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APRIL 2024
WEEKLY CURRENT AFFAIRS

YOJNA IAS WEEKLY CURRENT AFFAIRS
22/04/2024 TO 28/04/2024

WEEKLY CURRENT AFFAIRS

CONTENTS

WATER SCARCITY IN INDIA

THIS ARTICLE COVERS 'DAILY CURRENT AFFAIRS' AND THE TOPIC DETAILS OF "WATER SCARCITY IN INDIA". THIS TOPIC IS RELEVANT IN THE " ENVIRONMENT AND ECOLOGY" SECTION OF THE UPSC CSE EXAM.

Why in the News?

As per the forecasts by the India Meteorological Department (IMD), India is expected to experience a more intense summer with prolonged heat waves spanning from April to June. Consequently, the nation needs to prepare itself for potential water scarcity issues. One of the difficulties lies in our tendency to perceive acute stresses such as heat, water shortages, or extreme weather events as short-term problems, typically addressed through emergency relief measures.

WATER STRESS IN INDIA

- **With 18% of the global population residing on only 2.4% of the Earth's land area, India faces a significant challenge with just 4% of the world's freshwater resources** at its disposal. Alarmingly, close to half of its rivers are contaminated, while approximately 150 primary reservoirs are operating at a mere 38% of their full storage capacity.

- Moreover, India ranks as the top consumer of groundwater worldwide. Compounding these issues, around three-quarters of India's districts are identified as hotspots for extreme climate occurrences.

- According to the **India Employment Report for 2024, approximately 45% of the population** is still engaged in agricultural activities, making it the country's primary employment sector.

- Concurrently, a study conducted by the **Council on Energy, Environment and Water (CEEW) revealed shifts in monsoon rainfall patterns across India. Over the past decade, 55% of sub-districts, known as 'tehsils**,' have experienced a noteworthy rise of over 10% in southwest monsoon precipitation compared to the preceding three decades.

Reasons for Water Scarcity in India

- **Population pressure:** India's rapidly growing population puts immense pressure on water resources. With over 1.3 billion people and counting, the demand for water for domestic, industrial, and agricultural purposes is escalating, leading to increased stress on available water sources.

- **Uneven Distribution of Water Resources**: Water resources in India are not uniformly distributed across the country. Regions such as the northwestern and central parts face acute water scarcity, while the northeastern and eastern regions receive abundant rainfall. This imbalance exacerbates water stress as areas with high demand often struggle with limited supply.

- **Climate Change:** Climate change has disrupted traditional weather patterns, leading to irregular rainfall, prolonged droughts, and more frequent extreme weather events like floods and cyclones. These changes affect the availability and distribution of water, exacerbating water stress in many parts of the country.

- **Overexploitation of Groundwater:** India is the largest consumer of groundwater globally, with agriculture being the primary user. Excessive groundwater extraction for irrigation purposes, often facilitated by unregulated pumping, leads to the depletion of aquifers and lowers the groundwater table, aggravating water stress in many regions.

- **Pollution of Surface Water**: Surface water sources such as rivers, lakes, and reservoirs are heavily polluted due to the discharge of untreated industrial effluents, agricultural runoff containing pesticides and fertilizers, and inadequate sanitation practices. Pollution renders water unfit for consumption and further reduces the availability of usable water resources.

- **Inefficient Water Management Practices:** Inefficient water management practices, including outdated irrigation techniques, inefficient water distribution systems, and wasteful agricultural practices, contribute to water stress. Improper water management leads to water loss through evaporation, leakage, and inefficient usage, reducing the availability of water for other sectors.

- **Lack of Water Conservation Measures:** Despite facing water scarcity, effective water conservation measures are often lacking. Inadequate investment in rainwater harvesting, watershed management, and water recycling exacerbates water stress by failing to maximize the utilization of available water resources.

- **Policy and Governance Challenges:** Weak enforcement of water-related regulations, inadequate implementation of water management policies, and governance issues contribute to the mismanagement of water resources. Lack of coordination among government agencies and stakeholders further hampers efforts to effectively address water stress.

Effects of water scarcity in india

- **Impact on Agriculture:** Agriculture is the largest consumer of water in India, accounting for about 80% of total water usage. Water scarcity severely affects crop yields and agricultural productivity. Farmers face challenges in irrigation, leading to crop failures, reduced yields, and economic losses. This, in turn, affects food security and livelihoods, particularly in rural

areas where agriculture is the primary source of income.

- **Drinking Water Shortages:** Water scarcity results in millions of people across India having inadequate access to safe and clean drinking water. Communities often rely on contaminated water sources, leading to waterborne diseases such as cholera, typhoid, and diarrhoea.

- **Economic Impact:** Water scarcity hampers industrial activities, particularly in water-intensive sectors such as manufacturing, textiles, and power generation. Industries face production disruptions, increased operational costs due to water sourcing and treatment, and reduced competitiveness.

- **Social Disparities:** Water scarcity exacerbates social inequalities, disproportionately affecting marginalized communities, including rural populations, women, and children. Women and girls are often responsible for collecting water, leading to increased time and effort spent on water-related chores, limiting educational and economic opportunities. Moreover, conflicts over water resources can arise within communities, exacerbating social tensions and unrest.

- **Environmental Degradation:** Water scarcity contributes to environmental degradation, impacting ecosystems, biodiversity, and natural habitats. Reduced water availability affects aquatic ecosystems, leading to habitat loss, declining fish populations, and degradation of wetlands. Moreover, groundwater depletion and surface water pollution further degrade environmental quality, exacerbating ecological imbalances and threatening biodiversity.

- **Migration and Displacement:** Water scarcity can trigger population displacement and migration, particularly in rural areas where livelihoods depend heavily on agriculture. Farmers facing crop failures and economic hardships may be forced to migrate to urban areas for alternative livelihoods, leading to increased urbanization, strain on urban infrastructure, and social challenges associated with migration.

- **Urban Water Crisis:** Rapid urbanization exacerbates water scarcity in cities and urban areas, where population growth outpaces water infrastructure development. Urban water shortages lead to water rationing, unreliable water supply, and reliance on expensive water sources such as tanker trucks or groundwater extraction, disproportionately affecting low-income communities.

Addressing Water Scarcity in India

- **Water Conservation and Demand Management:** Implementing water conservation measures at both individual and institutional levels is crucial. This includes promoting water-saving practices such as rainwater harvesting, drip irrigation, and water-efficient technologies in agriculture, industry, and households.

- **Improving Water Infrastructure:** Investing in developing and maintaining water infrastructure is essential to ensure efficient water distribution and utilization. This includes constructing dams, reservoirs, canals, and pipelines for water storage, transportation, and irrigation. Upgrading and modernizing existing infrastructure can help minimize water losses and improve water delivery systems.

- **Groundwater Management:** Implementing sustainable groundwater management practices is critical to prevent overexploitation and depletion of aquifers. This involves regulating

groundwater extraction, promoting recharge techniques such as artificial recharge and watershed management, and monitoring groundwater quality to prevent contamination.

- **Promoting Water Reuse and Recycling**: Encouraging the reuse and recycling of wastewater can help alleviate water scarcity by reducing the demand for freshwater sources. Implementing wastewater treatment plants, decentralized sewage treatment systems, and recycling technologies can provide alternative sources of water for non-potable purposes such as irrigation, industrial processes, and groundwater recharge.

- **Climate Change Adaptation:** Building resilience to climate change impacts is essential for mitigating water scarcity risks. This involves integrating climate change adaptation measures into water management strategies, such as developing drought preparedness plans, promoting climate-resilient crops and irrigation practices, and enhancing monitoring and early warning systems for extreme weather events.

- **Policy and Regulatory Reforms:** Strengthening water governance frameworks and enacting effective water policies and regulations are necessary to address water scarcity challenges. This includes implementing water pricing mechanisms, establishing water rights and allocation systems, enforcing pollution control measures, and fostering cooperation and coordination among states and regions for transboundary water management.

SOME POLICY MEASURES BY THE GOVERNMENT

- **The Jal Shakti Abhiyan** commenced in 2019 with the objective of spearheading efforts for water conservation, recharge, and rainwater harvesting across 256 water-stressed districts. Since then, the initiative has expanded its coverage to encompass all 740 districts nationwide.

- **The Atal Bhujal Yojana** significantly emphasises replenishing groundwater resources and optimizing their utilization.

- **Amrit Sarovar initiative:** The government has committed to constructing 50,000 water bodies, known as Amrit Sarovar, each approximately covering an acre of land, to promote water conservation throughout the country.

- **The Nal Se Jal:** This pivotal component of the Jal Jivan Mission aims to ensure access to piped drinking water for every rural household by 2024. The scheme operates under the auspices of the Jal Shakti Ministry.

- **The Jal Shakti Ministry** resulted from the merger of the Ministry of Water Resources, River Development and Ganga Rejuvenation, and the Ministry of Drinking Water and Sanitation. It is tasked with various responsibilities, including ensuring access to clean drinking water, overseeing the Namami Ganga project, addressing interstate water disputes, and coordinating efforts for the Ganga River cleanup.

- **The National Water Policy** underscores the importance of water conservation, promotion, and protection. It advocates for measures such as rainwater harvesting to meet water demand sustainably.

Prelims Based Question

Q1. **Consider the following statements with respect to the Jal Jivan Mission:**

1. It aims to provide potable water to every rural household through tap connection by 2024.

2. It comes under the Jal Shakti Ministry.

Choose the correct answer using the codes given below:

1. 1 Only

2. 2 Only

3. Both 1 and 2

4. Neither 1 nor 2

ANSWER: C

Mains Based Question

Q1. **"Examine the role of climate change in exacerbating water stress in India. Suggest adaptive measures and policy interventions to mitigate the impacts of climate change on water resources."**

EARTH DAY 2024

THIS ARTICLE COVERS 'DAILY CURRENT AFFAIRS' AND THE TOPIC DETAILS OF "EARTH DAY 2024". THIS TOPIC IS RELEVANT IN THE "ENVIRONMENT" SECTION OF THE UPSC CSE EXAM.

WHY IN THE NEWS?

Earth Day 2024 is celebrated worldwide on April 22 to support environmental conservation efforts and remind people of their responsibility to care for our planet. World Earth Day, also known as International Mother Earth Day, is a globally recognised event dedicated to raising awareness and promoting the sustainability of our planet.

Since its inception in 1970, Earth Day has grown into a global movement, inspiring millions to advocate for environmental conservation and sustainability. Since then, it's grown into a massive movement, with billions of people participating in events and activities worldwide.

KEY HIGHLIGHTS OF EARTH DAY 2024:

o This year, Earth Day tackles a pressing environmental issue: plastic pollution.

o The theme for 2024 is "Planet vs. Plastics," highlighting the dangers plastic poses to our

planet and health.

o Millions of plastic waste are in landfills and oceans every year. This plastic pollutes our environment, harms wildlife, and even enters the food chain.

o Investing in innovative technologies and materials to build a plastic-free world.

o It committed to ending plastics for the sake of human and planetary health, demanding a 60% reduction in the production of ALL plastics by 2040.

Global plastic recycling rates, particularly in developing countries, are usually poor—as low as 15%. With a population exceeding 1.4 billion, India generates 26,000 tonnes of plastic waste daily. Most of this is not recycled. Plastic remains a soil pollutant for generations if not recycled and phased out efficiently.

According to World Wildlife Fund research, global plastic trash production exceeds 380 million tonnes annually, with a substantial amount of it entering landfills, oceans, and waterways.

IMPORTANCE OF EARTH DAY:

Earth Day reminds us of our collective responsibility to safeguard the Earth for future generations. It calls for individuals, communities, governments, and businesses to adopt sustainable practices and work towards a more environmentally friendly future. From planting trees and cleaning up litter to advocating for renewable energy and reducing carbon emissions, Earth Day inspires a wide range of activities to promote environmental stewardship and create positive change. **Here are a few reasons why it's important:**

- **Environmental Awareness:** Earth Day raises awareness about environmental issues such as climate change, pollution, deforestation, and species extinction. It prompts individuals, communities, and governments to take action to address these challenges.

- **Global Collaboration:** Earth Day is a platform for people worldwide to come together and advocate for environmental protection. It encourages collaboration between governments, organizations, businesses, and individuals to solve pressing environmental problems.

- **Education and Outreach:** It provides opportunities for education and outreach about environmental issues. It promotes ecological literacy and empowers people with knowledge and resources to make informed decisions and take meaningful action.

- **Policy Change:** It also sparks discussions and initiatives that lead to local, national, and international policy changes. It influences legislation and policies related to environmental protection, conservation, and sustainability.

- **Engaging Youth:** Earth Day is a great opportunity to involve young people in caring for the environment. It inspires them to take action and learn more about how they can make a difference in the future.

- **Building a Movement:** It brings together people who care about the environment worldwide. They work together, share ideas, and help each other out. People organize things like cleaning trash, planting trees, and teaching others about nature.

CONCLUSION:

World Earth Day is more significant than ever in an era of growing concerns about the environment, depleting natural resources, and severe climate change. In addition to highlighting the growing problems, it provides a crucial forum for raising public awareness of these issues and encouraging and inspiring individuals globally to take action. It serves as a reminder that everyone has a shared responsibility for the planet's health and that corporations, governments, communities, and individuals must work together to achieve this goal.

Earth Day serves as a yearly reminder of the importance of environmental stewardship and the collective effort needed to safeguard the health and well-being of our planet for current and future generations.

MAINS PRACTICE QUESTION:

Q. **How does plastic pollution impact marine life and ecosystems, and who is responsible for addressing and mitigating its impact?**

NAVIGATING PULSE IMPORT DYNAMICS

THIS ARTICLE COVERS 'DAILY CURRENT AFFAIRS' AND THE TOPIC DETAILS OF "NAVIGATING PULSE IMPORT DYNAMICS". THIS TOPIC IS RELEVANT IN THE "ECONOMY" SECTION OF THE UPSC CSE EXAM.

WHY IN THE NEWS?

India experienced a substantial 84% increase in pulses imports during the fiscal year 2024 compared to the previous year, reaching the highest level in six years. This surge was triggered by a decline in domestic production, leading India to authorise duty-free imports of red lentils and yellow peas.

THE REASON BEHIND HIGH IMPORTS

- **Falling Production, Rising Demand:** India's pulse production hasn't grown as fast as the increasing demand for these protein-rich legumes. This has led to a widening gap between what's produced domestically and what's needed to feed the population.

- **Stagnant Technology**: Pulse farming practices haven't seen significant advancements since the Green Revolution. Additionally, the area dedicated to pulse cultivation hasn't expanded much, leading to limited production growth.

- **Low Yields:** Pulse production is susceptible to weather fluctuations, causing yields to swing

wildly from year to year. This inconsistency makes it difficult to consistently meet the country's pulse needs.

- **Rising demands:** India's population is on the rise, and so is its taste for pulses. As a vegetarian source of protein, pulses are increasingly valued in Indian diets.

- **Focus Beyond Production:** More research is needed to understand how factors like market access influence household pulse consumption patterns. However, the focus is more on increasing the yield of Rice and wheat.

- **Import Strategies:** While the government restricts pulse imports, some traders and companies find ways to bypass these restrictions. To ensure stable supply and manage prices, India is exploring long-term import contracts with new sources like Brazil and Argentina.

STATUS OF PULSES IN INDIA

STATUS OF PRODUCTION AND CONSUMPTION IN INDIA

- India stands as a significant player in the global pulse market, **producing 26% of the world's pulses while consuming 30% of the global supply**, making it both the leading producer and consumer of pulses. However, despite its substantial production, India also holds the title of the largest importer of pulses, underscoring the necessity for enhanced domestic production to meet the rising demand.

- India's dominance in pulse production is evident, **ranking first in both area under cultivation and total production, covering 35% of the global acreage and contributing to 25% of world production.** The positive trajectory reflects in the country's pulse production, which was 26.05 million tonnes during the period of 2022-23.

- However, despite these achievements, challenges persist in pulse production. For instance, the **average yield of pigeon peas, a commonly grown pulse in India, stagnated at 860 kg per hectare in 2022, a figure comparable to the average recorded back in 1961.** This stagnant yield emphasises the urgent need for advancements in production technology and farming practices to boost productivity.

STATUS OF PULSES IMPORT IN INDIA

- In the fiscal year 2023-24, India witnessed a notable increase in pulse imports, **totalling 4.65 million metric tons, marking the highest import volume since 2018-19.** This surge in imports is attributed to the inadequate growth in domestic pulse production, which has failed to keep pace with the escalating demand within the country.

- The imbalance between demand and supply is further compounded by the diminishing contribution of India to the global food grain market, dropping from 16% in 1950 to 8% in 2022-23.

- During the financial year 2023, **Myanmar emerged as the primary source of pulse imports for India,** supplying a quantity of 757 thousand metric tons. Additionally, significant import origins include Canada, Australia, and the United States, particularly for lentils and peas.

IMPORTANCE OF PULSE

- **Diversification of Crop:** Pulses serve as an essential component of crop diversification strategies for farmers. Cultivating pulses alongside other crops helps improve soil health by fixing atmospheric nitrogen, thus reducing the dependency on synthetic fertilisers.

- **Income Generation:** Pulses cultivation provides an additional source of income for farmers. Since pulses have a relatively shorter duration compared to many other crops, they offer an opportunity for multiple cropping cycles within a single agricultural season, thereby increasing the income potential for farmers.

- **Risk Mitigation:** Pulses cultivation acts as a risk mitigation strategy for farmers against crop failures and price fluctuations. Due to their ability to adapt to diverse agro-climatic conditions, pulses offer a more resilient option for farmers, especially in regions prone to erratic weather patterns.

- **Nutritional Value:** Pulses are an excellent source of plant-based protein, dietary fibre, vitamins, and minerals. Incorporating pulses into the diet promotes overall health and well-being, particularly for vegetarian and vegan populations who rely on plant-based protein sources.

- **Affordability:** Pulses are an affordable source of nutrition, making them accessible to a wide range of consumers, including low-income households. Their long shelf life and versatility in culinary applications further enhance their affordability and value for money.

- **Health Benefits:** Consumption of pulses is associated with numerous health benefits, including reduced risk of cardiovascular diseases, diabetes, and obesity. Pulses are low in fat, cholesterol-free, and rich in soluble fibre, which helps in managing cholesterol levels and promoting digestive health.

PRELIMS PRACTISE QUESTIONS

Q1. How does pulse cultivation contribute to improving soil health?

(a)   By depleting soil nutrients

(b)   By fixing atmospheric nitrogen

(c)   By decreasing soil erosion

(d)   By reducing soil fertility

Answer: B

Q2. Which bacteria are primarily responsible for nitrogen fixation in soil associated with pulses?

(a)   Escherichia coli

(b)   Azotobacter

(c) Lactobacillus

(d) Streptococcus

Answer: B

MAINS PRACTISE QUESTION

Q1. Evaluate the socioeconomic implications of promoting pulse cultivation in drought-prone regions. How can the cultivation of pulses empower smallholder farmers, enhance rural livelihoods, and contribute to poverty alleviation in water-stressed areas?

Q2. Explain how pulses serve as a crucial source of nutrition for cereal-eating populations in India, particularly those lacking sufficient protein intake. What nutritional benefits do pulses offer, and how do they complement the dietary requirements of individuals dependent on staple cereals?

NATIONAL DISASTER RESPONSE FUND (NDRF)

THIS ARTICLE COVERS 'DAILY CURRENT AFFAIRS' AND THE TOPIC DETAILS OF "NATIONAL DISASTER RESPONSE FUND (NDRF)". THIS TOPIC IS RELEVANT IN THE "ENVIRONMENT" SECTION OF THE UPSC CSE EXAM.

WHY IN THE NEWS?

• The Centre government told the Supreme Court that the Election Commission of India had given it clearance to deal with Karnataka's issue regarding financial assistance for drought management in the state. The Supreme Court was hearing the suit filed by the Karnataka government against the Union government, demanding the release of drought relief under the National Disaster Response Fund (NDRF).

• The Attorney General (AG) of India, R Venkataramani, representing the Centre, informed the Bench, comprising Justices B R Gavai and Sandeep Mehta and senior advocate Kapil Sibal, representing Karnataka, of this, emphasizing the equality of both Union and State governments as partners within the federal system.

WHAT IS A NATIONAL DISASTER RESPONSE FUND(NDRF)?

• The Government of India manages the National Disaster Response Fund (NDRF), established under Section 46 of the Disaster Management Act of 2005, to meet emergency response, relief, and rehabilitation expenses during a natural or man-made disaster.

• The central government manages the funds for various activities, including search and rescue operations, immediate relief such as food, shelter, medical aid, restoration of essential services, and long-term rehabilitation. The primary objective of the NDRF is to supplement

the state government's resources and provide immediate relief in case of severe calamities.

- NDRF is placed in the GOI's "Public Account" under "reserve funds not bearing interest." The government does not require parliamentary approval to withdraw money from this fund. Funds for the NDRF are allocated annually in India's Union Budget. Additionally, contributions from individuals, organizations, and foreign governments may be accepted into the fund.
- The National Executive Committee (NEC) within the National Disaster Management Authority is responsible for deciding the financial expenditures of the National Disaster Response Fund (NDRF). To ensure transparency and accountability, the NDRF's financial accounts are subjected to an annual audit conducted by India's Comptroller and Auditor General (CAG). This process helps in maintaining the integrity of the fund's usage.

ABOUT THE DISASTER MANAGEMENT ACT 2005:

The Disaster Management Act of 2005 is legislation enacted by the Government of India to manage disasters in India effectively. The Act was passed in response to the increasing frequency and intensity of disasters, both natural and man-made, and the need for a comprehensive framework to address them. **Key features of the Disaster Management Act 2005 include:**

o **Institutional Framework**: The Act establishes various national, state, and district institutions for disaster management. This includes the National Disaster Management Authority (NDMA) at the national level, State Disaster Management Authorities (SDMAs) at the state level, and District Disaster Management Authorities (DDMAs) at the district level.

o **Roles and Responsibilities**: It defines the roles and responsibilities of these authorities in disaster preparedness, mitigation, response, and recovery.

o **Preparation of Plans**: The Act mandates the preparation of disaster management plans at the national, state, and district levels. These plans outline disaster prevention, mitigation, preparedness, response, and recovery strategies.

o **Powers and Functions**: The Act confers powers upon the authorities to take necessary measures for disaster management, including issuing directions to other agencies and mobilizing resources.

o **Financial Provisions**: It provides for the creation of a National Disaster Response Fund (NDRF) and State Disaster Response Funds (SDRFs) to finance disaster response and relief activities.

o **Public Awareness and Education**: It promotes public awareness and education initiatives to enhance community resilience and disaster preparedness.

WAY FORWARD:

1. **Adequate Funding Allocation**: Ensure that sufficient funds are allocated to the NDRF annually to meet the needs of disaster response and relief operations. This could involve regular reviews of funding requirements based on assessing disaster risks and potential impacts.

2. **Transparent Utilisation**: Implement mechanisms to ensure transparency and accountability when using funds from the NDRF. These could include regular audits, public disclosure of fund usage, and strict adherence to financial guidelines and procedures.

3. **Risk-Based Allocation**: Prioritize allocating funds based on assessing disaster risks and vulnerabilities in different regions. This would ensure that resources are directed to areas most likely affected by disasters and where they are most needed.

4. **Public-Private Partnerships (PPPs)**: Foster partnerships with the private sector, NGOs, and civil society organizations to leverage resources and expertise for disaster response and recovery efforts. This could involve setting up mechanisms for private sector contributions to the NDRF and engaging them in disaster risk reduction initiatives.

5. **Flexibility and Adaptability**: Ensure that the NDRF has the flexibility to respond to evolving disaster scenarios and emerging challenges. This could involve establishing contingency funds or emergency reserves within the NDRF to address unforeseen disasters or emergencies.

Disaster management in India is a multifaceted challenge given its diverse geography, population density, and vulnerability to various natural and man-made disasters.

PRELIMS PRACTICE QUESTION:

Q. Consider the following statements about the National Disaster Response Fund:

1. The President of India controls the National Disaster Response Fund.

2. The central government does not require parliamentary approval to withdraw money from NDRF.

Which of the statements given above is/are correct?

A. Only 1
B. Only 2
C. Both 1 and 2
D. Neither 1 nor 2

ANSWER: B

MAINS PRACTICE QUESTION:

Q. How does India ensure equitable access to disaster management resources for all its communities, including the most vulnerable? Critically examine.

VASUKI INDICUS

WHY IN THE NEWS?

Recently, scientists have said that fossil vertebrae unearthed in Gujarat are the remains of the largest snake that ever lived, which was longer than the T-rex. The fossil has been named after Vasuki, the snake king associated with Lord Shiva. Scientists from IIT-Roorkee discovered 'Vasuki Indicus' in 2005, and it was recently confirmed as a giant snake.
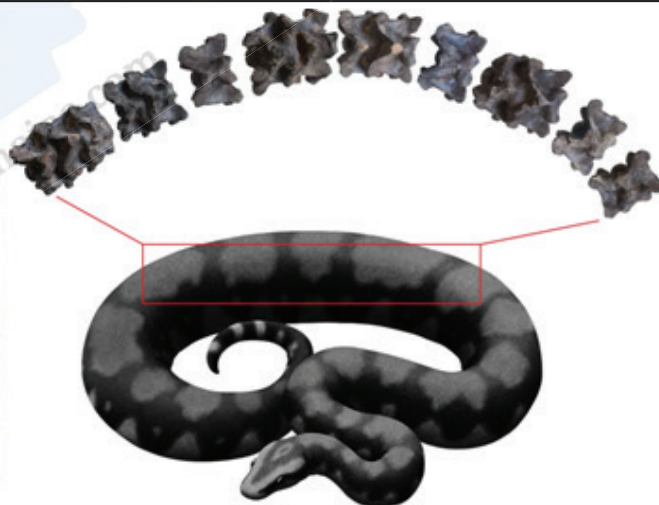
ABOUT VASUKI INDICUS:

- IIT Roorkee Scientists named the fossil species Vasuki Indicus.

- The fossils were found in Kutch, Gujarat in 2005.

- The researchers discovered 27 vertebrae from the snake, some of which looked like large pythons and would not have been venomous.

- They estimate the snake's length to be 11-15 metres (about 50 feet) and must have weighed 1 tonne.

- It belonged to the **extinct Madtsoiidae snake family**, which lived between the Upper Cretaceous and the Late Pleistocene.

- It lived in India more than 47 million years ago.

- It was a slow-moving predator catching its prey by squeezing, similar to anacondas and pythons.

WHAT IS MADTSOIIDAE?

o The name "Madtsoiidae" is derived from the genus Madtsoia, which is the type genus of this family.

o Madtsoiidae is a family of extinct snakes that lived during the Cretaceous period.

o They were large constrictors, some reaching lengths of up to 6 meters (20 feet) or more.

o They are known from fossil remains in various parts of the world, including Africa, South America, and Australia.

The discovery of Vasuki Indicus is a significant milestone highlighting India's biodiversity richness. This finding is not just about adding another species to the list of India's biological treasures; it's about deepening our understanding of how life on Earth has evolved and how continents have shifted over millions of years.

This discovery is pivotal for several reasons:

1. It contributes to our knowledge of the evolutionary process, offering insights into how species adapt and evolve.

2. It sheds light on continental shifts, as the distribution and diversity of species like Vasuki Indicus can reveal a lot about the geological and climatic changes that have shaped the Earth.

3. It underscores India's critical role in the origin and diversification of various species, particularly reptiles, highlighting its significance in the global ecological and evolutionary narrative.

Overall, Vasuki Indicus is not just a testament to India's rich biodiversity but also a key to unlocking secrets of the Earth's past, offering invaluable insights into the natural world.

MAINS PRACTICE QUESTION:

Q. Explain the importance of phylogeography in uncovering the historical processes that shape current biodiversity patterns.

ELECTRIC VEHICLE POLICY OF INDIA

THIS ARTICLE COVERS 'DAILY CURRENT AFFAIRS' AND THE TOPIC DETAILS OF "ELECTRIC VEHICLE POLICY OF INDIA". THIS TOPIC IS RELEVANT IN THE " POLITY and GOVERNANCE" SECTION OF THE UPSC CSE EXAM.

Why in the News?

In a notable development, the Indian government has approved a strategic policy with the aim of establishing India as a key manufacturing hub for electric vehicles (e-vehicles). This endeavour seeks to enhance the country's technological capabilities and supports the broader objective of strengthening the '**Make in India**' initiative. This initiative stipulates a minimum investment threshold of ₹4,150 crore.

KEY FEATURES OF INDIA'S NEW ELECTRIC VEHICLES POLICY

- **Duty Reduction on Electric Vehicles Imports:** The policy reduces the customs duty rate to 15% for Electric Vehicles (EVs), specifically for **Completely Knocked Down (CKD)** units valued at USD 35,000 or higher, applicable over a period of 5 years.

- **Maximum Import Allowance:** Under the specified conditions, if the investment surpasses USD 800 million, a maximum of 40,000 Electric Vehicles (EVs) can be imported, with an annual cap of 8,000 units. Additionally, companies can carry forward any unused import quotas from previous years.

- **Duty restrictions:** The overall duty exemption for imported Electric Vehicles (EVs) will be restricted to either the investment amount or Rs 6484 crore, whichever is lesser, aligning with the incentive provided under the Production Linked Incentive (PLI) scheme for Automobile and Auto Components.

- **Import Limit and Investment Requirements:** Despite permitting imports with reduced duties, the policy caps the number of Electric Vehicles (EVs) imported annually at 8,000 units. Manufacturers must invest a minimum of Rs 4,150 crore (approximately USD 500 million) to qualify for duty concessions. Notably, there is no upper limit on investment, aiming to encourage significant capital inflow into the sector.

- **Manufacturing and Value Enhancement Criteria:** To stimulate domestic manufacturing, firms are obligated to establish operational facilities within a span of 3 years. Furthermore, they must achieve a minimum Domestic Value Addition (DVA) of 25% within this timeframe, with an increase to 50% within 5 years from the date of receiving the approval letter from the Ministry of Heavy Industries. DVA signifies the percentage of value that reflects an economy's contribution to goods and services produced for export.

CURRENT EV MARKET IN INDIA

- The electric vehicle (EV) market in India is experiencing notable expansion, with sales in-

creasing by more than 45% in 2024 despite alterations in regulations.

- By the conclusion of 2023, the total number of registered EVs exceeded 1.5 million units, marking a considerable rise from slightly over 1 million in the preceding year. This surge in EV registrations has propelled India's overall EV market penetration to 6.3%, showcasing significant advancements in EV adoption.

- Domestic automakers in India actively invest in electrification endeavours, spurred by the government's intention to eliminate subsidies gradually.

Other Government Initiatives to Boost EV production

- **FAME scheme:**

1. The FAME (Faster Adoption and Manufacturing of Electric Vehicles) initiative is a government program in India designed to stimulate the uptake of electric vehicles.

2. This scheme offers incentives to purchasers of electric vehicles, particularly targeting public and commercial transportation sectors such as electric three-wheelers (e-3W), electric four-wheelers (e-4W), and electric buses. Additionally, privately owned registered electric two-wheelers (e-2W) are eligible for these incentives.

3. Approved by the Union cabinet in 2019, the FAME II scheme has a total budget of Rs 10,000 crore. Its objective is to accelerate the adoption of electric and hybrid vehicles by providing upfront incentives for their purchase and by establishing the necessary charging infrastructure to support electric vehicles.

- **PLI scheme:**

1. In June 2021, the Department of Heavy Industry introduced the **Production Linked Incentive for Advanced Chemistry Cell Battery Storage (PLI-ACC Scheme)** to attract domestic and international investors to invest in large-scale Advanced Chemistry Cell (ACC) manufacturing facilities in India.

2. The total payout of the PLI-ACC Scheme amounts to INR 18,100 crore, which will be disbursed over a period of five years after the production facility becomes operational. According to the policy, manufacturing facilities must commence operations within two years to qualify

for subsidies. Furthermore, the Bid Documents specify that a 60% domestic value addition must be achieved within five years thereafter.

- **Battery Swapping Policy:**

1. The Finance Minister announced the government's plan to implement a Battery Swapping Policy to establish uniform standards for batteries used in Electric Vehicles (EVs) nationwide.

2. This regulation is expected to facilitate the adoption of EVs, particularly in sectors requiring prompt services, such as deliveries and inter-city transportation. Swapping a depleted battery for a fully charged one is considered a more efficient alternative to on-the-spot recharging, which can be time-consuming.

- **EV30@30 campaign:**

- India is one of the few nations endorsing the worldwide EV30@30 initiative, which seeks to achieve a minimum of 30% of new vehicle sales being electric by the year 2030.

Hurdles in the adoption of Electric vehicles

- **High Initial Costs:** Electric vehicles generally have higher purchase prices than petrol and diesel alternatives. Although pricing gaps are narrowing with advancements in batteries and manufacturing technologies, affordability remains a critical issue for many buyers.

- **Limited Charging Infrastructure:** The lack of adequate charging infrastructure, especially in rural and semi-urban areas, makes it inconvenient for EV owners to recharge their vehicles. Range anxiety, or the fear of running out of charge without access to a charging station, is a major concern for potential buyers.

- **Battery Range Worries:** Customer concerns around EV range anxiety discourage purchases. Technological developments improve battery capacity, charging speeds, and overall vehicle range; however, continued efforts are needed to educate customers on the benefits of electrification.

- **Performance Anxiety:** Traditionalists might hesitate to buy EVs because they perceive differences in handling, acceleration, and overall performance compared to internal combustion engines.

- **Regulatory Framework:** While there are government incentives and policies to promote EV adoption, there is often a lack of consistency and clarity in regulations related to taxation, subsidies, and incentives. A stable and supportive policy environment is crucial for attracting investments and fostering innovation in the EV ecosystem.

- **Supply Chain Challenges:** The EV supply chain in India, including the manufacturing of components like batteries and electric motors, is still in the nascent stages. Building a robust domestic supply chain is essential for reducing costs and ensuring a steady supply of EVs.

Way forward for India

- Improve Affordability Through Subsidies and Tax Benefits: Subsidized loans, waived registration fees, reduced toll charges, free parking spaces, and income tax breaks can all help

lower upfront costs.

- Governments must aggressively invest in building charging stations in urban and rural areas. This includes partnerships with private sector firms and the rapid deployment of fast chargers using renewable sources of power where possible.

- Foster private sector involvement to encourage innovation in lightweight, high-energy-density batteries. Provide incentives and tax benefits to support research and development efforts in battery technology.

- Raising awareness about the environmental benefits of electric vehicles, improving charging speed, offering attractive financing schemes, and showcasing model vehicles can mitigate concerns around performance anxiety and range anxiety.

Prelims Based Question

Q1. Which of the following is a major advantage of electric vehicles compared to conventional internal combustion engines?

(a) Higher fuel efficiency

(b) Lower initial cost

(c) Lower emissions

(d) Longer refueling time

ANSWER: C

Mains based Question

Q1. Discuss the supply chain challenges faced by the EV industry in India and outline policy measures to strengthen the domestic supply chain and reduce dependency on imports for EV components

STATE OF THE CLIMATE IN ASIA 2023

THIS ARTICLE COVERS 'DAILY CURRENT AFFAIRS' AND THE TOPIC DETAILS OF "STATE OF THE CLIMATE IN ASIA 2023". THIS TOPIC IS RELEVANT IN THE "ENVIRONMENT" SECTION OF THE UPSC CSE EXAM.

WHY IN THE NEWS?

Recently, a report published by the World Meteorological Organization (WMO) said floods and

storms were the main cause of casualties and economic damage in 2023, while the impact of heat waves became more severe. "Many countries in the region experienced their hottest year on record in 2023, along with a barrage of extreme conditions, from droughts and heatwaves to floods and storms," WMO chief Celeste Saulo said in a statement.

KEY HIGHLIGHTS OF THE STATE OF THE CLIMATE IN ASIA 2023' REPORT:

o It found that Asia has been warming faster than the global average, with temperature rises in 2023 averaging nearly 2 degrees Celsius (3.6 degrees Fahrenheit) above the 1961-90 average.

o In 2023, the 79 events associated with extreme weather, climate, and water-related hazards affected over 9 million people in the region and directly killed over 2,000 people. Japan experienced its hottest summer on record.

o Glaciers in High-Mountain Asia have experienced accelerated mass loss over the last 40 years, significantly worsened by 2023's record temperatures and dry conditions in the Eastern Himalayas and Tien Shan.

o Since 1982, the ocean around Asia has shown a warming trend, with 2023 seeing record-high sea-surface temperature anomalies in the northwest Pacific Ocean.

o South-west China suffered from drought because of the below-normal precipitation levels nearly every month of 2023.

o Floods and storms make up 80% of hydrometeorological hazards, with heavy rainfall causing widespread flooding in Yemen as an example.

o India faced severe weather impacts, including heat waves, floods, glacial outbursts, and cyclones.

o Between April and June 2023, severe heat waves caused about 110 deaths due to heatstroke in India.

o In 2023, floods in Himachal Pradesh and Uttarakhand, India, resulted in 25 deaths and significant damage, leading to a government-declared state of emergency and the launch of rescue efforts.

o In 2023, the Indian sub-continent witnessed six tropical cyclones in the North Indian Ocean, slightly exceeding the average with four in the Bay of Bengal—Mocha, Hamoon, Midhili, Michaung—and two in the Arabian Sea—Biparjoy and Tej.

APPROACHES TO ADDRESS THE CLIMATE ISSUES:

Addressing climate issues requires a comprehensive approach involving multiple strategies at different levels of society, and reducing climate change damage requires a multi-faceted approach that involves individuals, communities, businesses, governments, and international cooperation. **Here are some key approaches to addressing the climate issues:**

1. **Reducing Greenhouse Gas Emissions**: The primary driver of anthropogenic climate change is the emission of greenhouse gases, such as carbon dioxide (CO_2), methane (CH_4), and

nitrous oxide (N2O). Reducing these emissions through measures like Transitioning to renewable energy sources such as solar, wind, and hydroelectric power.

2. **Carbon Capture and Storage (CCS)**: CCS technologies aim to capture CO2 emissions from industrial processes or directly from the atmosphere and store them underground or in other long-term storage facilities, preventing them from entering the atmosphere and contributing to global warming. Planting trees and restoring forests can help absorb CO2 from the atmosphere, acting as a natural carbon sink.

3. **Climate-Resilient Infrastructure and Crop Diversification**: Build and retrofit infrastructure to withstand climate-related hazards such as extreme weather events, sea-level rise, and flooding. Promote diverse and resilient agricultural practices that can adapt to changing climate conditions.

4. **Education and Awareness**: Raise public awareness about the causes and consequences of climate change. Promote education and training on sustainable practices and technologies. Encourage behaviour change and consumer choices that reduce carbon footprints.

5. **Water Management and Ecosystem Restoration:** Enhance water conservation and management practices to cope with changing precipitation patterns and water scarcity. Restore and protect natural ecosystems such as wetlands, forests, and coral reefs to enhance resilience to climate change impacts.

6. **Research and Development**: Invest in developing clean energy technologies, carbon capture and storage, and other climate solutions. Scale up deploying existing climate-friendly technologies and innovations to accelerate emissions reductions and adaptation efforts.

7. **Policy and Governance**: Develop and implement ambitious national climate action plans with targets for emissions reductions, renewable energy deployment, and adaptation measures. Collaborate with other countries to strengthen global climate agreements and commitments, such as the Paris Agreement. Enact and enforce regulations to limit transportation, industry, and agriculture emissions.

ABOUT WORLD METROLOGICAL ORGANISATION (WMO):

- The World Meteorological Organization (WMO) is a specialized agency of the United Nations responsible for promoting international cooperation in meteorology (the science of the atmosphere and its phenomena) and related fields. It was established in 1950 and has its headquarters in Geneva, Switzerland.
- Its primary objectives are multifaceted and focus on enhancing global meteorological capabilities. One of the main goals of the WMO is to facilitate the exchange of meteorological information among nations. This is crucial for forecasting weather and mitigating the effects of extreme weather events, which can save lives and protect property.
- Another significant objective is the standardization of meteorological observations and data. This ensures that the data collected from different parts of the world are comparable and can be reliably used in global climate models and weather forecasting.
- WMO facilitates international cooperation in research and technology development in meteorology and related fields. This involves coordinating global efforts to advance our understand-

ing of meteorological phenomena and developing new weather observation and prediction technologies.

PRELIMS PRACTICE QUESTION:

Q. Consider the following statements about the State of the Climate in Asia 2023 report:

1. The report was published by the World Metrological Organisation(WMO).

2. According to the report, Asia has faced the most number of disasters in the world in 2023

Which of the above statements is correct?

A. 1 only
B. 2 only
C. Both 1 and 2
D. Neither 1 nor 2

ANSWER: C

MAINS PRACTICE QUESTION:

Q. How can disaster management strategies be adapted to address the increasing frequency and intensity of natural disasters due to climate change?

Q. How can international cooperation in disaster management be enhanced to address the global challenge of climate change and ethical considerations in prioritizing disaster management resources in areas most affected by climate change?

WHO INTRODUCED FIRST PATIENT SAFETY RIGHTS CHARTER

THIS ARTICLE COVERS 'DAILY CURRENT AFFAIRS' AND THE TOPIC DETAILS OF "WHO INTRODUCED FIRST PATIENT SAFETY RIGHTS CHARTER". THIS TOPIC IS RELEVANT IN THE "SOCIAL ISSUES" SECTION OF THE UPSC CSE EXAM.

WHY IN THE NEWS?

The first Patient Safety Rights Charter was introduced by the World Health Organization (WHO) during the Global Ministerial Summit on Patient Safety. This pioneering document delineates the

rights of patients within the realm of safety, marking a significant milestone.

PATIENT SAFETY RIGHTS AS PER THE CHARTER

- The World Health Organization (WHO) developed the Patient Safety Rights Charter to advocate for patients' fundamental right to safe healthcare. This charter serves as a guide for governments and healthcare institutions to prioritise patient safety and empower patients to be active participants in their care.

- The charter outlines **ten core rights** that healthcare systems must uphold to minimise risks and prevent unintended harm to patients. These rights encompass various aspects of patient care, including:

1. **Right to timely, effective, and tailored care including out-of-hours support and prompt notification of critical test results.** Ensures evidence-based and culturally sensitive care to prevent harm and monitor post-discharge recovery.

2. **Right to safe healthcare processes**, including accurate documentation, evidence-based pathways, and safe medication practices to prevent harm.

3. **Right to qualified and compassionate health workers** adhering to professional standards and respecting patient rights, with access to facility information.

4. **Right to safe medical products and their rational use**, ensuring access to quality products and empowering patients and health workers to report adverse reactions.

5. **Right to safe healthcare facilities**, emphasising accessibility, structural integrity, cleanliness, infection control, and protection from violence and exploitation.

6. **Right to dignity, respect, non-discrimination, privacy, and confidentiality**, ensuring equitable treatment and protection of personal information.

7. **Right to information, education, and supported decision-making**, providing clear and culturally appropriate information, support for decision-making, and access to medical records.

8. **Right to access medical records in a usable format**, control over information use, data protection, and secure handling of records.

9. **Right to be heard and fair resolution**, allowing patients to report incidents without fear of reprisal, with clear explanations and fair processes for resolution and prevention.

10. **Right to patient and family engagement**, enabling active participation in care decisions, advance directives, seeking second opinions, and involvement in healthcare system improvement.

SIGNIFICANCE OF THE PATIENT SAFETY CHARTER

- **Prioritising Patient Well-being:** A Patient Safety Charter would establish a clear framework for prioritising patient well-being throughout the healthcare system. This would encompass best practices, protocols, and guidelines to minimise risks and promote safe care delivery.

- **Standardisation and Consistency:** A charter can promote standardisation and consistency in healthcare practices across different institutions. This reduces variability and ensures a baseline level of safety for patients regardless of where they receive care.

- **Collaboration and Transparency:** The charter can foster collaboration between healthcare providers, patients, and families. By encouraging open communication and transparency around safety concerns, it empowers all stakeholders to participate in risk identification and mitigation.

- **Accountability and Improvement:** A Patient Safety Charter would establish clear lines of accountability for ensuring safe care. This encourages continuous improvement by setting measurable goals and tracking progress in reducing patient harm.

- **Building Trust and Confidence:** By demonstrating a strong commitment to patient safety, a charter can rebuild public trust and confidence in the healthcare system. This is crucial for encouraging individuals to seek care without undue fear of complications.

CHALLENGES FOR PATIENT SAFETY IN INDIA

- **Resource Constraints:** Limited resources, including a shortage of qualified healthcare personnel, inadequate infrastructure, and a lack of essential equipment, can compromise patient safety. Overcrowded facilities and overworked staff can lead to errors in diagnosis, medication administration, and surgical procedures.

- **Fragmented Healthcare System:** The Indian healthcare system is fragmented, with a mix of public and private providers operating under different regulations and standards. This lack of cohesion can create inconsistencies in care delivery and make it difficult to implement and monitor safety initiatives on a national scale.

- **Medical Culture:** A hierarchical medical culture, where senior doctors are less likely to be questioned, can hinder open communication and reporting of errors. This can create a culture of blame rather than one focused on learning and improvement.

- **Patient Education and Awareness:** Limited health literacy among patients can lead to misunderstandings about treatment plans and medication use. Additionally, cultural beliefs and practices can sometimes conflict with recommended medical procedures, posing safety risks.

- **Counterfeit Drugs and Unsafe Practices:** The presence of counterfeit drugs and the persistence of unsafe practices, such as needle reuse, contribute to patient harm. Addressing these issues requires robust regulatory frameworks and enforcement mechanisms.

- **Hospital-Acquired Infections (HAIs):** Inadequate infection control protocols and a lack of emphasis on hand hygiene contribute to the spread of HAIs, which can have serious consequences for patients.

PRELIMS PRACTISE QUESTION

Q1. What is the primary goal of the National Patient Safety Implementation Framework

(NPSIF) 2018-2025?

(a) To establish institutional framework/mechanisms

(b) To improve patient safety at all levels of healthcare

(c) To promote infection prevention and control

(d) To ensure safety in programmatic and clinical domains

Answer: B

MAINS PRACTISE QUESTION

Q1. Discuss the factors contributing to the low penetration of health insurance in India. How do socioeconomic factors, lack of awareness, and trust issues impact the adoption of health insurance among the population?

GLOBAL FOREST WATCH (GFW)

THIS ARTICLE COVERS 'DAILY CURRENT AFFAIRS' AND THE TOPIC DETAILS OF "GLOBAL FOREST WATCH (GFW)". THIS TOPIC IS RELEVANT IN THE "ENVIRONMENT" SECTION OF THE UPSC CSE EXAM.

WHY IN THE NEWS?

The Global Forest Watch, which tracks forest changes in near real-time using satellite data and other sources, said the country lost 4,14,000 hectares of humid primary forest (4.1 per cent) from 2002 to 2023, making up 18 per cent of its total tree cover loss in the same period.

Global Forest Watch (GFW) is an online platform that provides near-real-time data and tools for monitoring and managing forests worldwide. It's an initiative led by the World Resources Institute (WRI) in collaboration with various partners.

THE KEY FINDING OF THE DATA:

- The loss of primary forests–those untouched by people and sometimes known as old-growth forests—in the tropics declined 9% in 2023 compared to 2022.

- Deforestation globally rose by 3.2% in 2023.

- Brazil, the Democratic Republic of Congo, and Bolivia topped the ranking of tropical countries with the most primary forest losses.

- From 2001 to 2022, Indian forests released 51 million tons while absorbing 141 million tons of CO2 annually.

- India has lost 2.33 million hectares of tree cover since 2000, equivalent to a six per cent decrease in tree cover.

- The five states in India accounted for 60 per cent of all tree cover losses between 2001 and 2023.

- Assam had the maximum tree cover loss, at 324,000 hectares, compared to an average of 66,600 hectares.

- Mizoram lost 312,000 hectares of tree cover, Arunachal Pradesh 262,000 hectares, Nagaland 259,000 hectares, and Manipur 240,000 hectares of forest cover.

- From 2001 to 2022, Odisha had the highest rate of tree cover loss due to fires, with an average of 238 hectares lost per year.

The platform allows users to access interactive maps, analyse forest trends, and utilise various forest monitoring tools, including forest loss alerts, fire alerts, and land use classification. GFW also provides data on forest-related topics such as biodiversity, carbon emissions, and land tenure.

The Global Forest Watch refers to tree cover when discussing forest extent, loss, and gain. Tree cover is a convenient metric for monitoring forest change because it is easily measurable from space using freely available, medium-resolution satellite imagery. This means tree cover can be monitored frequently, cheaply, and over large scales.

The tree cover loss data featured on the Global Forest Watch represents the best available spatial figures on how forests change worldwide. However, changes have occurred to the data over time due to algorithm adjustments and improved satellite data.

DEFORESTATION IN INDIA:

Deforestation is a global environmental issue with far-reaching consequences for ecosystems, biodiversity, climate, and human well-being. India is one of the world's biodiversity hotspots, with many flora and fauna. Deforestation leads to habitat loss, endangering numerous plant and animal species. Many species are pushed to extinction due to the destruction of their habitats.

According to the Food and Agriculture Organisation, the rate of deforestation in India was 668,000 hectares per year between 2015 and 2020, the second highest worldwide. The data showed India lost 35,900 hectares of tree cover from 2002 to 2022, with 2008 recording the maximum tree cover loss due to fires (3,000 hectares).

Here are some key points about deforestation in India:

o Deforestation is driven by various factors, including agricultural expansion (such as clearing land for farming or cattle ranching), logging for timber and wood products, infrastructure development (roads, dams, etc.), urbanization, mining, and wildfires, both natural and human-induced.

o Logging for timber, wood products, and fuelwood is another significant cause of deforesta-

tion in India. The construction of roads, highways, dams, reservoirs, and other infrastructure projects often necessitates clearing large swathes of forest land. Rapid urbanization and industrialization also lead to encroachment into forested areas for residential, commercial, and industrial development.

o Mining activities for minerals, coal, and other resources result in clearing forests and destroying ecosystems. India's rapidly growing population puts pressure on land resources, leading to the conversion of forest land for settlement, agriculture, and other human activities.

o Deforestation has severe environmental consequences, including habitat loss and fragmentation, loss of biodiversity, disruption of ecosystems, soil erosion, alteration of water cycles, and increased greenhouse gas emissions leading to climate change.

o Trees play a crucial role in mitigating climate change by absorbing carbon dioxide from the atmosphere through photosynthesis. Deforestation often negatively impacts local communities that depend on forests for their livelihoods, including indigenous peoples and forest-dependent populations.

WAY FORWARD:

Conserving trees is essential for maintaining biodiversity, mitigating climate change, preserving ecosystems, and ensuring the well-being of communities that depend on forests. **Here are some effective ways to conserve trees:**

1. Establish and enforce protected areas, national parks, and forest reserves to safeguard valuable forest ecosystems from deforestation, illegal logging, and other destructive activities. Strict enforcement of laws and regulations is crucial for effective protection.

2. Encourage sustainable forestry practices that prioritize long-term forest health and biodiversity conservation. This includes selective logging, reduced-impact logging techniques, and reforestation efforts to replenish harvested areas.

3. Involve local communities, indigenous peoples, and forest-dependent populations in forest management and conservation efforts. Recognize and uphold indigenous peoples' land rights, tenure, and local communities historically inhabited and managed forested areas.

4. Undertake reforestation and afforestation initiatives to restore degraded landscapes, rehabilitate deforested areas, and establish new forested areas where suitable. Promote urban forestry initiatives to plant and maintain trees in cities and urban areas.

5. Raise awareness among the general public, policymakers, and businesses about the importance of trees and forests for environmental conservation and human well-being. Implement policies and incentives that promote tree conservation, such as tax incentives for reforestation, subsidies for sustainable forestry practices, and regulations to curb deforestation and illegal logging.

PRELIMS PRACTICE QUESTION:

Q. Consider the following statements regarding Global Forest Watch (GFW):

1. It's an initiative led by the World Resources Institute (WRI) to monitor global forests in near

real-time using satellite data and other sources.

2. According to the latest data from Global Forest Watch, India's tree cover has increased since 2000.

3. Deforestation worldwide increased by 3.2% in 2023.

4. Brazil topped the ranking of tropical countries with the most primary forest losses.

5. Assam had the maximum tree cover losses between 2001 and 2023 in India.

How many of the above statements are correct?

A. Only two

B. Only three

C. Only four

D. All five

ANSWER: C

MAINS PRACTICE QUESTION:

Q. **"How has deforestation in India impacted the local ecosystems, and what measures are being taken to mitigate these effects?"**

Q. **Critically examine the impact of deforestation on indigenous communities and biodiversity in India.**

INTERNATIONAL CONFERENCE ON DISASTER RESIL-IENT INFRASTRUCTURE MEET

THIS ARTICLE COVERS 'DAILY CURRENT AFFAIRS' AND THE TOPIC DETAILS OF "International Conference on Disaster Resilient Infrastructure Meet". THIS TOPIC IS RELEVANT IN THE " ENVIRONMENT AND ECOLOGY" SECTION OF THE UPSC CSE EXAM.

Why in the News?

Recently, Prime Minister Narendra Modi delivered a video message at the **6th edition of the International Conference on Disaster Resilient Infrastructure in Delhi.** The Prime Minister underscored the importance of investing in resilient infrastructure today to secure a better tomorrow. He highlighted the necessity of integrating resilience into the development of new infrastructure

and incorporating it into post-disaster reconstruction efforts.

ABOUT INTERNATIONAL CONFERENCE ON DISASTER RESILIENT INFRASTRUCTURE

- The International Conference on Disaster Resilient Infrastructure serves as a forum for governments, organisations, institutions, media, and infrastructure stakeholders to enhance global discussions on disaster and climate-resilient infrastructure.

- ICDRI stands as the premier yearly conference organised by the **Coalition for Disaster Resilient Infrastructure (CDRI).**

THE COALITION, THROUGH ICDRI, AIMS TO:

- Facilitate action by offering a venue for decision-makers and influencers to convene, discuss common challenges, and pinpoint key areas for cooperation.

- Establish fresh partnerships, highlight best practices, and broaden the reach of the Coalition.

ABOUT COALITION FOR DISASTER RESILIENT INFRASTRUCTURE (CDRI)

- CDRI is a self-governing global institution serving as a collaborative platform where nations can exchange knowledge and resources.

- Its primary aim is to bolster the resilience of infrastructure systems against the effects of disasters.

- The organisation was founded in 2019 during the United Nations Climate Action Summit in New York and stands as India's second significant global initiative following the establishment of the International Solar Alliance (ISA) during the 2015 Paris Climate Change Conference.

- Currently, **CDRI has 39 countries and 7 organisations as its members**.

Why Investment in Resilient Infrastructure is Important?

Investment in resilient infrastructure is crucial for several reasons, particularly in the face of increasing threats posed by natural disasters, climate change, and other disruptive events. Here's a detailed exploration of why investing in resilient infrastructure is important:

- **Mitigating Disaster Risks:** Resilient infrastructure is designed to withstand and recover from various hazards, including earthquakes, floods, hurricanes, and tsunamis. By investing in infrastructure that can resist these disasters, communities can minimise the loss of life, property damage, and economic disruptions caused by such events.

- **Protecting Lives and Livelihoods:** Resilient infrastructure helps protect the lives and livelihoods of people living in vulnerable areas. For example, robust flood protection systems can prevent inundation of homes and businesses, while earthquake-resistant buildings can reduce the risk of casualties during seismic events.

- **Safeguarding Economic Stability:** Disasters and infrastructure failures can have significant economic consequences, disrupting supply chains, damaging critical facilities, and impeding business operations. Investing in resilient infrastructure helps safeguard economic stability by reducing the vulnerability of key assets and ensuring the continuity of essential services.

- **Promoting Sustainable Development:** Resilient infrastructure is a cornerstone of sustainable development, as it enables communities to thrive in the face of environmental challenges. By integrating principles of sustainability and resilience into infrastructure planning and development, societies can better manage resources, minimise environmental impacts, and adapt to changing conditions over time.

- **Adapting to Climate Change:** Climate change is exacerbating the frequency and intensity of extreme weather events, such as heatwaves, storms, and droughts. Resilient infrastructure is essential for adapting to these changes, as it allows communities to withstand climate-related risks and build adaptive capacity to cope with future uncertainties.

- **Long-Term Cost Savings:** While the upfront costs of building resilient infrastructure may be higher than traditional infrastructure projects, the long-term benefits often outweigh the initial investment. Resilient infrastructure can reduce the need for costly repairs and replacements, minimise insurance claims, and lower the overall economic burden of disasters on society.

- **Fostering Innovation and Technological Advancement:** Investment in resilient infrastructure drives innovation and technological advancement in engineering, construction, and other related fields. By encouraging the development of new materials, designs, and techniques, resilient infrastructure projects spur growth and competitiveness in the economy.

DISASTER RESILIENT INFRASTRUCTURE

RELATION BETWEEN DISASTER RESILIENCE INFRASTRUCTURE AND CLIMATE CHANGE

- **Exacerbation of Hazards:** Climate change is increasing the frequency and intensity of natural hazards such as hurricanes, floods, heat waves, droughts, and wildfires. These extreme weather events pose significant risks to infrastructure, leading to damage, disruption, and loss of life. Resilient infrastructure is crucial for mitigating these risks by enhancing the ability of communities to withstand and recover from climate-related disasters.

- **Adaptation and Mitigation:** Resilient infrastructure plays a crucial role in both climate change adaptation and mitigation efforts. On the one hand, it helps communities adapt to the impacts of climate change by providing robust protection against extreme weather events

and other hazards.

- **Food Security & Agriculture:** Climate change threatens agriculture production, leading to food insecurity and increased prices. Implementing climate-resilient farming practices and adopting smart agricultural techniques could combat crop failures resulting from erratic weather patterns. Also, improving storage and distribution infrastructure can preserve food supplies during extreme temperature fluctuations or unexpected disasters.

- **Urban Heat Island Effect:** Climate change exacerbates the urban heat island effect, leading to higher temperatures in urban areas compared to surrounding rural areas. Heatwaves pose significant risks to infrastructure and public health, increasing the demand for cooling systems and energy consumption. Disaster-resilient infrastructure includes measures to mitigate the urban heat island effect, such as green roofs, cool pavements, and urban green spaces, which can reduce temperatures and improve urban livability.

How India is Building Disaster Resilient Infrastructure?

- **Mumbai Metro Project** – To improve transport connectivity amid heavy rainfall and traffic congestion in Mumbai, India constructed an extensive metro network beneath the city streets. In heavy monsoon seasons, submerging trains become a possibility, hence providing safer commuting routes and easing traffic loads significantly.

- **Solar Panels Installations –** Utilizing solar panels to generate electricity reduces dependence on fossil fuels contributing significantly to pollution. Solar microgrid systems installed in remote villages offer reliable lighting and charging devices during blackouts triggered by natural disasters like cyclones and floods.

- **Cyclone Shelters –** India constructs temporary cyclone shelters during cyclonic seasons where residents gather before cyclones strike, keeping them protected until danger passes. These shelters incorporate adequate sanitation facilities, ventilation, and first aid kits.

- **Urban Forestry Program** – Planting trees in urban settings absorbs carbon dioxide emissions and reduces the urban heat island effect during hot summers. Trees absorb flood water runoff, thereby lessening flood intensity. Moreover, forests act as buffers to protect urban infrastructures like roads, bridges, and buildings.

- **Flood Control Measures** – India uses check dams, permeable pavements, rain gardens, contour planting, bioswales, and afforestation to prevent soil erosion and reduce flooding.

Examples of Disaster Resilient Infrastructure Around the World

- **Japan:**

- Japan is renowned for its advanced earthquake-resistant building designs and infrastructure systems. Buildings, bridges, and highways are constructed to withstand seismic activity, reducing the risk of collapse and casualties during earthquakes.

- The country has also invested in **tsunami barriers, seawalls, and early warning systems** to mitigate the impact of tsunamis along its coastal regions.

- **Netherlands:**

- The Netherlands is known for its extensive system of flood protection measures, including dikes, dams, and storm surge barriers. These structures help protect low-lying areas from flooding caused by storm surges and rising sea levels.

- The Dutch government also promotes nature-based solutions such as **wetland restoration and coastal dune reinforcement** to enhance resilience against climate-related hazards.

- **Singapore:**

  - Singapore has implemented comprehensive drainage systems and water management strategies to mitigate the risk of flooding in urban areas. The city-state also incorporates green infrastructure features such as **rain gardens, bioswales, and permeable pavements** to absorb and manage stormwater runoff.

  - **Singapore's Building and Construction Authority (BCA)** has established stringent building codes and standards for structural resilience, including requirements for wind resistance and seismic design.

- **Australia :**

- Invested massively in bushfire prevention, educating residents on firefighting techniques, creating defensible space around residential properties, monitoring forest conditions via satellite imagery, upgrading rural electric infrastructure for rapid isolation of affected zones, deploying helicopters for aerial firefighting missions, and rolling out automated weather surveillance systems.

Prelims Based Question

Q1. Consider the following statements regarding the Coalition for Disaster Resilient Infrastructure:

1. CDRI is a major Global initiative of India.

2. CDRI was established During CoP-15, Paris.

Choose the correct answer using the codes given below:

(a) 1 Only

(b) 2 Only

(c) Both 1 and 2

(d) Neither 1 nor 2

ANSWER: A

Mains based Question

Q1. **How does resilient infrastructure contribute to promoting sustainable development and enhancing community resilience in the face of environmental challenges?**

RWANDA BILL PASSED BY UK PARLIAMENT

THIS ARTICLE COVERS 'DAILY CURRENT AFFAIRS' AND THE TOPIC DETAILS OF "RWANDA BILL PASSED BY UK PARLIAMENT". THIS TOPIC IS RELEVANT IN THE "INTERNATIONAL RELATIONS" SECTION OF THE UPSC CSE EXAM.

WHY IN THE NEWS?

The UK parliament has approved legislation enabling the government to transfer asylum seekers to Rwanda for their asylum claims to be assessed by the East African nation. Prime Minister Rishi Sunak has consistently highlighted the importance of curbing the arrival of small boats in the country, which often carry migrants seeking refuge from various forms of violence, persecution, and instability.

ABOUT RWANDA BILL

- A UK government policy, first proposed in 2022, has ignited debate. The plan **aims to curb illegal immigration by deporting asylum seekers to Rwanda for processing**. This approach relies on designating Rwanda as a safe third country where asylum seekers wouldn't face persecution.

- However, the concept of a safe third country lacks universal acceptance, raising concerns about the policy's fairness and effectiveness. Critics argue that even if Rwanda is deemed safe, the deportation process itself could be disruptive and potentially risky for asylum seekers.

- Despite the controversy, the UK and Rwanda solidified their partnership in April 2022 through a **Migration and Economic Development Partnership (MEDP).** Under this agreement, the UK would assess asylum claims and transport rejected applicants to Rwanda for processing and potential resettlement. Rwanda would then assume responsibility for providing shelter and adjudicating asylum applications. Those denied asylum in Rwanda would be returned to their home countries.

- The UK government maintains this policy **to deter illegal immigration and expedite the asylum process**. However, human rights groups and the United Nations have voiced strong objections, questioning the long-term viability and ethical implications of this approach.

WHAT IS MIGRATION AND ECONOMIC DEVELOPMENT PARTNERSHIP (MEDP)?

- The Migration and Economic Development Partnership (MEDP) represents an innova-

tive **collaboration between the UK and Rwanda** aimed at tackling the global issue of illegal and perilous migration. The core components of the MEDP encompass:

- Facilitating the transfer of individuals who have entered the UK through illegal and perilous means to Rwanda, where their asylum applications will undergo processing.

- Comprehensive screening and provision of legal assistance for all candidates considered for relocation. Upon arrival in Rwanda, they **will receive secure and hygienic lodging, meals, healthcare, and other essential services**, alongside access to translators and legal aid.

- Disrupting the operations of organised crime syndicates engaged in human trafficking, thereby **reducing the risk of fatalities associated with hazardous migration routes**.

- Contributing to regional economic advancement by investing in skills development, infrastructure, and initiatives benefiting both migrants and the local communities in Rwanda.

- The UK has committed significant financial resources, including an initial **£120 million, to cover the expenses** of processing and integrating relocated individuals into Rwanda.

- However, the MEDP had encountered legal obstacles, with the UK's Supreme Court ruling in November 2023 that there were substantial grounds to believe that asylum seekers deported to Rwanda might face the risk of being sent back to their countries of origin.
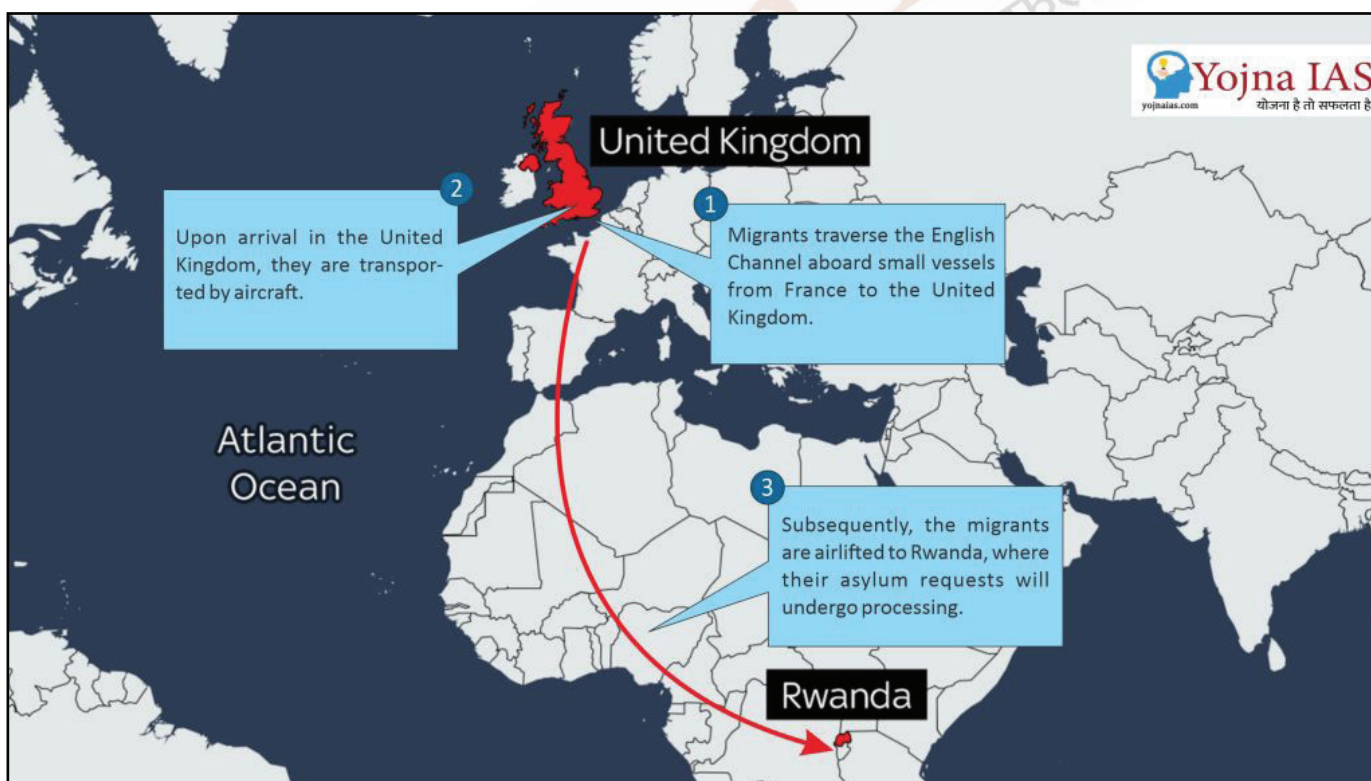
CRITICISM OF THE RWANDA BILL

- **International Law:** Critics argue that the MEDP violates the 1951 Refugee Convention, which prohibits refoulement – the act of returning a refugee to a country where they face persecution. Sending asylum seekers to Rwanda, a country with a chequered human rights record, raises concerns about their safety and well-being.

- **Human Rights Concerns:** Human rights organisations have documented cases of arbitrary detention, torture, and suppression of dissent in Rwanda. Critics argue that relocating asylum seekers to Rwanda puts them at risk of further human rights violations.

- **Effectiveness:** The policy's effectiveness in deterring illegal immigration is debatable. Some argue that it creates a bureaucratic nightmare and may simply displace the problem rather than solve it. Others point out that those most desperate to seek asylum may be undeterred by the prospect of relocation.

- **Ethical Concerns:** The very idea of a wealthy nation outsourcing its asylum responsibilities to a developing country raises ethical concerns. Critics argue that the MEDP abdicates the UK's responsibility to uphold its obligations under international law.

- **Cost and Logistics: The financial viability and logistical feasibility have been questioned. The cost of relocating**, processing claims, and supporting asylum seekers in Rwanda is significant. Additionally, concerns exist about Rwanda's capacity to handle a large influx of asylum seekers.

COUNTRIES WITH SIMILAR POLICIES:

- **Australia:** Implemented a well-known **"offshoring" policy in 2001**, transferring asylum seekers arriving by boat **to detention centres in Nauru and Papua New Guinea** for claim processing. This policy, criticised for its human rights implications and high cost, has seen substantial decline in boat arrivals but not overall asylum applications.

- **Israel:** From 2013 to 2018, **Israel offered Eritrean and Sudanese asylum seekers a choice between returning to their home countries, detention in Israel, or relocation to Rwanda** with a chance to claim asylum there. However, reports suggest many weren't allowed to claim asylum in Rwanda and continued their journeys to Europe, raising concerns about refoulement (forced return).

- **Denmark:** Passed legislation in 2021 allowing them to send asylum seekers outside the EU for processing and **signed a memorandum of understanding with Rwanda on cooperation regarding asylum and migration.** While not a direct transfer agreement, it was seen as a potential precursor. Following a government change, Denmark seems to be exploring options within the EU rather than a bilateral deal with Rwanda.

- **European Union:** The EU has pursued various approaches. The EU-Turkey deal **aimed to limit asylum seekers reaching the bloc by returning those arriving in Greece to Turkey,** with Turkey receiving aid in return. This deal saw a significant decrease in arrivals but faced criticism for its impact on asylum seekers returned to Turkey. The EU has also funded a voluntary program with UNHCR to relocate vulnerable refugees out of Libya to Rwanda for resettlement in third countries.

- **Italy:** A plan (currently on hold) was recently announced to transfer migrants rescued at sea to Albania for claim processing by Italian authorities, with successful claimants receiving asylum in Italy. This differs from the UK's plan as Albania wouldn't be responsible for processing claims itself.

PRELIMS PRACTISE QUESTION

Q1. Consider the following countries:

1. Democratic Republic of the Congo
2. Tanzania
3. Uganda
4. Libya

How many of the above countries are Rwanda's neighbours?

(a) Only one

(b) Only two

(c) Only three

(d) All four

Answer: C

MAINS PRACTISE QUESTION

Q1. When assessing the impact of illegal migration on local communities, how should policymakers weigh concerns about strain on resources, cultural integration, and social cohesion against humanitarian considerations?

Q2. In what ways can sending back illegal migrants uphold or compromise basic human rights principles, and how should these factors influence decision-making?

PAYMENT AGGREGATOR

THIS ARTICLE COVERS 'DAILY CURRENT AFFAIRS' AND THE TOPIC DETAILS OF "PAYMENT AGGREGATOR". THIS TOPIC IS RELEVANT IN THE "ECONOMY" SECTION OF THE UPSC CSE EXAM.

WHY IN THE NEWS?

- Recently, The Reserve Bank of India (RBI) released draft guidelines to strengthen further regulations on payment aggregators, a move aimed at boosting the payment ecosystem. The draft also covers the physical point-of-sale activities of payment aggregators (PAs).

- The RBI said that given the growth in digital transactions and the significant role that PAs play in this space, the current directions on PAs are proposed to be updated and cover, among other things, KYC and due diligence of merchants, operations in Escrow accounts, and in-

tended to strengthen the payment ecosystem. The RBI has invited comments/feedback by May 31.

- According to the draft, PAs shall ensure that marketplaces onboarded by them do not collect and settle funds for services not offered through their platform. The draft also said non-banks providing PA-P services should have a minimum net worth of ₹15 crore when submitting an application to the RBI for authorisation and a minimum net worth of ₹25 crore by March 31, 2028. The net worth of ₹ 25 crore shall always be maintained after that.

WHAT IS A PAYMENT AGGREGATOR?

A Payment Aggregator is a third-party service that offers merchants a single platform to accept various payment methods, such as credit cards and digital wallets. This simplifies the payment process and expands customer options. Payment aggregators handle the technical aspects of payment processing, including transaction routing, security, fraud detection, and settlement. They may also provide additional reporting, analytics, and customer support services.

Some popular payment aggregators include companies in India like Razorpay, Paytm and PayPal. These companies serve a wide range of businesses, from small online retailers to large multinational corporations, and play a crucial role in facilitating electronic commerce. The key functions of the Payment Aggregator are:

- Integration: Merchants integrate the payment aggregator's services into their website, mobile app, or point-of-sale system. This integration typically involves incorporating payment gateway APIs or plugins the aggregator provides.

- Payment Processing: Payment aggregators facilitate accepting various payment methods, including credit cards, debit cards, digital wallets, bank transfers, and more. They handle the technical aspects of payment processing, such as authorizing transactions, securely transmitting payment data, and settling funds.

- Payment Collection: When customers make a purchase or transaction on the merchant's platform, they proceed to the checkout or payment page. The payment aggregator securely collects the customer's payment information, such as credit card details or digital wallet credentials.

- Transaction Routing: Once authorized, the payment aggregator routes the transaction to the respective payment networks or banks associated with the customer's payment method. This may involve multiple intermediaries, especially for cross-border transactions or transactions involving different payment methods.

- Compliance: Aggregators ensure compliance with regulatory requirements and industry standards governing payment processing. This includes adhering to data protection laws, complying with PCI DSS (Payment Card Industry Data Security Standard) requirements, and following guidelines set by regulatory bodies such as the Reserve Bank of India (RBI) in the case of India.

- Customer Support: Payment aggregators typically offer customer support services to merchants and customers. This may include assistance with technical issues, payment disputes, refunds, and general inquiries related to payment processing.

- Settlement: After the transaction is successfully processed, the payment aggregator initiates the settlement process. They reconcile the transaction, deduct any applicable fees (such as transaction fees or processing fees), and transfer the remaining funds to the merchant's designated bank account.

PRELIMS PRACTICE QUESTION:

Q. Which of the following institutions regulate the online transaction in India?

A. Security Exchange Board of India.

B. Department of Economic Affairs.

C. Reserve Bank of India.

D. State Bank of India.

ANSWER: C

MAINS PRACTICE QUESTION:

Q. **"What is a Payment Aggregator, and how does it streamline online transactions for merchants and consumers?"**

Q. **"What are the key regulations governing payment aggregators in India, and how do they impact the operation and security of online transactions?"**