hybrid seeds, biofertilizers, biopesticides, stress-resistant crops, and improved animal production through better growth, nutrition, and health.

Few challenges associated with Biotechnology

- Biotechnology can threaten the survival of certain species by interfering with natural ways of breeding
- As biotechnology allows crops to intake more nutrients from the soil, this will result in loss of soil fertility
- Biotechnology can lead to biological weapons that terrorists could use for destruction (Bio wars)
- Altering DNA in humans can result in the commercialization of these techniques thus it can turn human life into a commodity.
- Protecting patient privacy is becoming an increasing concern due to the latest advances in technology that are making it possible to decipher the human genome.
- The development in genomics and techniques for creating artificial genes present serious threats to humans and the environment in general
- Lack of public awareness of the modern tools of biotechnology

Conclusion

Biotechnology has numerous advantages but it also has some disadvantages. Biotechnology could be utilised in solving future problems like food and water insecurity, hereditary diseases, etc but its ethical, and social issues need to be taken into account while its usage

INDIA'S WEATHER FORECASTING NEEDS AN UPGRADE

Context: The recent extreme weather events have put the focus back on the country's weather prediction capabilities and ways to improve them.

Weather Prediction in India

- India, at present, depends on satellite data and computer models for weather prediction. The Indian Meteorological Department (IMD) uses the INSAT series of satellites and supercomputers.
- In India three satellites, INSAT-3D, INSAT-3DR and INSAT-3DS are used mainly for meteorological observations.
- Forecasters use satellite data around cloud motion, cloud top temperature, and water vapor content that help in rainfall estimation, weather forecasting, and tracking cyclones.

Initiatives taken to improve the efficiency

- The 'National Monsoon Mission' was set out in 2012 to move the nation over to a system that relies more on real-time, on-the-ground data gathering.
- The IMD is also increasingly using Doppler radars to improve efficiency in predictions. The number of Doppler radars has increased from 15 in 2013 to 37 in 2023.
- Doppler radars are used to predict rainfall in the immediate vicinity, making predictions more timely and accurate.
- The weather agency is now using manned and automatic weather stations, aircraft, ships, weather balloons, ocean buoys and satellites to gather information on atmospheric temperature, pressure humidity, wind speed and direction and sea surface temperatures.
- The data is then fed into a supercomputer at the Indian Institute of Tropical Meteorology in Pune.
- The Ministry of Agriculture & Farmers Welfare have initiated the weather information network and data system (WINDS) under which more than 200,000 ground stations will be installed, to generate long-term, hyper-local weather data.

Challenges

- **Lack of weather monitoring ground stations:** Currently, IMD operates around 800 automatic weather stations (AWS), 1,500 automatic rain gauges (ARG) and 37 doppler weather radars (DWR).

- ❖ This is against the total requirements of more than 3,00,000 ground stations (AWS/ARG) and around 70 DWRs.
- ❖ **Lack of coordination**: Several Indian State governments and private companies operate a significant network of ground stations (more than 20,000), many of which are not currently used by IMD due to inaccessibility and/or reliability of the data.
- ❖ **Extreme Weather Events:** Events, such as extreme rainfall, landslides, and cloudbursts, have become more frequent due to climate change. These events are highly localized and erratic, making them difficult to predict with existing weather simulation models.
- ❖ **Outdated Prediction Models:** Currently, most of the prediction software used in forecasting are based on the global forecasting system and weather research and forecasting models, both of which are not the most modern.
- ❖ Forecasting weather in the tropics is more challenging than in areas that are farther from the equator, because of greater variability in weather phenomena.
- ❖ Predicting large-scale systems like monsoons, cyclones, or heat waves is easier due to their widespread nature. However localized events like cloudbursts and sudden, unexpected weather phenomena are much harder to forecast accurately
- ❖ **Need for precision:** IMD currently has the ability to forecast weather events over a 12 km x 12 km area. This grid is larger than most Indian cities.
- ❖ For hyper-local forecasts there is a need for 1 km x 1 km forecast.

Way Ahead

- ❖ Predicting weather events with a high level of accuracy has become increasingly important in India, one of the most vulnerable nations to climate change.
- ❖ There is an urgent need for an integrated system to fill the data gaps. New ground stations will have to be installed and the available data have to be shared seamlessly.
- ❖ Also the focus should be on greater integration of artificial intelligence and machine learning (AI/ML) in weather forecasting to get more accurate results.

ENVIRONMENT

RISE IN SEA LEVELS IN INDIA DUE TO CLIMATE CHANGE

Context: According to a report Mumbai has witnessed the maximum rise in sea levels (4.44 cm) among 15 Indian coastal cities between 1987 to 2021.

Major Highlights of the Report

❖ The report presents information on changes in sea levels under historical and future climate scenarios for 15 Indian coastal cities and towns.

❖ Mumbai is followed by Haldia, Visakhapatnam, Kochi, Paradip, and Chennai.

❖ Future Outlook: The rise in sea levels will continue until the end of the century under all scenarios in all 15 cities and towns, with the highest rise predicted for Mumbai.

❖ The socio-economic factors such as population, education, and urbanisation might affect greenhouse gas emissions over the next century, thereby impacting climate change.

❖ Land Submersion: More than 10% of the land in Mumbai, Yanam, and Thoothukudi, 5%–10% in Panaji and Chennai, and 1%–5% in Kochi, Mangalore, Visakhapatnam, Haldia, Udupi, Paradip, and Puri would be submerged due to rise in sea levels by 2040.

❖ Key sectors that will be impacted include water, agriculture, forest and biodiversity, and health.
  - ✓ The beaches, backwaters, and mangrove forests are particularly at risk, impacting biodiversity and tourism.

❖ **Reason:** Climate change brought on by fossil-fuel burning and greenhouse gas emissions has led to a steady increase in global temperatures.
  - ✓ As a result, sea surface temperatures and glacier melting have increased, eventually rising sea levels and posing a major threat to coastal cities worldwide, including Indian coastal cities.

Climate Change

❖ Climate change refers to long-term shifts in global or regional climate patterns.

❖ It's primarily driven by human activities, such as burning fossil fuels, deforestation, and industrial processes, which release greenhouse gases like carbon dioxide (CO_2) and methane into the atmosphere.

❖ These gases trap heat, causing the Earth's temperature to rise—a phenomenon known as global warming.

❖ Impact: It threatens the essential ingredients of good health – clean air, safe drinking water, nutritious food supply and safe shelter – and has the potential to undermine decades of progress in global health.

UN Framework Convention on Climate Change (UNFCCC)

❖ It is an international treaty that came into force in 1994.

❖ Aim: To stabilize greenhouse gas concentrations in the atmosphere at a level that will prevent dangerous human interference with the climate system.

Key features of the UNFCCC:

❖ **Parties and Membership:** The Convention has 198 members.

❖ **Conference of the Parties (COP):** It is the supreme decision-making body of the UNFCCC and COP meetings are held annually.

❖ **Funds to Developing Countries:** Industrialized nations agree under the Convention to support climate change activities in developing countries by providing financial support for action on climate change– above and beyond any financial assistance they already provide to these countries.

❖ **Kyoto Protocol:** It was adopted in 1997 and establishes legally binding emission reduction targets for developed countries.
  ✓ It operates under the framework of the UNFCCC and has its own decision-making body, the Meeting of the Parties to the Kyoto Protocol (CMP).

❖ **Paris Agreement:** Adopted in 2015 at COP21 in Paris, it is an international treaty that builds upon the UNFCCC.
  ✓ It aims to limit global warming to below 2 degrees Celsius above pre-industrial levels, with efforts to limit the increase to 1.5 degrees Celsius.
  ✓ The Paris Agreement emphasizes nationally determined contributions (NDCs) and encourages all countries to take climate action.

India's Efforts to Combat Climate Change

❖ **Renewable Energy Expansion:** India has set ambitious targets for renewable energy generation, aiming to increase its capacity significantly.
  ✓ The country has invested heavily in solar and wind energy projects, with the goal of reducing reliance on fossil fuels and lowering greenhouse gas emissions.

❖ **International Commitments:** India is a signatory to the Paris Agreement, committing to reduce its carbon intensity and increase the share of non-fossil fuel energy sources in its total energy mix.
  ✓ India has announced its aim to meet 50% of its electricity demands from renewable energy sources by 2030.

❖ **Afforestation and Forest Conservation:** Recognizing the role of forests in carbon sequestration and climate regulation, India has initiated programs to increase forest cover, restore degraded lands, and promote sustainable forest management practices.

❖ **Clean Transportation:** India is promoting the adoption of electric vehicles (EVs) and has set a target of 30% EV market share by 2030.
  ✓ The government has introduced incentives and subsidies to support the production and adoption of EVs.

❖ **Climate Resilience:** India is investing in measures to enhance climate resilience and adaptation, particularly in vulnerable sectors such as agriculture, water resources, and coastal areas.
  ✓ This includes the development of climate-resilient crop varieties, water conservation techniques, and disaster preparedness measures.

❖ **International Cooperation:** India actively participates in international forums and collaborations on climate change, engaging in initiatives such as the International Solar Alliance and the Coalition for Disaster Resilient Infrastructure.

GROUND-LEVEL OZONE POLLUTION

Context: Delhi-NCR has topped the list of 10 cities for most days crossing ground-level ozone pollution levels.

About

❖ The analysis is based on granular, real-time data (15-minute averages) from the Central Pollution Control Board.

❖ The report analysed metropolitan areas of Bengaluru, Chennai, Kolkata, Mumbai and Pune.

Major Findings

❖ All 10 areas studied witnessed exceedances of the national ozone standard, with Delhi being the most affected.
❖ Ozone levels were elevated even at night, with Mumbai recording the most instances of night-time exceedances.
❖ The duration of ozone exposure is concerning, lasting an average of 12-15 hours across most cities, the researchers found.
❖ Summer is the peak season for ozone, the problem persists year-round in many areas, particularly in sunnier southern cities.
❖ Ozone accumulates not only in metropolitan areas but also travels long distances, creating a regional pollutant that demands both local and regional action.

Ground-Level Ozone (O3) Pollution

❖ **There are two kinds of ozone:**
   ✓ High-altitude ozone or the "good ozone" that is high up in the atmosphere and forms a protective barrier around the Earth from the Sun's harmful ultraviolet rays.
   ✓ Ground-level ozone or the "bad" ozone that forms closer to the Earth in the air we breathe. This ozone is not usually emitted directly, but rather forms from chemical reactions between oxides of nitrogen (NOx) and volatile organic compounds (VOCs) in sunlight. The term "ozone" is not to be confused with "smog," another type of pollution that consists of ground-level ozone and other gaseous and particulate pollution.

Impact of Ozone

❖ **Impact on human health:** Breathing ground-level ozone can cause chest pain, coughing, throat irritation, and congestion. It can worsen bronchitis, emphysema, and asthma. Ozone also can reduce lung function and inflame the lining of the lungs.
❖ **Impact on environment:** Ozone damages vegetation and ecosystems by inhibiting the ability of plants to open the microscopic pores on their leaves to breathe.
   ✓ It interferes with the photosynthesis process by reducing the amount of carbon dioxide the plants can process and release as oxygen.
❖ **Impact on crops:** The increase in ozone levels impacted agriculture globally, with ozone-induced crop losses averaging 4.4 percent–12.4 percent for staples.
   ✓ Losses for wheat and soybean were as high as 15 percent-30 percent in key agricultural areas of India and China.

Air Pollution

❖ When harmful substances (pollutants) – particles, gases, or matter – are released into the air and reduce its quality, the air is polluted.
❖ **Common air pollutants include:** Particulate Matter (PM), Nitrogen Dioxide (NO2), Sulfur Dioxide (SO2), Ozone (O3), Carbon Monoxide (CO), Volatile Organic Compounds (VOCs), Lead etc.
❖ **Source:** These pollutants can originate from natural sources such as volcanic eruptions and wildfires, but human activities such as industrial production, transportation, agriculture, and residential heating are significant contributors to air pollution.

Steps Taken by Government of India to combat Air Pollution

❖ **National Clean Air Programme (NCAP):** Launched in 2019, NCAP is a comprehensive initiative with the goal of reducing air pollution in identified cities and regions across India.
- ✓ The program focuses on improving air quality monitoring, implementing stricter emission standards, and promoting public awareness.

❖ **Bharat Stage VI (BS-VI) Emission Standards:** The government implemented BS-VI emission standards for vehicles nationwide in 2020.
- ✓ These standards aim to reduce vehicular emissions by mandating the use of cleaner fuel and more advanced emission control technologies.

❖ **Pradhan Mantri Ujjwala Yojana (PMUY):** The PMUY scheme aims to provide clean cooking fuel to households by promoting the use of liquefied petroleum gas (LPG) as an alternative to traditional biomass-based cooking methods.

❖ **FAME (Faster Adoption and Manufacturing of Hybrid and Electric Vehicles) Scheme:** The FAME scheme promotes the adoption of electric and hybrid vehicles to reduce air pollution caused by vehicular emissions.
- ✓ Incentives are provided to both manufacturers and consumers to encourage the use of electric vehicles.

❖ **Green Initiatives for Sustainable Habitat (GRIHA):** GRIHA is an initiative to promote sustainable and environmentally friendly practices in the construction and operation of buildings.
- ✓ It encourages the use of energy-efficient technologies and materials to reduce pollution.

❖ **Waste Management Programs:** Proper waste management is crucial to prevent the burning of waste, which contributes to air pollution.
- ✓ Various waste management initiatives, including the Swachh Bharat Abhiyan, aim to address solid waste issues and promote cleaner disposal methods.

❖ **Commission for Air Quality Management:** The Commission has been set up for Air Quality Management in the National Capital Region and Adjoining Areas for better coordination, research, identification, and resolution of problems surrounding the air quality index.

Way Ahead

❖ Insufficient monitoring, limited data, and ineffective trend analysis methods have hampered understanding of this growing public health risk.

❖ The complex chemistry of ground-level ozone makes it a difficult pollutant to track and mitigate.

❖ Stringent regulations are needed to curb nitrogen oxide emissions from vehicles, industries and other sources.

❖ There is a need for a multi-pronged approach to air pollution control in India.

PROJECTS COMPLETED UNDER NAMAMI GANGE MISSION 2.0

Context: The Government of India has completed and operationalized four major projects under the Namami Gange Mission 2.0 in the first quarter of fiscal year 2024-25.

About Projects

❖ **Locations :** The projects are located in Bihar and Uttar Pradesh.
- ✓ Total cost of the projects is Rs. 920 crores.
  - ❖ **Munger (Bihar):** Develops a 175 km sewerage network and a 30 MLD STP (Sewage Treatment Plant).

- ❖ **Mirzapur (Uttar Pradesh):** Intercepts nine drains and rehabilitates six existing structures. Increases sewage treatment capacity to 31 MLD.
  - ❖ **Ghazipur (Uttar Pradesh):** Includes a 1.3 km Interception and Diversion (I&D) network and a 21 MLD STP.
  - ❖ **Bareilly (Uttar Pradesh):** Intercepts and diverts 15 drains.
  - ❖ Constructs three STPs with a combined capacity of 63 MLD.
  - ❖ Aims to improve water quality in the Ramganga River and subsequently the Ganga.
- ❖ These projects based on the Hybrid Annuity PPP (HAM) model have been designed on the basis of Advanced Sequencing Batch Reactor technology and meet the stringent standards prescribed by the National Green Tribunal NGT.

About the Namami Gange Mission

- ❖ It is an Integrated Conservation Mission, approved as 'Flagship Programme' by the Union Government in June 2014 with budget outlay of Rs.20,000 Crore to accomplish the twin objectives of effective abatement of pollution, conservation and rejuvenation of National River Ganga.
- ❖ With the success of the initial phase, the government has now embarked on Namami Gange Mission 2.0, a more ambitious and comprehensive effort to ensure the long-term health and sustainability of the river.

Objectives

- ❖ **Pollution Abatement:** It aims to intercept, divert, and treat wastewater from open drains through innovative technologies and sewage treatment plants (STPs).
  - ✓ Over 200 sewerage infrastructure projects have been sanctioned, with many already completed and operational.
- ❖ **Riverfront Development:** Enhancing the aesthetic and functional aspects of the riverfronts, including the construction and modernization of ghats and crematoria, to promote tourism and cultural activities.
- ❖ **Biodiversity Conservation:** Efforts are being made to restore and conserve the river's biodiversity. This includes the development of aquatic species restoration plans and the establishment of rescue and rehabilitation centres for endangered species1.
- ❖ **Public Awareness :** Engaging local communities, urban local bodies, and Panchayati Raj Institutions in the mission to ensure sustainable results.
- ❖ **Effluent Monitoring:** Strict monitoring and regulation of industrial effluents to ensure that industries comply with environmental standards and do not pollute the river.

Challenges

- ❖ **Funding Issues:** Despite significant financial commitments, ensuring consistent and adequate funding for the various projects under the mission remains a challenge.
- ❖ **Technological and Infrastructure Issues:** the adoption and scaling up of advanced technologies for wastewater treatment and pollution control can be hindered by infrastructural limitations and the need for continuous maintenance.
- ❖ **Community Engagement:** Ensuring that local communities, urban local bodies, and Panchayati Raj Institutions remain actively engaged and take ownership of the initiatives is a persistent challenge.
- ❖ **Industrial Pollution Control:** Enforcing compliance with environmental standards among industries can be difficult, especially in regions with high industrial activity
- ❖ **Environmental Concerns:** Restoring and conserving the river's biodiversity requires a delicate balance.

Suggestions and Way Forward

❖ Namami Gange Mission 2.0 represents a holistic approach to river rejuvenation, integrating environmental, social, and economic dimensions.

❖ By addressing the challenges and building on the achievements, the mission aims to restore the Ganga to its pristine glory, ensuring it remains a lifeline for millions of Indians for generations to come.

❖ Still there is a need for a multifaceted approach, combining technological innovation, community engagement, strict regulatory measures, and effective coordination among all stakeholders. By tackling these issues head-on, the Namami Gange Mission 2.0 can achieve its goal of rejuvenating the Ganga River and ensuring its sustainability for future generations.

ENERGY

EXPLORATION OF GEOTHERMAL ENERGY

Context: Geological Survey of India (GSI) has carried out exploration of geothermal energy in various recognized geothermal fields which includes collection of data on temperature, discharge, and quality/chemistry of water in different geothermal fields.

Major Highlights

❖ GSI has studied 381 thermally anomalous areas across India and has published a report titled 'Geothermal Atlas of India, 2022'.

❖ **Potential:** A potential of about 10,600 MW of geothermal power has been estimated in the country.

❖ **Projects:** Singareni Collieries Company Limited (SCCL) has commissioned a 20 kW pilot geothermal power plant in Manuguru area of Bhadradri Kothagudem district in Telangana.

  ✓ The Ministry of New and Renewable Energy (MNRE) is implementing a "Renewable Energy Research and Technology Development Programme (RE-RTD)" to develop indigenous technologies and manufacturing for widespread applications of new and renewable energy in an efficient and cost-effective manner.

  ✓ MNRE provides up to 100% financial support to Government/non-profit research organizations and upto 70% to Industry, start-ups, private Institutes, entrepreneur, and manufacturing units under Renewable Energy Research and Technology Development Programme, including for geothermal energy R&D projects.

❖ Collaborations with international organisations/countries to advance geothermal energy efforts in India, include: –

  ✓ Under the aegis of the MoU signed in 2007 between India and Iceland, both the sides have identified Geothermal as an area of cooperation.

  ✓ India has signed an MoU with Kingdom of Saudi Arabia in 2019, wherein, Geothermal has been identified as an area of cooperation.

  ✓ Under the Renewable Energy Technology Action Platform (RETAP) launched in 2023 between India and USA, Geothermal has been identified as a focus area.

Geothermal Energy

❖ Geothermal energy is a type of renewable energy that comes from the heat stored within the Earth.

❖ This heat is produced by the natural decay of radioactive materials and by the heat that's left over from the planet's formation.

Ways to Harness Geothermal Energy:

❖ **Geothermal Power Plants:** These use steam from heated water reservoirs beneath the Earth's surface to drive turbines connected to electricity generators. There are three main types:

  ✓ **Dry Steam Plants:** Directly use steam from a geothermal reservoir to turn the turbines.

  ✓ **Flash Steam Plants**: Pull high-pressure hot water into lower-pressure tanks to create steam.

  ✓ **Binary Cycle Plants**: Transfer heat from geothermal hot water to another liquid with a lower boiling point, which vaporizes and drives the turbine.

❖ **Geothermal Heat Pumps:** These systems use the Earth's constant temperature to heat and cool buildings. In winter, they bring heat from the ground into buildings, and in summer, they transfer heat from buildings back into the ground.

- ❖ **Direct Use Applications:** Geothermal energy can also be used directly for heating buildings, growing plants in greenhouses, drying crops, and even in some industrial processes.
- ❖ **Geothermal District Heating:** In some areas, geothermal energy is used to provide heating for entire communities or districts through a network of pipes.
- ❖ **Drawbacks:** It can have some environmental impacts, such as land subsidence and the potential for induced seismicity (earthquakes triggered by human activity).
  - ✓ Geothermal resources are often location-specific, which means they are most effective in regions with significant geothermal activity, such as Iceland, parts of the United States (like California and Nevada), and the Pacific Ring of Fire.

Significance:

- ❖ **Renewable and Sustainable:** Geothermal energy is a renewable resource because the heat from the Earth is continually replenished.
  - ✓ Unlike fossil fuels, which are finite, geothermal energy can provide a consistent and reliable source of power and heating.
- ❖ **Low Greenhouse Gas Emissions:** Geothermal energy systems produce very low levels of greenhouse gases compared to fossil fuels.
  - ✓ This makes it a cleaner alternative that helps mitigate climate change and reduce air pollution.
- ❖ **Diverse Applications:** Beyond electricity generation, geothermal energy can be used for direct heating applications, cooling, and in various industrial processes. This versatility enhances its value as a multipurpose energy source.
- ❖ **Low Operating Costs:** Once a geothermal power plant or heat pump system is installed, the operational and maintenance costs are relatively low compared to other energy sources. This can result in lower long-term energy costs.
- ❖ **Reduced Water Usage:** Geothermal power plants generally use less water than conventional power plants, which is particularly advantageous in water-scarce regions.

INDIA'S RENEWABLE ENERGY CAPACITY SURGE IN 10 YEARS

Context: Recently, the Union Minister informed that India's installed renewable energy capacity has increased by 165% over the past decade, rising from 76.38 Gigawatts (GW) in 2014 to 203.1 GW in 2024.

Key Facts

- ❖ **Solar Power:** Back in March 2014, Solar power generation was 2.82 GW, and it is around 85.47 GW of solar power in June 2024. That's nearly 30 times the original capacity.
  - ✓ India achieved 4th position globally in RE (Renewable Energy) Installed Capacity.
- ❖ **Wind Power:** Wind turbines have been spinning their way to success too. It has surged from 21.04 GW to a breezy 46.66 GW in the same period.
  - ✓ India achieved 5th position globally in it.

Non-Fossil Fuel

- ❖ For the first time ever, India has surpassed the 200 GW mark from non-fossil fuel sources. It includes:
  - ✓ 85.47 GW of solar power
  - ✓ 46.93 GW of large hydro
  - ✓ 46.66 GW of wind power
  - ✓ 10.95 GW of biopower

✓ 5.00 GW of small hydropower

Budget and Tariff

❖ The budgetary allocation for the Ministry of Renewable Energy has doubled from Rs10,000 crores last year to more than Rs20,000 crores this year.

❖ Solar power tariffs have gone from Rs. 10.95 per unit in 2010-11 to a mere Rs. 2.60 in 2023-24.

India Towards a Greener Future

❖ India aims to reach a non-fossil fuel energy capacity of 500 GW by 2030 and fulfil at least half of its energy requirements via renewable energy by 2030 at the COP26.

❖ To achieve this ambitious target, the MNRE is targeting the bidding of around 50 GW of renewable energy projects per annum.

❖ It is a significant increase from the previous target of 450 GW.

❖ The plan involves an investment of at least ₹2.44 lakh crore or ₹2.44 trillion.

❖ India's renewable energy sector has the potential to employ around one million people by 2030, and most of the new jobs would be generated by small-scale renewable energy projects.

Challenges Faced by the Renewable Energy Sector in India

❖ **Financial Health of Power Distribution Companies (DISCOMs):** The poor financial condition of power distribution companies (discoms), which are mostly owned by state governments.
   ✓ Almost all renewable energy is purchased by such discoms, resulting in very long and unsustainable payment cycles.

❖ **Land Utilisation and Availability:** Issues such as lack of a proper Land Utilisation Policy, poorly maintained land records, land ceiling limits, and the task of obtaining permissions from local bodies act as roadblocks to the implementation of large-scale renewable energy projects.

❖ **Rapid Demand Growth and Chronic Supply Shortages:** India currently experiences a significant increase in energy demand driven by rapid economic growth, which necessitates a shift away from fossil fuels.
   ✓ However, fossil fuels still dominate global energy consumption, continuing to raise GHG emission levels.

Government Efforts in India's Renewable Energy Sector

❖ **Permitting FDI:** India has permitted FDI up to 100% under the automatic route to attract foreign investments.

❖ **Waiver of Inter State Transmission System (ISTS) charges:** For inter-state sale of solar and wind power for projects, ISTS charges have been waived off.

❖ **Major Renewable Energy Schemes and Programmes:**
   ✓ Scheme for Development of Solar Parks and Ultra-mega Solar Power Projects;
   ✓ Central Public Sector Undertaking (CPSU) Scheme Phase-II;
   ✓ Production Linked Incentive (PLI) Scheme 'National Programme on High Efficiency Solar PV Modules';
   ✓ PM-KUSUM Scheme;
   ✓ Rooftop Solar Programme Phase II;
   ✓ Green Energy Corridors (GEC), and;
   ✓ Bio-Energy Programme.

❖ **Increasing Awareness:** Efforts have been made by the Government to increase awareness about the use of renewable energy through introduction of various schemes and publicity through print and media.

Conclusion

❖ India's record addition of renewable energy capacity in FY24 is a testament to the country's commitment to a sustainable and green future.

❖ As the world grapples with the challenges of climate change, India's strides in renewable energy offer a beacon of hope and a model for other countries to follow.

MODEL SOLAR VILLAGE' UNDER 'PM-SURYA GHAR: MUFT BIJLI YOJANA'

Context: Recently, the Scheme Guidelines for implementation of 'Model Solar Village' under PM-Surya Ghar: Muft Bijli Yojana have been notified by the Union Ministry of New and Renewable Energy.

About Model Solar Village

❖ A Model Solar Village, a scheme component, aims to be developed in each district of the country to act as a role model for adoption of rooftop solar in rural areas, with the goal of promoting solar energy adoption and enabling village communities to become self-reliant in meeting their energy needs.
  ✓ A total financial outlay of ₹800 crore has been allocated for this component, providing ₹1 crore per selected Model Solar Village.
  ✓ A Model Solar Village must be a revenue village with a population size above 5,000 (or 2,000 for special category states).

❖ In these model villages, households will install solar panels on their rooftops. These panels convert sunlight into electricity, which can be used for lighting, appliances, and other energy needs.

Benefits

❖ **Energy Independence:** By generating their own electricity, households reduce dependence on conventional power sources. This not only saves money but also contributes to national energy security.

❖ **Environmental Impact:** Solar energy is clean and green. By adopting it, villages reduce their carbon footprint and combat climate change.

❖ **Economic Empowerment:** Lower electricity bills mean more disposable income for families. Additionally, surplus energy sales can provide an additional revenue stream.

❖ It is estimated that the scheme will create around 17 lakh direct jobs in manufacturing, logistics, supply chain, sales, installation and other services.

About the PM Surya Ghar Muft Bijli Yojana

❖ It aims to light up 1 crore households by providing up to 300 units of free electricity every month, marking a significant step towards sustainable development and people's wellbeing.

❖ It aims to increase the share of solar rooftop capacity and empower residential households to generate their own electricity.

❖ The subsidy will cover up to 40% of the cost of the solar panels. The remaining costs have to be borne by the aspirant consumer.

❖ The Centre will fund 60% of the cost for installing 2 kW (kilowatt) systems and 40% of the cost for systems from 2-3 kW capacity.

CivilsTap Himachal

Initiatives