



# Yojna IAS

योजना है तो सफलता है

## MAY 2024

### WEEKLY CURRENT AFFAIRS

**YOJNA IAS WEEKLY CURRENT AFFAIRS**  
**20/05/2024 TO 26/05/2024**

**Delhi Office**

706 Ground Floor Dr. Mukherjee Nagar  
Near Batra Cinema Delhi – 110009  
**Contact No. : +91 8595390705**

**Noida Office**

Basement C-32 Noida Sector-2  
Uttar Pradesh 201301  
**website : [www.yojnaias.com](http://www.yojnaias.com)**



# WEEKLY CURRENT AFFAIRS CONTENTS

S.No.	Topics	Page No.
1.	INCREASED INTENSITY OF DUST STORMS	1 - 4
2.	THE HUMAN PAPILLOMAVIRUS	4 - 7
3.	EXPANSION OF MILK COOPERATIVE FROM LOCAL TO INTERNATIONAL BRAND”	7 - 10
4.	GREEN CREDIT PROGRAM (GCP)	10 - 13
5.	SUDDEN DEMISE OF IRANIAN PRESIDENT AND INDO-IRAN RELATIONS	13 - 17
6.	PREVENTION OF MONEY LAUNDERING ACT (PMLA), 2002	17 - 21
7.	WHY SOUTHEAST ASIA EMERGED AS A HUB OF ORGANISED FINANCIAL CRIMES	21 - 24
8.	THE GLOBAL REPORT ON NEGLECTED TROPICAL DISEASES 2024	24 - 27
9.	MICROPLASTIC IN ASHTAMUDI LAKE	27 - 31
10.	ECONOMIC CAPITAL FRAMEWORK (ECF)	31 - 33
11.	THE 10TH WORLD WATER FORUM	33 - 36



# CURRENT AFFAIRS

MAY 2024

## INCREASED INTENSITY OF DUST STORMS

THIS ARTICLE COVERS 'DAILY CURRENT AFFAIRS' AND THE TOPIC DETAILS OF "**INCREASED INTENSITY OF DUST STORMS**". THIS TOPIC IS RELEVANT IN THE "**ENVIRONMENT AND ECOLOGY**" SECTION OF THE UPSC CSE EXAM.

### Why in the News?

Recently, several cities, including Mumbai and Delhi, witnessed Dust storms with extremely high wind speeds. These dust storms caused interruptions, leading to the suspension of flight operations at Mumbai airport. Unfortunately, 14 people lost their lives in Mumbai when a billboard fell over because of the powerful winds.

### ABOUT DUST STORMS

- A dust storm, or sandstorm, is a weather event frequently seen in dry and semi-dry areas. It happens when strong winds, typically generated by thunderstorms, lift loose sand and dirt from dry surfaces into the atmosphere. This process involves fine particles being carried by saltation and suspension, relocating soil from one area to another.
- Such storms are common in places like **North Africa, the Middle East, Central Asia, and China**, where dry conditions and strong winds facilitate the rise of dust particles into the air.

### WHAT CAUSES THE DUST STORMS?

- **Wind:** Strong winds, often resulting from thunderstorms or significant pressure gradients, are crucial in the development of dust storms. These winds can pick up loose sand and dirt from dry surfaces, starting the formation process of dust storms.
- **Soil Conditions:** Regions that are dry and arid with loose, dry soil are particularly vulnerable to dust storms. The lack of vegetation cover and the presence of fine soil particles make it easier for the wind to lift and carry dust into the air.

- **Geographical Features:** Flat areas with little vegetation, such as deserts and semi-arid regions, are more likely to experience dust storms. These landscapes allow winds to gather speed and transport dust particles over long distances, contributing to dust storm formation.
- **Meteorological Conditions:** Certain weather patterns, such as high temperatures and low humidity, can dry out the soil further, making it more likely to be picked up by winds.
- **Human Activities:** Poor farming and grazing practices, as well as land mismanagement, can exacerbate the susceptibility of an area to dust storms.
- Activities like intensive tillage, deforestation, and overgrazing can increase soil erosion and create conditions conducive to dust storm formation.

## KEY IMPACTS OF DUST STORMS

### Environmental Impacts:

- **Soil Erosion:** Dust storms strip the topsoil, reducing soil fertility and leading to desertification.
- **Air Quality:** They significantly decrease air quality by increasing the concentration of particulate matter in the atmosphere.
- **Ecosystem Disruption:** Dust deposition can affect plant photosynthesis and reduce the availability of nutrients, disrupting ecosystems.

### Health Impacts:

- **Respiratory Issues:** Fine dust particles can penetrate deep into the lungs, causing or exacerbating respiratory conditions such as asthma and bronchitis.
- **Eye Irritation:** Dust can cause eye irritation and infections.
- **Allergies and Skin Conditions:** Exposure to dust can trigger allergies and skin conditions.

### Economic Impacts:

- **Agriculture:** Dust storms can damage crops, reduce agricultural productivity, and degrade arable land.
- **Transportation:** Reduced visibility due to dust can lead to accidents and disrupt air and ground transportation.
- **Infrastructure:** Dust accumulation can damage machinery, buildings, and other infrastructure.

### Social Impacts:

- **Displacement:** Severe dust storms can displace populations, especially in rural areas dependent on agriculture.
- **Livelihoods:** The economic downturn caused by dust storms can affect livelihoods, especially those reliant on farming and livestock.

### Climate Impacts:

- **Atmospheric Effects:** Dust particles can influence weather patterns and climate by affecting solar radiation and cloud formation.
- **Ocean Fertilization:** Dust deposited in oceans can affect marine ecosystems by providing nutrients that promote phytoplankton growth.



## RELATION BETWEEN CLIMATE CHANGE AND DUST STORMS

Climate change is greatly influencing the frequency and intensity of dust storms globally. Dust storms are projected to become more severe and frequent in the future due to rising global temperatures. Experts suggest that as global temperatures rise, soil will become drier, making it easier for wind to carry more soil, thereby intensifying dust storms.

## HOW TO MITIGATE THE EFFECTS OF DUST STORMS?

- **Soil Management and Conservation:**
  - **Vegetation Cover:** Planting trees and maintaining vegetation cover helps anchor the soil and reduce wind erosion.
  - **Crop Rotation and Cover Crops:** Crop rotation and planting cover crops can improve soil health and stability.
  - **Terracing and Contour Ploughing:** These agricultural techniques reduce surface runoff and soil erosion.
- **Land Use Management:**
  - **Sustainable Grazing Practices:** Implementing controlled grazing to prevent overgrazing and land degradation.
  - **Afforestation and Reforestation:** Establishing new forests and restoring degraded ones can help reduce soil erosion.
  - **Controlled Urban Development:** Planning and regulating urban development to minimise land disturbance and soil exposure.
- **Technological Solutions:**
  - **Windbreaks and Shelterbelts:** Installing barriers such as trees, shrubs, or artificial structures reduces wind speed and protects soil.
  - **Soil Binding Agents:** Applying substances that help bind soil particles together, reducing the likelihood of wind erosion.
  - **Dust Suppression Techniques:** Using water sprays, mulch, or other suppressants on exposed soil surfaces in construction sites and other vulnerable areas.
- **Monitoring and Early Warning Systems:**
  - **Satellite and Remote Sensing:** Utilizing satellite imagery and remote sensing technology to monitor soil conditions and predict dust storms.
  - **Weather Forecasting and Alerts:** Developing advanced weather forecasting systems to warn early about impending dust storms.
- **Policy and Community Initiatives:**
  - **Environmental Regulations:** Implementing and enforcing regulations to control activities contributing to soil erosion and dust storms.
  - **Public Awareness and Education:** Educating communities about the causes and impacts of dust storms and promoting best practices for soil conservation.
  - **Disaster Preparedness Plans:** Developing and implementing plans for and responding to dust storms, including health advisories and infrastructure protection measures.

### Prelims Based Question

**Q1. Which of the following regions is most vulnerable to Dust storms?**

- (a) Temperate grasslands
- (b) Boreal forest
- (c) Arid and semi-arid regions
- (d) Tropical evergreen forest

**ANSWER: C**

### Mains Based Question

**Q1. What strategies and measures can be implemented to mitigate the impacts of dust storms, and how can communities and policymakers work together to reduce their occurrence and effects?**

## THE HUMAN PAPILLOMAVIRUS

THIS ARTICLE COVERS 'DAILY CURRENT AFFAIRS' AND THE TOPIC DETAILS OF "THE HUMAN PAPILLOMAVIRUS". THIS TOPIC IS RELEVANT IN THE "SCIENCE & TECHNOLOGY" SECTION OF THE UPSC CSE EXAM.

### WHY IN THE NEWS?

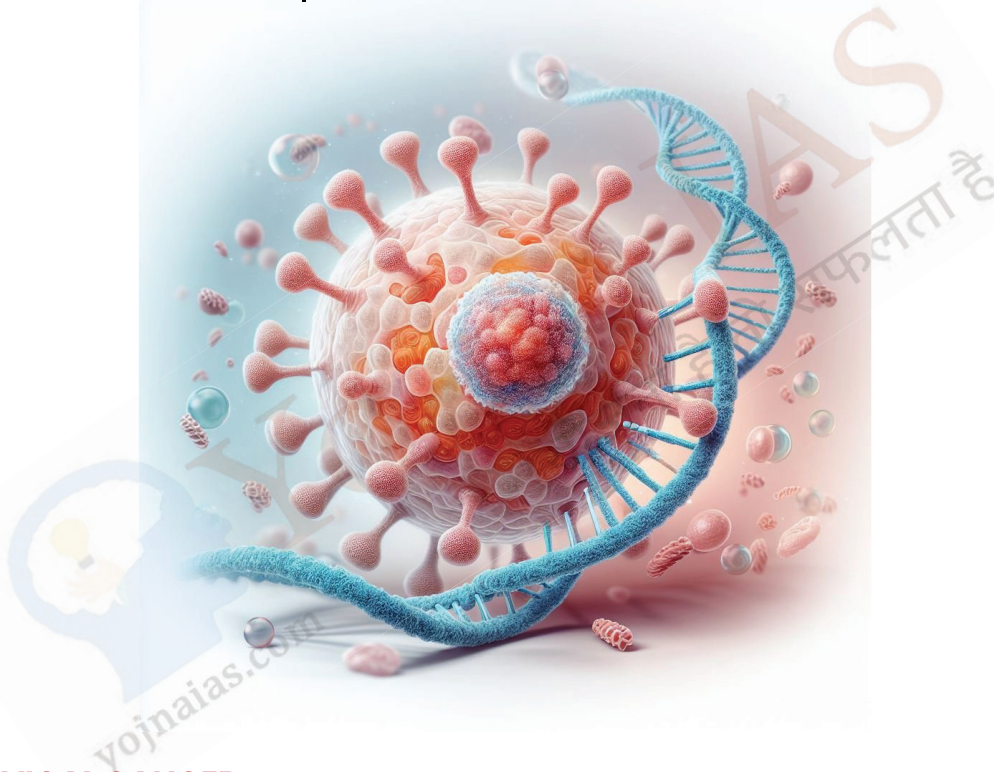
A study by Cancer Research UK and Queen Mary University of London shows the HPV vaccine lowers cervical cancer rates, especially in less affluent communities, marking a significant impact in England.

### KEY POINTS OF THE STUDY:

1. The study shows the HPV vaccine reduces cervical cancer across all socio-economic levels, especially in more deprived groups.
2. Researchers found that cervical cancer prevention was higher in the most deprived group due to its higher incidence rate.
3. The study showed the school vaccination program significantly reduced health inequalities through effective public health measures.
4. Studies have shown that, over 12 years, the HPV vaccine led to a decrease in cervical cancer rates by almost 90%.
5. The occurrence of pre-cancerous conditions dropped by approximately 95%.
6. These significant reductions were observed in women who were vaccinated at the ages of 12 to 13 in England.
7. The study shows the vaccine is much more effective when given to children 12-13 years old than later in life.

## WHAT IS HUMAN PAPILLOMAVIRUS?

- Human Papillomavirus (HPV) is a group of related viruses that can infect human skin and mucous membranes. There are over 200 types of HPV, and they are categorised into low-risk and high-risk types based on their association with certain health conditions. The HPV virus causes more than 95% of cervical cancer.
- It is the most common sexually transmitted infection (STI) globally. It can be transmitted through skin-to-skin contact.
- Most individuals don't show symptoms after infection and remain unaware of the virus's presence. In most cases, the immune system can detect and eliminate HPV. However, when the virus persists in the body over an extended period, it has the potential to lead to cancer.
- Preventing diseases related to HPV, such as cervical cancer, is possible through vaccination and safe sex practices.



## ABOUT CERVICAL CANCER:

Cervical cancer is a type of cancer that occurs in the cells of the cervix, which is the lower part of the uterus that connects to the vagina. In a small percentage of people, the virus survives for years, contributing to the process that causes some cervical cells to become cancer cells. It is one of the most common cancers affecting women worldwide.

The leading cause of cervical cancer is infection with certain types of human papillomavirus (HPV), which is a common sexually transmitted infection. While most individuals who are sexually active may contract HPV at some stage, often, the body's immune system successfully eradicates the virus without leading to any health issues. Nonetheless, there are cases where the infection does not get cleared and instead causes gradual alterations in the cells of the cervix, which may ultimately progress into cancer. **There are several risk factors for cervical cancer, including:**

- **HPV infection:** Certain strains of HPV, particularly high-risk types such as HPV 16 and 18, are strongly associated with cervical cancer.
- **Sexual activity:** Early age at first sexual intercourse, multiple sexual partners, and having a partner with multiple sexual partners increase the risk of HPV infection and, subsequently, cervical cancer.
- **Smoking:** Smoking tobacco increases the risk of cervical cancer, possibly due to the harmful substances in tobacco smoke affecting the cells of the cervix.
- **Weakened immune system:** Conditions or medications that weaken the immune system, such as HIV infection or immunosuppressive drugs, can increase the risk of HPV persistence and cervical cancer.
- **Not getting screened regularly:** Regular screening with Pap smears or HPV tests can detect precancerous changes in the cervix, allowing for early treatment and prevention of cancer.

Globally, cervical cancer ranks as the second most prevalent type of cancer and is the second leading cause of cancer-related deaths among women aged 15 to 44. The International Agency for Research on Cancer (IARC) of the World Health Organization reports that India bears about 20% of the worldwide incidence of this disease. Annually, India sees around 123,000 new cases and suffers close to 67,000 fatalities due to cervical cancer, translating to a loss of one woman every eight minutes.

CERVAVAC, India's first indigenously developed cervical cancer vaccine by the Serum Institute of India, is a quadrivalent vaccine targeting four HPV types. It is based on VLP (virus-like particles), similar to the hepatitis B vaccine, and protects by generating antibodies against the HPV protein. The VLP approach stimulates an immune response from the body, resulting in the production of antibodies.

In the initial stages, cervical cancer might not show any symptoms, emphasising the importance of routine check-ups. However, as cancer progresses, symptoms may include Abnormal vaginal bleeding, such as bleeding between periods, after sex, or after menopause. Pelvic pain or pain during intercourse. Unusual vaginal discharge that may be bloody, watery, or foul-smelling.

Treatment options for cervical cancer depend on factors such as the stage of the cancer, the woman's age and overall health, and her preferences. Treatment may include surgery, radiation therapy, chemotherapy, or a combination.

Prevention is also a key aspect of managing cervical cancer. This includes:

- **Vaccination:** HPV vaccines are available to protect against certain high-risk strains of the virus. Vaccination is recommended for adolescents, ideally before they become sexually active.
- **Safe sex practices:** Using condoms during sexual activity can reduce the risk of HPV transmission.
- **Regular screening:** Pap smears or HPV tests are essential for early detection of precancerous changes in the cervix, allowing for timely intervention and treatment.

### **PRELIMS PRACTICE QUESTION:**

**Q. Consider the following statements:**

1. Cervical Cancer is mainly caused by long-term infection with particular forms of



Human Papillomavirus (HPV).

2. The Human Papillomavirus can spread through skin-to-skin contact.

**Which of the statement(s) given above is/are correct?**

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

**ANSWER: C**

### **MAINS PRACTICE QUESTION:**

**Q. What is cervical cancer, and how does it develop? Discuss the latest research and developments in the treatment of cervical cancer.**

## **EXPANSION OF MILK COOPERATIVE FROM LOCAL TO INTERNATIONAL BRAND"**

**THIS ARTICLE COVERS "DAILY CURRENT AFFAIRS" AND THE TOPIC DETAILS OF " EXPANSION OF MILK COOPERATIVE FROM LOCAL TO INTERNATIONAL BRAND". THIS TOPIC IS RELEVANT IN THE "ECONOMICS" SECTION OF THE UPSC- CSE EXAM.**

### **WHY IN THE NEWS?**

India's largest dairy cooperative **Amul** has started selling fresh milk and other products in the United States in partnership with a Michigan Milk Producers Association (MMPA, a century old local cooperative body) to sell fresh milk in East Coast and the Midwest markets.

### **MORE IN THE NEWS:**

- **The Gujarat Cooperative Milk Marketing Federation (GCMMF)**, an umbrella body of district-level milk cooperatives in Gujarat, markets and sells dairy products under the brand Amul.
- **Amul** will handle the marketing and branding of fresh milk products in the joint venture, while milk procurement and processing will be done by the Michigan Milk Producers Association (MMPA)
- **GCMMF** has expanded its market reach by exporting a diverse range of Amul products, such as paneer, cheese, ice creams, chocolates, and various other dairy items, to over 50 countries worldwide. These products are particularly popular among the Indian diaspora communities in regions like West Asia and Africa, where they cater to the tastes and preferences of diverse consumer groups.

## HISTORY OF THE SUCCESS OF AMUL COOPERATIVE :

It has been a result of its innovative business model, strong leadership, and focus on quality products rather than any instances of plagiarism. Amul has built its success on principles of cooperation, empowering farmers, and delivering value to consumers.

### Their growth has been marked by several key factors:

- **Cooperative Model:** Amul operates as a cooperative society owned and governed by the farmers themselves. This model ensures that the benefits of the business are shared among its members, fostering a sense of ownership and commitment to the cooperative's success.
- **Quality Products:** Amul is renowned for its high-quality dairy products, including milk, butter, cheese, and ice cream and commitment to quality has helped them build a strong brand reputation over the years.
- **Marketing Innovations:** Amul has pioneered innovative marketing strategies, notably through its iconic "Amul girl" advertisements. These ads, featuring topical and witty commentary on current events, have helped Amul stay relevant and connect with consumers across generations.
- **Expansion and Diversification:** Over the years, Amul has expanded its product range and diversified into new markets, both domestically and internationally. This strategic approach to growth has enabled the cooperative to capitalise on emerging opportunities and strengthen its market position.

## HOW INDIAN MILK COOPERATIVE DEVELOPS INTO AN INTERNATIONAL BRAND :

The history of Indian milk cooperatives, particularly exemplified by the Amul Cooperative, is a remarkable tale of grassroots empowerment, innovative leadership, and socioeconomic transformation.

- **Formation of Amul:** The story of Indian milk cooperatives begins with the establishment of the Kaira District Cooperative Milk Producers' Union Limited (Amul) in 1946 in Gujarat, India. It was founded by visionary leaders like **Tribhuvandas Patel** and **Verghese Kurien**, who aimed to empower local dairy farmers and improve their livelihoods.
- **White Revolution:** The launch of the **Operation Flood** program in 1970, also known as the **White Revolution**, witnessed a significant turning point in the history of Indian milk cooperatives. This initiative, led by Dr Verghese Kurien, aimed to replicate the success of Amul's cooperative model across India by organising small-scale dairy farmers into cooperatives, establishing **milk collection centres**, and **modernising dairy processing facilities**.
- **Expansion and Replication:** Through Operation Flood and subsequent initiatives, the network of milk cooperatives expanded rapidly across India. State-level cooperative federations, such as the **Gujarat Cooperative Milk Marketing Federation (GCMMF)**, were established to coordinate the activities of local dairy cooperatives and **facilitate the marketing and distribution of dairy products**.
- **Impact on Rural Economy:** By providing farmers with access to fair prices, technical support, and marketing infrastructure, cooperatives have helped alleviate poverty,

- generate employment, and stimulate economic development in rural communities.
  - **Technological Innovations:** Indian milk cooperatives have embraced technological innovations to enhance milk production, quality, and processing efficiency. This includes the adoption of modern dairy farming practices, mechanisation of milk collection and processing operations, and the introduction of quality control measures.
  - **Brand Building and Marketing:** Amul, in particular, is renowned for its iconic advertising campaigns featuring the “Amul girl” and catchy slogans. These marketing initiatives have helped build brand recognition and consumer loyalty for Indian dairy products both domestically and internationally.
  - **Global Recognition:** Indian milk cooperatives, particularly Amul, have gained recognition on the global stage for their success in transforming the dairy industry and empowering farmers. Amul’s cooperative model has been studied and replicated in other countries facing similar challenges in dairy farming and rural development.
- The history of Indian milk cooperatives is a testament to the power of collective action, community empowerment, and sustainable development. It’s a narrative that’s entirely original and represents a uniquely Indian approach to addressing the challenges of agriculture and rural poverty.**

#### **EXPANSION OF THE AMUL TOWARDS THE INTERNATIONAL MARKET:**

- **Market Research:** Before entering any international market, Amul go through market research and analysis to understand consumer preferences, competition, and regulatory requirements. This ensures that their products are tailored to meet the specific needs of each market.
- **Adaptation:** Amul adapts its products and marketing strategies to suit the cultural and dietary preferences of each international market. For example, they may modify product formulations or packaging according to local tastes and preferences.
- **Distribution Channels:** Amul strategically builds robust distribution channels in global markets, frequently collaborating with indigenous distributors or retailers to guarantee the extensive accessibility of its product range.
- **Brand Building:** Amul focuses on building its brand presence in international markets through strategic marketing initiatives, including advertising campaigns, sponsorships, and partnerships with local influencers or organisations.
- **Compliance:** Amul complies with all relevant laws and regulations in the particular countries where it operates, including food safety standards, labelling requirements, and import/export regulations.

#### **SIGNIFICANCE OF AMUL PRESENCE IN THE INTERNATIONAL MARKET :**

- **Cultural Connection:** Amul products serve as a cultural bridge, offering a taste of home to the Indian diaspora spread across more than 50 countries. This connection to familiar flavours and traditions helps maintain cultural ties and fosters a sense of belonging among expatriate communities.
- **Economic Impact:** Amul’s international presence contributes significantly to India’s economy by generating export revenue and creating employment opportunities within the country. Expanding into new markets enhances India’s trade relations and

strengthens its position in the global dairy industry.

- **Global Learning and Growth:** Engaging in international trade exposes Amul to new technologies, best practices, and market trends in different regions. This cross-cultural exchange fosters learning and innovation within the organisation, enabling continuous improvement and sustainable growth in domestic and international markets.
- **Targeting the diaspora:** The primary targets are the Indian diaspora and Asian communities, but eventually, options will also be explored to go to other markets beyond the U.S.

**In essence, Amul's presence in the international market strengthens its position as a global leader in dairy products and contributes to India's socio-economic development while promoting cultural exchange and mutual understanding at a worldwide level.**

### PRELIMS BASED QUESTION:

**Q. Consider the following statements:**

1. Dairy cooperatives typically operate under a centralised structure, with decisions made solely by top management.
2. India is the biggest country in terms of milk productivity.

**Which of the following statements is /are correct?**

1. 1 Only
2. 2 Only
3. Both 1 and 2
4. Neither 1 nor 2

**ANSWER: D**

### MAINS BASED QUESTION:

1. **Discuss India's milk cooperative model, especially Amul, which can be replicated in the agriculture sector to double farmer's income.**

## GREEN CREDIT PROGRAM (GCP)

THIS ARTICLE COVERS 'DAILY CURRENT AFFAIRS' AND THE TOPIC DETAILS OF "GREEN CREDIT PROGRAM (GCP)". THIS TOPIC IS RELEVANT IN THE "ENVIRONMENT" SECTION OF THE UPSC CSE EXAM.

### WHY IN THE NEWS?

The Centre government has approved 12 greening projects under the Green Credit



Program (GCP), which was notified last year as a market-based mechanism designed to incentivise voluntary environmental actions across diverse sectors. The officials said estimates of 24 plans submitted by different state forest departments are under consideration. The government has been pushing the public-sector undertakings (PSUs) to take the lead in registering for the programme, especially in mining-heavy states.



### **ABOUT GREEN CREDIT PROGRAMME:**

- The Indian PM launched the Green Credit Initiative on the sidelines of COP 28 (held in 2023 at Expo City, Dubai, United Arab Emirates). This initiative is a part of the government's Lifestyle for Environment (LiFE) movement. The Prime Minister presented the LiFE Concept at COP26 in Glasgow in 2021, aiming to foster a global movement focused on conscious and purposeful consumption to safeguard and sustain the environment.
- The Green Credit Programme (GCP), initiated by the Union Environment Ministry, promotes investments in reforestation activities on degraded forest lands to produce 'green credits.'
- The GCP has launched a market-oriented strategy to motivate participation in eight specific environmental initiatives. Its primary goal is to create a system that allows participants to receive rewards through 'Green Credits' for their involvement. This initiative promotes voluntary environmental efforts among individuals, organisations, and businesses.
- The objective of the GCP is to encourage sustainable practices and conserve the environment. It highlights the importance of sustainability, minimising waste, and enhancing the quality of our natural surroundings.
- Some objectives are to improve India's forest and tree cover, build an inventory of degraded land suitable for plantation under the control and management of Forest Departments, and encourage the participation of individuals and entities in

pro-planet actions by rewarding Green Credits.

- The GCP is overseen by the Indian Council of Forestry Research and Education (ICFRE). It is planned to be implemented in stages, starting with efforts on water management and tree planting in the initial phase. **Subsequent phases will cover activities such as:**
  - **Planting Trees:** Efforts to expand green spaces and fight deforestation.
  - **Managing Water:** Strategies to efficiently conserve and use water resources.
  - **Eco-friendly Farming:** Encouraging agricultural methods that are both productive and sustainable.
  - **Managing Waste:** Developing systems to minimise pollution from waste.
  - **Reducing Air Pollution:** Measures to reduce air pollutants and enhance air quality.
  - **Preserving Mangroves:** Activities focused on protecting and rehabilitating mangrove habitats for environmental stability.

## WHAT IS GREEN CREDIT?

Green credit refers to financial incentives or credits provided to encourage and support environmentally sustainable practices and projects. These credits are part of a broader strategy to promote environmental conservation, reduce carbon emissions, and foster sustainable development. Green credits can take various forms, including lower interest rates on loans for green projects, grants, tax incentives, or tradable credits that can be bought and sold in environmental markets.

Green credit is similar to carbon credits in that it neutralises emissions. This approach enables both individuals and corporations to undertake tree planting or reforestation efforts on degraded land. These actions allow businesses to offset activities leading to deforestation or the conversion of forested areas to non-forested uses.

The Indian Council of Forestry Research and Education manages the issuance of green credits for these activities. Qualified activities for earning these credits span tree planting, water conservation, promoting sustainable farming practices, and efforts to reduce air pollution. The scheme encourages tree planting by awarding a green credit for each tree planted, fostering a tangible incentive to contribute to reforestation.

Under state governments, state forest departments are responsible for selecting degraded lands, such as open forests and wastelands, for tree planting. These selected lands should be free of legal claims and cover an area of at least five hectares.

Implementing and scaling green crediting systems face several challenges that need to be addressed to ensure their effectiveness and sustainability. These challenges span regulatory, financial, technical, and social dimensions. **Here are some of the primary challenges:**

- **Verification Costs:** Ensuring projects meet green standards can be expensive and time-consuming.
- **Market Demand:** Sufficient demand for green credits or bonds is necessary to drive the market and make the programmes successful.
- **Regulatory Barriers:** Inconsistent regulations across regions can hinder the development of a cohesive green credit market.
- **Awareness and Education:** Raising awareness and understanding of green credit mechanisms among businesses and investors is crucial for widespread adoption.
- **Insufficient Demand:** For green credits to effectively drive environmental proj-

ects, there must be ample interest and investment from businesses and investors. Without significant market demand, the economic sustainability of green credit initiatives can be jeopardised.

#### WAY FORWARD:

- **Policy Support:** Governments can create policies, including subsidies, tax incentives, and regulatory frameworks, to support the development and adoption of green credit programmes.
- **Public-Private Partnerships:** Collaboration between public and private sectors to pool resources and expertise, enhancing the reach and effectiveness of green credit initiatives.
- **Education and Awareness:** Raising awareness about the benefits of green credits and providing education on sustainable practices to encourage wider participation.
- **Innovation and Technology:** Leveraging technological advancements to monitor, report, and improve the impact of green projects.

#### MAINS PRACTICE QUESTION:

- Q. **How does the Green Credit Programme contribute to environmental sustainability? Discuss the Green Credit Programme to encourage community involvement and awareness about India environmental issues.**
- Q. **How does the Green Credit Program ensure equal access and opportunities for all socio-economic groups, particularly marginalised and low-income communities, to participate and benefit?**

## SUDDEN DEMISE OF IRANIAN PRESIDENT AND INDO-IRAN RELATIONS

THIS ARTICLE COVERS 'DAILY CURRENT AFFAIRS' AND THE TOPIC DETAILS OF "**SUDDEN DEMISE OF IRANIAN PRESIDENT AND INDO-IRAN RELATIONS**". THIS TOPIC IS RELEVANT IN THE "**INTERNATIONAL RELATION**" SECTION OF THE UPSC CSE EXAM.

#### Why in the News?

Iran's president Ebrahim Raisi, along with the foreign minister and several other officials, were discovered dead shortly after their helicopter went down in the northwest region of the country. In the wake of this tragedy, Iran's Supreme Leader Ayatollah Ali Khamenei declared that **First Vice President Mohammad Mokhber** would take over as interim president.

## POLITICAL STRUCTURE OF IRAN:

- **Supreme Leader (Rahbar):** The highest political and religious authority in Iran. Ayatollah Ali Khamenei has held this position since 1989.
- **President:** Serving as the head of government and the second-highest official after the Supreme Leader, the president is elected by popular vote for a four-year term and can serve a maximum of two terms. Following Ebrahim Raisi's death, Mohammad Mokhber is the interim president.
- **Guardian Council:** This 12-member council reviews political candidates and legislation. It includes 6 theologians appointed by the Supreme Leader and 6 attorneys nominated by the judiciary and subjected to approval by parliament.
- **Islamic Consultative Assembly (Majlis):** Iran's legislative body, comprising 290 members elected by the people for four-year terms.
- **Assembly of Experts:** This 88-member body of Islamic scholars is elected by the public for eight-year terms. Its main functions include appointing, monitoring, and potentially dismissing the Supreme Leader.
- **Expediency Discernment Council:** An advisory council that resolves conflicts between the Majlis and the Guardian Council and provides advice to the Supreme Leader on state matters.

## PRESIDENT'S DEATH AND IMPACT ON IRANIAN POLITICS

- **Political Instability:** Raisi's death has created a leadership gap in Iran, necessitating the appointment of an interim president and the organization of new elections within 50 days. This abrupt leadership change has disrupted the country's political stability and decision-making processes.
- **Succession Uncertainty:** Raisi was not only the president but also considered a potential successor to Supreme Leader Ayatollah Khamenei. His passing has created uncertainty about the succession plan and the future leadership of Iran, sparking speculation about who will assume the roles of the next president and Supreme Leader.
- **Power Struggle:** The absence left by Raisi's death could ignite a power struggle among Iran's political elite, with various factions and interest groups competing for influence and control. This internal competition could influence the direction of Iran's domestic and foreign policies.
- **Continuity vs. Change:** Analysts are divided on whether Raisi's death will maintain Iran's current political course or lead to significant changes. Some predict continuity, while others believe this event could allow certain groups, such as the Islamic Revolutionary Guard Corps (IRGC), to increase their influence.
- **Foreign Policy Implications:** The sudden leadership change in Iran could affect its foreign policy, especially in relation to the United States and Israel. While the core issues between these countries are likely to remain, the new leadership might introduce subtle shifts in Iran's regional and international strategies.

## HARDLINERS V/S MODERATES IN IRANIAN POLITICS

- **Foreign Policy Approach:** Hardliners typically support a more confrontational and



assertive foreign policy, especially towards Western powers like the United States, prioritizing Iran's national interests and sovereignty with a more aggressive stance in international relations. In contrast, moderates favour a diplomatic and conciliatory approach, aiming to engage with the international community and enhance Iran's global standing through dialogue and negotiation.

- **Nuclear Deal and International Relations:** Hardliners and moderates differ on the Iran nuclear deal (**Joint Comprehensive Plan of Action – JCPOA**) and Iran's global engagement. Hardliners are generally sceptical of agreements like the JCPOA, seeing them as compromises on Iran's sovereignty. Moderates, however, are more supportive of engaging with the West and international bodies, believing such agreements can bring economic and diplomatic benefits to Iran.
- **Economic Policies:** There is a clear divide between hardliners and moderates on economic strategies. Hardliners often emphasize self-sufficiency and protectionist measures to protect Iran's economy, while moderates advocate for open-market policies and international trade agreements to drive economic growth and development.
- **Social and Cultural Issues:** Hardliners and moderates frequently clash over social and cultural matters, such as women's rights, freedom of expression, and individual liberties. Hardliners usually back conservative social policies and restrictions, whereas moderates push for progressive reforms and greater personal freedoms.
- **Role of Religion in Politics:** The role of religion in governance is another contentious issue between hardliners and moderates. Hardliners often support a significant role for religious authorities in shaping government policies and societal norms, while moderates seek a more secular approach, emphasizing the separation of religion and state.

## CURRENT RELATIONS BETWEEN INDIA AND IRAN

- **Strategic Importance:** Iran's strategic position between the Persian Gulf and the Caspian Sea makes it an essential partner for India. Its abundant energy resources and close geographical proximity to India are pivotal for regional connectivity, trade, and economic collaboration.
- **Trade Relations:** India is a key trading partner for Iran, ranking among its top five. Trade between the two nations includes India's exports of rice, tea, sugar, pharmaceuticals, and electrical machinery to Iran and its **imports of dry fruits, chemicals, and glassware from Iran.**
- **Cultural Cooperation:** India and Iran enjoy strong cultural and people-to-people connections rooted in a shared civilizational history. The **Swami Vivekananda Cultural Centre, established in 2013**, has enhanced cultural exchanges, promoting tourism and cultural interaction between the countries.
- **Connectivity and Regional Cooperation:** In 2015, India and Iran signed a Memorandum of Understanding (MoU) to co-develop the **Shahid Beheshti Port at Chabahar.** This port project is a significant example of their cooperation, playing a key role in regional connectivity, communication, and shared prosperity.



## POSSIBLE IMPACT ON INDIA

- **Chabahar Port:** The development of the Chabahar Port might slow down as Iran focuses on its internal issues following Raisi's death.
- **Impact on Economy:** The global oil market could be affected, given Iran's role as a major oil producer. Any rise in oil prices could impact the Indian economy, which heavily relies on oil imports.
- **Oil Price Fluctuations:** Brent crude prices, influenced by supply cuts from oil-producing nations, have risen by 8% in 2024 but have dropped by 3% this month. As the third-largest oil producer in OPEC, changes in Iran's oil production can significantly affect India.
- **Regional Tensions:** If Iran suspected Israeli involvement in Raisi's death, escalating tensions in West Asia could also impact India, although this remains speculative at present.

## Way Forward for India

### Strengthening Economic Ties

- **Chabahar Port Development:** Finalize a long-term agreement for India's role in developing Iran's Chabahar port to attract investment and ensure the timely execution of connectivity plans.
- **Trade and Economic Cooperation:** Enhance trade with Iran, a significant market for Indian goods, and use it as a gateway to Central Asia.
- **Alternative Payment Mechanisms:** Explore ways to bypass US sanctions to maintain trade relations with Iran.

### Cooperation on Regional Issues

- **Afghanistan Policies:** Coordinate strategies on Afghanistan, where both India and Iran seek stability and an inclusive government.
- **West Asian Cooperation:** Work together on West Asian issues amidst regional rebalancing, enhancing the potential for India-Iran ties.
- **Regional Challenges:** Collaborate to address regional threats like terrorism and extremism and piracy.

### Leveraging Shared Interests

- **Strategic Connectivity:** Use Iran's strategic location to boost India's connectivity to Central Asia and Europe through initiatives like the International North-South Transport Corridor (INSTC).

- **Multilateral Collaboration:** Partner in multilateral organizations such as the Shanghai Cooperation Organization (SCO) and BRICS, adapting to the evolving global order.
- **Focused Diplomacy:** Appoint a special envoy for relations with Iran to ensure dedicated attention and timely implementation of joint plans.

### Navigating External Pressures

- **Balanced Relations:** Maintain a balanced approach in relations with Iran and other key partners like the US, Israel, and Gulf countries, while pursuing an independent foreign policy.
- **Sanctions and Tensions:** Mitigate the impact of US sanctions and Iran's conflicts with the West on India-Iran relations.

### Prelims Based Question

#### Q1. Consider the following statements:

1. Chabahar port is located in the Gulf of Oman.
2. Chabahar port is situated west of Gwadar port and east of Bandar Abbas port.

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: C**

### Mains Based Question

Q1. Considering Iran's strategic importance to India, what are the potential consequences of Raisi's death on India-Iran relations, particularly in terms of economic ties and regional cooperation?

Vishal Yadav

## PREVENTION OF MONEY LAUNDERING ACT (PMLA), 2002

THIS ARTICLE COVERS 'DAILY CURRENT AFFAIRS' AND THE TOPIC DETAILS OF "PREVENTION OF MONEY LAUNDERING ACT (PMLA), 2002". THIS TOPIC IS RELEVANT IN THE "POLITICAL SCIENCE" SECTION OF THE UPSC CSE EXAM.

### WHY IN THE NEWS?

The Supreme Court recently ruled that once a special court acknowledges a chargesheet

submitted under the Prevention of Money Laundering Act (PMLA), the Enforcement Directorate (ED) no longer has the power to detain the accused. This decision curtails the ED's arrest capabilities and underscores the importance of safeguarding individual freedom.



The decision emanated from challenging the Enforcement Directorate by appealing a decision from the Punjab and Haryana High Court, which had refused anticipatory bail. The legal debate centred on whether an accused could seek bail under the standard Code of Criminal Procedure (CrPC) protocols.

### **KEY POINTS OF SUPREME COURT RULING ON PMLA ARREST NORMS:**

- The Supreme Court underscored the importance of personal liberty, declaring that when a designated special court summons individuals under the Prevention of Money Laundering Act (PMLA), they are not deemed to be in custody. Consequently, they are not obligated to seek bail under the stringent conditions imposed by the PMLA.
- The Court determined that merely responding to a summons and appearing before a special court does not equate to being in custody. As a result, there is no need to apply for bail.
- The ruling limits the Enforcement Directorate's (ED) power to detain individuals once a special court has recognised a case. For custody, the ED is required to make a separate application and provide concrete reasons for the necessity of custodial interrogation.
- The Court indicated that the Special Court has the authority to demand that the accused submit bonds by Section 88 of the Code of Criminal Procedure. It was further clarified that providing a bond represents a commitment and should not be confused with granting bail. Consequently, the strict dual requirements outlined in Section 45 of the PMLA are not applicable in the context of bond provision.
- The Supreme Court underscored the strict bail requirements per Section 45 of the PMLA. According to it, the accused must demonstrate their initial innocence and convince the Court of their commitment not to engage in further illegal activities while out on bail, thereby imposing a heavy proof burden on the defendant.

### **About Section 45 of the PMLA.**

According to Section 45 of the PMLA, bail can be granted to an accused in a money laundering case only if twin conditions are satisfied:

- 1. Imposing Stringent Bail Conditions:** It imposes rigorous bail conditions, requiring



the accused to prove their innocence.

- 2. Ensuring No Offences While on Bail:** The accused must assure the court that they will not engage in criminal activity while released on bail.

### WHAT IS THE PREVENTION OF MONEY LAUNDERING ACT (PMLA) 2002?

- The Prevention of Money Laundering Act, 2002 (PMLA) was established to curb money laundering activities and permit the seizure of assets obtained through such illegal practices. Its primary mission is to tackle the laundering of money associated with illicit undertakings like drug trafficking, smuggling, and financing of terrorism.
- According to Section 3 of the Act, an individual commits money laundering if they, directly or indirectly, engage in, support, participate in, or are implicated in any action or procedure associated with crime proceeds while presenting such proceeds as legitimate. Such an individual shall be deemed guilty of the money laundering offence.
  - **The Act was established with the following objectives:**
  - To prevent money laundering;
  - To fight against and stop the diversion of funds into illicit endeavours and economic offences;
  - To enable the seizure of assets obtained from, or implicated in, money laundering;
  - To impose penalties on those guilty of money laundering infractions;
  - To designate an adjudicating authority and an appellate tribunal to oversee matters related to money laundering and
  - To address issues related and ancillary to the phenomenon of money laundering.
    - The Prevention of Money Laundering Act underwent several amendments, starting with the Prevention of Money Laundering (Amendment) Act in 2009, followed by another amendment in 2012. It was further updated through amendments introduced by the Finance Acts of 2015, 2018, and, most recently, 2019.
    - The 2019 amendments to the Prevention of Money Laundering Act introduced a new provision, Rule 3A, which allows the Special Court to issue a public notice in newspapers. This notice invites individuals who can prove a legitimate interest in properties that have been attached, seized, or frozen to come forward and present their claims for restoration following the formal accusation of charges.
    - Section 25 of the PMLA establishes an Appellate Tribunal, which is empowered to hear appeals against the decisions made by the Adjudicating Authority.

### CONCERNING REGARDING PMLA:

- **Overreach and Misuse of Powers:** The PMLA's broad definitions can cause unwarranted scrutiny of legitimate entities due to vague connections to money laundering. The ED's significant powers under the PMLA, such as property attachment and arrests, have faced criticism for potential misuse and concerns over personal liberty violations.
- **Procedural Concerns:** Cases under the PMLA can result in extended legal battles

and financial strain for those accused. Proving innocence against money laundering charges, especially in complex transactions, can be difficult, challenging the principle of “innocent until proven guilty.”

- **Impact on Businesses:** Financial institutions must adhere to the PMLA’s demanding reporting and record-keeping rules to combat money laundering. Still, these requirements can significantly burden businesses and discourage investment due to their strictness and the fear of unpredictable enforcement.
- **Human Rights Concerns:** The practice of authorities temporarily seizing properties without swift judicial review may infringe upon property rights. There are cases where such actions have disrupted the lives and operations of people and enterprises, with slow access to legal redress. Under the PMLA, certain offences warrant arrest without the option for bail, potentially leading to prolonged detention before trial. These issues highlight the potential violation of individual liberty and the principle of fair trial.

### CONCLUSION:

The Prevention of Money Laundering Act (PMLA) of 2002 is a pivotal law aimed at deterring money laundering activities in India. It is in harmony with international norms and showcases India’s dedication to combating economic offences and maintaining the robustness of its financial architecture. The PMLA is indispensable in the fight against money laundering and upholding the financial system’s integrity. Nevertheless, addressing specific concerns is vital to boost its efficiency and fairness. Striking a balance between strict enforcement and the protection of individual rights and commercial interests is crucial for fulfilling the objectives of the Act without causing adverse side effects.

### PRELIMS PRACTICE QUESTION:

**Q. Consider the following statements:**

1. Section 25 of PMLA establishes an Appellate Tribunal to hear appeals against the Adjudicating Authority’s orders.
2. India’s Parliament enacted the PMLA under Article 253, which empowered it to make laws for implementing international conventions.

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

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

**ANSWER: C**

### MAINS PRACTICE QUESTION:

**Q. Discuss the ethical considerations guiding PMLA enforcement to ensure it does not disproportionately impact economically disadvantaged or marginalized**

**groups. What mechanisms should be under the PMLA to ensure transparency and accountability in the surveillance and investigation of financial transactions?**

## **WHY SOUTHEAST ASIA EMERGED AS A HUB OF ORGANISED FINANCIAL CRIMES**

**THIS ARTICLE COVERS "DAILY CURRENT AFFAIRS" AND THE TOPIC DETAILS OF "WHY SOUTHEAST ASIA EMERGED AS A HUB OF ORGANISED FINANCIAL CRIMES". THIS TOPIC IS RELEVANT IN THE "POLITY AND GOVERNANCE" SECTION OF THE UPSC- CSE EXAM.**

### **WHY IN THE NEWS?**

Almost half of the financial frauds targeting Indians originate from the three Southeast Asian countries of Myanmar, Cambodia and Laos.

### **MORE ABOUT THE NEWS:**

- Most web applications use the Chinese language to perform financial fraud, thereby not ruling out the Chinese connection.
- Financial crimes such as **digital arrest, stock market scams, investment scams and romance or dating scams** account for a loss of over ₹1,776 crores in 89,054 cases in the first four months of the year spurt in the organised crime from Southeast Asia.
- In the preceding four months, authorities have taken action by blocking a combined total of 325,000 mule bank accounts, 595 applications, and over 3,000 URLs to counter illicit activities.
- Numerous Indian nationals employed within a suspected fraudulent operation based in Sihanouk City, Cambodia, voiced their grievances against their employers.
- Their complaints highlight a concerning trend where individuals are either lured under false pretences or coerced into joining these establishments, often promised roles as data entry operators.
- Many of them enter Thailand on tourist visas, and due to lax border controls and human trafficking networks, they find themselves trapped in these facilities, subjected to extensive work hours. Recently, protests erupted among the Indian workers demanding the return of their passports.

## TYPES OF ORGANISED FINANCIAL FRAUD IN INDIA INCLUDE:

1. **Ponzi schemes:** These schemes lure investors with promises of unusually high returns, using funds from new investors to pay off earlier ones. Examples include the Saradha chit fund scam and the Sanjivani Credit Cooperative Society fraud.
2. **Investment scams:** These entities promise individuals with fraudulent opportunities, promising quick and guaranteed returns, often involving fictitious companies or fake investment products. The SpeakAsia Online scam is one such example.
3. **Digital banking and credit card fraud,** including phishing attacks, identity theft, and fraudulent transactions using stolen card details. The 2016 debit card data breach compromised millions of debit cardholders' data.
4. **Money laundering:** The origins of illegally obtained funds by concealing them to make them appear legitimate, often using financially vulnerable people. The INX Media money laundering case is a high-profile example.
5. **Stock market manipulation:** Through activities like price rigging, spreading false information, insider trading, and pump-and-dump schemes. The Satyam Computer Services scandal is a prime example.
6. **Bank frauds:** It encompasses loan frauds, cheque frauds, forged documents, and unauthorized transactions, resulting in substantial losses for banks and individuals. The Nirav Modi-PNB scam, where fraudulent Letters of Undertaking were issued, caused a massive loss to Punjab National Bank.

**According to a PwC survey, 57% of all fraud incidents in India were platform frauds, with more than 26% of organisations losing over USD 1 million due to such frauds[4]. Financial frauds by online transactions account for 89% of all platform frauds.**

**To combat these organised financial frauds, experts recommend strengthening internal controls, technical capabilities, and reporting, as well as mandating banks and financial institutions to provide data in a predetermined format to aid investigations.**

## REASONS FOR THE RISE OF ORGANISED FINANCIAL FRAUD IN INDIA:

- **Rapid digitisation and adoption of digital payments:** It has made it easier for fraudsters to operate anonymously and target a large number of victims. The pandemic accelerated this shift, with the average Indian company now operating 5 platforms in the normal course of business.
- **Lack of awareness and risky behaviour:** Among individuals, such as sharing sensitive financial details with others or storing them insecurely it makes them vulnerable to fraud. A survey found that 29% shared ATM pins with family, while 33% stored account details on email/computer.
- **Weak internal controls and fraud prevention measures:** Many organisations, especially smaller ones, allow fraudsters to exploit vulnerabilities in platforms and systems. Platforms now account for 89% of all fraud incidents, with 40% of companies losing over \$1 million.
- **Challenges in investigation and prosecution:** Including lack of standardised data formats from banks, difficulty in tracking devices used, and jurisdictional issues in interstate cases hamper law enforcement efforts. Recognising organised digital fraud as a serious crime and mandating preventive measures can help.
- **The lure of easy money and lack of deterrence:** With only 26% of victims able to



recover lost funds, fraudsters are encouraged to target individuals and organisations. The total value of frauds reported in 2021-22 was a staggering ₹60,414 crore.

## STRATEGIES TO COMBAT FINANCIAL FRAUD

- **Education and Awareness Campaigns:** Develop innovative educational materials and awareness campaigns targeting both individuals and businesses. Emphasise common fraud tactics, warning signs, and steps for prevention.
- **Data Analytics and AI:** Implement advanced data analytics and artificial intelligence systems to detect unusual patterns or anomalies in financial transactions. Customise these systems to your organisation's specific needs and regularly use updated version to stay ahead of evolving fraud tactics.
- **Collaboration and Information Sharing:** Foster collaboration between financial institutions, regulatory bodies to share information and best practices for fraud detection, law enforcement agencies, and and prevention.
- **Enhanced Authentication Measures:** Implement multi-factor authentication and biometric authentication methods to strengthen security and verify the identity of users during financial transactions. More use of emerging technologies such as blockchain for secure and transparent record-keeping is needed.
- **Customer Verification Processes:** Develop robust customer verification processes, especially for high-risk transactions or accounts. Utilise technology such as digital identity verification and document authentication to ensure the legitimacy of customers and transactions.
- **Regular Audits and Reviews:** Conduct regular audits and reviews of financial processes, systems, and controls to identify weaknesses or vulnerabilities that fraudsters could exploit. Implement recommendations from audits promptly to strengthen defences against fraud.
- **Whistleblower Protection:** Establish mechanisms for employees and stakeholders to report suspected fraud anonymously without fear of retaliation. Ensure that whistleblower policies comply with legal requirements and provide adequate protection to encourage reporting of fraudulent activities.
- **Regulatory Compliance:** Stay abide by regulatory changes and compliance requirements related to financial fraud prevention. Proactively adapt policies and procedures to comply with evolving regulations and industry standards.
- **Continuous Improvement and Adaptation:** Recognize that fraud tactics will evolve over time, so prioritise continuous improvement and adaptation of anti-fraud strategies. Invest in research and development to stay ahead of emerging threats and technologies.

## FIGHTING FINANCIAL FRAUD IN SOUTHEAST ASIA REQUIRES A NUANCED APPROACH :

- **Cross-Border Collaboration:** Establish partnerships and information-sharing agreements between regulatory bodies, law enforcement agencies, financial institutions and across Southeast Asian countries. Collaborate on investigations, share best practices, and coordinate efforts to combat transnational fraud schemes.
- **Localised Fraud Detection Systems:** Develop fraud detection systems that are tailored to the specific characteristics of Southeast Asian markets, languages,

and consumer behaviours. Customise algorithms and analytics models to identify patterns indicative of fraud within the region.

- **Partnerships with Fintech Startups:** Collaborate with fintech startups and technology innovators in Southeast Asia to leverage their expertise and solutions in fraud prevention. Explore partnerships for developing and implementing latest technologies like blockchain, AI, and machine learning in fraud detection systems.
- **Community Outreach and Education:** Raise awareness about common fraud schemes and prevention strategies and launch targeted educational campaigns among consumers, businesses, and vulnerable populations in Southeast Asia. Provide resources in local languages and engage with community leaders to amplify the reach of educational efforts.
- **Regulatory Advocacy and Reform:** Advocate for regulatory reforms that strengthen anti-fraud measures and enhance cooperation among Southeast Asian countries in combating financial crime.

### PRELIMS BASED QUESTIONS:

#### 1. Consider the following:

1. Counterfeiting
2. Integration
3. Layering
4. Placement

**Which of the options given below is/are correct and related to steps involved in money laundering?**

1. 1,2 and 3 Only.
2. 2,3, and 4 Only
3. 1,3, and 4 Only
4. All of the above

**Answer: B**

### MAINS BASED QUESTIONS:

1. **Examine Why Southeast Asia emerged as a hub for financial fraud in India. Discuss a resilient system to fight against this menace.**

## THE GLOBAL REPORT ON NEGLECTED TROPICAL DISEASES 2024

THIS ARTICLE COVERS 'DAILY CURRENT AFFAIRS' AND THE TOPIC DETAILS OF "THE GLOBAL REPORT ON NEGLECTED TROPICAL DISEASES 2024". THIS TOPIC IS RELEVANT IN THE "SCIENCE & TECHNOLOGY" SECTION OF THE UPSC CSE EXAM.

## WHY IN THE NEWS?

Before the 77th session of the World Health Assembly, the World Health Organization (WHO) published its 2024 Global Report on Neglected Tropical Diseases (NTDs). This document highlights the advancements achieved in 2023 in executing the 2021-2030 Roadmap for Neglected Tropical Diseases.

## KEY HIGHLIGHTS OF THE REPORT:

1. As of December 2023, 50 countries had eliminated at least one neglected tropical disease (NTD), marking halfway progress towards the 2030 target of 100 countries.
2. Five countries were recognised for eliminating one NTD, and one country for eliminating two NTDs.
3. In July 2023, Iraq became the 50th country to eliminate at least one NTD. This event marks the halfway point towards achieving the 100-country target set for 2030.
4. Noma was added to the list of NTDs in 2023.
5. In October 2023, Bangladesh became the first country to be validated by WHO for eliminating visceral leishmaniasis as a public health problem.
6. India was certified free of NTDs like dracunculiasis and yaws.
7. India, which has the highest disease burden, treated about 117 million fewer people for lymphatic filariasis and soil-transmitted helminthiasis in 2022 compared to 2021.
8. 40.56% of India's population needed interventions against NTDs in 2022.

## ABOUT NEGLECTED TROPICAL DISEASES (NTDs):

Neglected Tropical Diseases (NTDs) encompass a variety of infectious diseases prevalent in tropical and subtropical areas, impacting over a billion individuals worldwide. The term "neglected" describes these diseases since they often receive less attention and financial support than other health challenges, even though they profoundly affect health and economic progress.

Several factors play a role in the prevalence of Neglected Tropical Diseases (NTDs), such as the challenging epidemiology linked to environmental factors, diseases spread by vectors, hosts in animal populations, and their complex developmental processes. Even though they have a profound effect, NTDs are allocated significantly lower resources for their research and management when compared to diseases such as HIV/AIDS, malaria, and tuberculosis. **Some of the most prominent NTDs include:**

1. **Dengue Fever:** A mosquito-borne viral infection causing flu-like symptoms and, in severe cases, potentially fatal complications.
2. **Chagas Disease:** Caused by the parasite *Trypanosoma cruzi*, transmitted by the triatomine bug, leading to serious cardiac and digestive issues.
3. **Leishmaniasis** is a parasitic disease spread by the bite of infected sandflies. It causes skin sores and can potentially affect internal organs.
4. **Lymphatic Filariasis:** It is also known as elephantiasis. It is caused by infection with filarial worms and leads to severe swelling and disability.
5. **Schistosomiasis** is a parasitic disease caused by flatworms of the genus *Schistosoma*. It can lead to liver, urinary, and intestinal damage.

6. **Trachoma:** A bacterial eye infection caused by *Chlamydia trachomatis*, which can lead to blindness.
7. **Onchocerciasis**, also known as river blindness, is caused by the parasitic worm *Onchocerca volvulus*. It is spread by blackfly bites and leads to skin and eye disease.
8. **Soil-transmitted Helminth Infections** are caused by various parasitic worms (roundworms, whipworms, hookworms), leading to malnutrition and impaired growth and development.

### INITIATIVE TO TACKLE NTDS:

- The WHO's Roadmap for 2021-2030 focuses on maximizing impact and fostering collaboration in healthcare, sanitation, and community engagement to eradicate Neglected Tropical Diseases (NTDs).
- The 2012 London Declaration advocates for a cohesive strategy to tackle the world-wide challenge of NTDs.
- India has effectively eradicated multiple Neglected Tropical Diseases (NTDs) and is targeting the elimination of lymphatic filariasis by the year 2027, leveraging initiatives such as APELF.
- In 2005, India, Bangladesh, and Nepal, with the support of the WHO, formed a regional alliance to accelerate the early detection and treatment of at-risk groups, enhance disease monitoring, and manage sandfly populations to control Kala-azar.
- Financial support programs help people suffering from NTDs, especially those diagnosed with Post-Kala Azar Dermal Leishmaniasis, to handle the economic challenges associated with their condition.
- The Mass Drug Administration (MDA) has been implemented to prevent lymphatic filariasis in districts where it's endemic, and indoor residual spraying (IRS) is used to manage the sandfly population responsible for spreading visceral leishmaniasis.

### SOME CHALLENGES REGARDING TACKLING NTD:

1. **Funding and Resources:** NTDs often lack adequate research, prevention, and treatment funding.
2. **Health Infrastructure:** Affected regions often have poor healthcare infrastructure, complicating the delivery of interventions.
3. **Socioeconomic Impact:** NTDs contribute to a cycle of poverty, as affected individuals are often unable to work or attend school.
4. **Resistance and Co-infection:** Emerging drug resistance and co-infections with other diseases, such as HIV, complicate treatment efforts.

### WAY FORWARD:

- Distributing medications to entire populations to treat and prevent infections.
- Implementing measures to reduce the populations of disease-carrying insects, such as using insecticides and bed nets.
- Improving access to clean water and sanitation facilities and promoting hygiene



practices to reduce transmission.

- Developing and deploying vaccines to prevent NTDs where possible.
- Educating communities about the prevention, symptoms, and treatment of NTDs to reduce stigma and encourage timely medical intervention.

### MAINS PRACTICE QUESTION:

- Q. Discuss the importance of community participation in controlling and eliminating NTDs. How do climate change and environmental factors contribute to their spread?**

## MICROPLASTIC IN ASHTAMUDI LAKE

THIS ARTICLE COVERS 'DAILY CURRENT AFFAIRS' AND THE TOPIC DETAILS OF "**MICROPLASTIC IN ASHTAMUDI LAKE**". THIS TOPIC IS RELEVANT IN THE "**ENVIRONMENT AND ECOLOGY**" SECTION OF THE UPSC CSE EXAM.

### Why in the News?

Recently, a study titled "**Microplastic contamination in Ashtamudi Lake, India: Insights from a Ramsar wetland**" was carried out by the Department of Aquatic Biology and Fisheries, University of Kerala, with support from the Ecomarine Project.

### ANALYSIS OF STUDY

- **Extensive microplastic contamination:** researchers discovered microplastics extensively distributed throughout the lake's ecosystem, including in fish, shellfish, sediment, and water samples. This widespread contamination underscores the significant issue of microplastic pollution in this ecologically vital wetland.
- **High microplastic levels in aquatic life:** the study revealed particularly high concentrations of microplastics in the lake's macrofauna. Fish exhibited a 19.6% microplastic composition, while shellfish showed an even higher content at 40.9%. These elevated levels in consumable aquatic organisms pose major public health concerns.
- **Presence of hazardous heavy metals in microplastics:** the analysis identified hazardous heavy metals such as molybdenum, iron, and barium in the microplastics. These contaminants, likely absorbed from the environment, threaten both aquatic organisms and humans who consume the contaminated fish and shellfish.
- **Immediate need for intervention:** researchers highlighted the urgent need for ongoing monitoring of microplastic pollution in ashtamudi lake and the implemen-

tation of strategies to reduce microplastic entry into this estuarine system. Prompt action is necessary to address the escalating threat of microplastic contamination and protect the ecological integrity and public health of this Ramsar wetland.

## ABOUT MICROPLASTIC

- Microplastics are tiny plastic fragments, less than 5 mm (0.2 inches) in length, resulting from plastic pollution. Microplastics are composed of carbon and hydrogen atoms linked in polymer chains and often contain chemical additives like phthalates and flame retardants.
- These particles are not biodegradable and accumulate in various ecosystems, including marine, freshwater, and terrestrial environments.



## TYPES OF MICROPLASTIC:

### Primary Microplastics

These are small plastic particles that are originally less than 5 mm in size before they enter the environment. Examples include microbeads in personal care products, plastic pellets used in manufacturing processes, and microfibers released from synthetic fabrics during laundry.

### Secondary Microplastics

These microplastics are produced from the degradation of larger plastic items due to environmental factors such as weathering, UV radiation, and wave action. Examples include small pieces broken off from plastic bottles, bags, and fishing nets.

## IMPACT OF MICROPLASTIC ON MARINE ECOSYSTEM

- **Ingestion by Marine Organisms:** Due to their small size, microplastics are often mistaken for food by a variety of marine organisms, ranging from plankton to large filter-feeding whales. When these particles are ingested, they can accumulate in the digestive systems of marine animals, causing physical blockages, impaired nutrient absorption, and potential starvation.

- **Bioaccumulation and Biomagnification:** Microplastics can accumulate in the tissues of marine organisms over time, a process known as bioaccumulation. This accumulation can lead to biomagnification, where the concentration of microplastics increases up the food chain, ultimately impacting predators at higher trophic levels.
- **Chemical Contamination:** Microplastics have the capacity to absorb and concentrate toxic chemicals from their surroundings. When marine organisms ingest these microplastics, the chemicals can leach into their tissues, causing toxic effects and disrupting their physiological functions.
- **Physical Harm:** Beyond ingestion, microplastics can physically harm marine organisms by causing entanglement. Animals such as sea turtles, seabirds, and marine mammals can get entangled in microplastics, leading to injuries, reduced mobility, and even death.
- **Disruption of Ecosystems:** The presence of microplastics in marine environments can disrupt entire ecosystems. They can alter the behaviour, reproduction, and survival rates of various species. For instance, changes in plankton communities can have cascading effects throughout the food web, impacting biodiversity and the stability of ecosystems.

### ADVERSE IMPACT OF MICROPLASTIC ON HUMAN HEALTH

- **Bioaccumulation in the food chain:** aquatic organisms can ingest microplastics contaminated with heavy metals such as cadmium, lead, chromium, and arsenic. These metals, which do not easily degrade, can accumulate up the food chain, ultimately exposing humans to higher levels when consuming seafood.
- **Desorption in the digestive system:** ingested microplastics can release these heavy metals more effectively in the acidic environment of the human stomach. This process increases the metals' bioaccessibility and potential absorption into the body.
- **Toxic effects of heavy metals:** heavy metals like cadmium, chromium, and arsenic are known carcinogens and can cause various health problems. Exposure to these metals is associated with organ dysfunction, metabolic disorders, immune system damage, neurotoxicity, and reproductive and developmental toxicity.
- **Synergistic toxicity with microplastics:** the combined presence of microplastics and heavy metals can result in more severe toxic effects than either pollutant alone. Microplastics, with their rough surfaces and functional groups, can adsorb and transport heavy metals, enhancing their persistence in the environment and their bioavailability.

### MEASURES TO REMOVE MICROPLASTIC FROM AQUATIC SYSTEM

- **Filtration technology:** filtration is widely used to remove microplastics from water,

utilising various types of filters, such as membrane filters. These filters are effective in capturing microplastics but can suffer from membrane fouling and require frequent replacement, which increases costs.

- **Adsorption and magnetic separation:** adsorption and magnetic separation are straightforward methods for microplastic removal. While effective, they often involve additive sorbents, which can lead to secondary pollution issues.
- **Coagulation and oxidation treatment:** coagulation is used to remove microplastics from water, but it may leave chemical residues. Similarly, oxidation treatments can be effective but might also result in residual chemicals that need to be addressed.
- **Biodegradation and bioreactors:** biodegradation and bioreactors provide eco-friendly solutions for microplastic removal. However, these methods typically have lower degradation efficiency compared to other techniques.
- **Photocatalytic technology:** photocatalytic degradation uses light to break down microplastics with high efficiency, making it an effective method for removing these particles from water systems.
- **Electrocoagulation:** electrocoagulation is an effective method for microplastic removal, involving the electrical production of coagulants that destabilize and entrap microplastics, facilitating their removal from water.
- **Distillation:** water distillation is a highly effective method for removing microplastics, involving boiling water and collecting the condensation, which leaves impurities like microplastics behind. However, it is less practical for large-scale use.
- **Reducing plastic use:** a sustainable, long-term solution to microplastic pollution is to reduce plastic consumption. By minimising the use of single-use plastics and choosing reusable alternatives, the input of microplastics into the environment can be significantly reduced.

## SIGNIFICANCE OF WETLANDS

- **Biodiversity and Habitat:** Wetlands and lakes are highly productive ecosystems that sustain a diverse array of plant and animal species, many of which are endangered or at risk. These environments serve as crucial habitats for various wildlife populations. Wetlands and lakes play a critical role in supporting migratory bird populations by acting as essential stopover sites and wintering grounds.
- **Water Quality and Quantity:** Wetlands function as natural filtration systems, capturing sediments and absorbing pollutants, thereby enhancing water quality. They also play a pivotal role in regulating water levels by storing excess water during periods of flooding and releasing it gradually, which helps mitigate downstream flooding and erosion.
- **Flood and Storm Protection:** Coastal wetlands, such as mangroves and salt marshes, provide vital protection for shorelines, mitigating erosion and reducing the impact of severe storms and hurricanes. Inland wetlands and lakes serve as reservoirs for floodwaters, lessening flood heights and minimising associated damages.



- **Economic and Recreational Benefits:** Wetlands and lakes offer significant natural resources, including fish, shellfish, timber, and wild rice, which support local economies and livelihoods. Moreover, they provide recreational opportunities such as fishing, hunting, birdwatching, and photography, which contribute to economic activity and tourism.
- **Climate Regulation:** Wetlands play a crucial role in carbon sequestration and storage, aiding in the global regulation of climate by capturing and storing substantial amounts of carbon dioxide.

### Prelims Based Question

**Q1. Consider the following statement:**

1. Microplastics are tiny plastic particles with a size less than 5 mm.
2. Electrocoagulation is one of the most effective measures to remove microplastic from aquatic ecosystems.

**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. Analyse the public health implications of high microplastic levels in consumable aquatic organisms, as highlighted by the study on Ashtamudi Lake. What measures can be taken to mitigate these risks?**

## ECONOMIC CAPITAL FRAMEWORK (ECF)

THIS ARTICLE COVERS 'DAILY CURRENT AFFAIRS' AND THE TOPIC DETAILS OF "ECONOMIC CAPITAL FRAMEWORK (ECF)". THIS TOPIC IS RELEVANT IN THE "ECONOMY" SECTION OF THE UPSC CSE EXAM.

### WHY IN THE NEWS?

The Reserve Bank of India (RBI) recently approved the transfer of Rs 2.11 lakh crore as a dividend to the Government of India for the financial year 2023-24. This is the highest-ever dividend despite the Contingent Buffer Risk being increased to 6.5% for 2023-24. The transferable surplus for the year (2023-24) has been arrived at based on the Economic Capital Framework (ECF).

## ABOUT ECONOMIC CAPITAL FRAMEWORK(ECF):

- The Economic Capital Framework (ECF) is an extensive risk management mechanism mainly utilised by financial institutions to ascertain the capital required to maintain solvency and protect against assorted risks.
- It offers a systematic approach for calculating the suitable amount of risk provisions and the distribution of profits, as mandated by Section 47 of the RBI Act, 1934.
- According to these provisions, the central bank must transfer its remaining profits to the central government after setting aside funds for potential bad debts, asset depreciation, and staff benefits.
- The old Economic Capital Framework (ECF) was formulated during 2014-15 and became functional in the fiscal year 2015-16. In 2018, the Reserve Bank of India (RBI) established an Expert Committee led by Dr Bimal Jalan to assess the existing ECF and recommend an appropriate policy for surplus distribution.
- On August 26, 2019, the Reserve Bank of India implemented a new Economic Capital Framework (ECF) based on the suggestions from the **Bimal Jalan Committee**, which is Subject to a review every five years.
- The Economic Capital Framework helps the RBI manage financial risks by determining the surplus reserves it can transfer to the government. The Expert Committee recommended that the Reserve Bank of India's (RBI) surplus distribution policy should include not just the total economic capital—comprising capital, reserves, risk provisions, and revaluation balances—but also realised equity, including capital, reserve fund, and risk provisions.
- They advised that the RBI's total economic capital should be between 20.8% and 25.4% of its balance sheet, with the Contingent Risk Buffer (CRB), designed for monetary, fiscal stability, credit, and operation risks, maintained at 5.5-6.5%. The CRB acts as a national financial stability reserve. If realised equity exceeds required levels, all of RBI's net income goes to the government; if below, risk provisioning is prioritised, and only the remainder is transferred.

## KEY OBJECTIVES OF THE ECONOMIC CAPITAL FRAMEWORK(ECF) INCLUDE:

1. **Financial Stability:** Ensure the RBI has sufficient capital to manage financial and operational risks, thereby maintaining financial stability.
2. **Risk Management:** Enhance the RBI's ability to absorb losses from its operations and external shocks.
3. **Transparent Surplus Distribution:** Establish a systematic approach to distributing surplus reserves to the government, balancing the need for the RBI to maintain adequate reserves and the government's fiscal needs.
4. **Regulatory Compliance:** Align the RBI's practices with international best practices for central banks, ensuring a robust and transparent financial management framework.

## ABOUT BIMAL JALAN COMMITTEE:

In 2018, the Reserve Bank of India established a committee led by Dr Bimal Jalan to evaluate its Economic Capital Framework. The primary goal of this committee was to

recommend an appropriate framework for risk provisioning and capital requirements for the RBI. **The recommendations of the committee are:**

1. **Realised Equity:** The committee recommended that the RBI maintain a Contingent Risk Buffer (CRB) of 5.5% to 6.5% of its balance sheet. This buffer is meant to cover monetary and financial stability risks.
2. **Revaluation Balances:** The committee recommended treating the revaluation balances (gains from currency and gold revaluation) separately and not using them to meet operational losses.
3. **Surplus Distribution:** It proposed a clear distinction between realised and unrealised gains. Only realised gains (net income) should be available for distribution as surplus to the government.
4. **Periodicity of Review:** The ECF should be reviewed periodically (every five years) to ensure it remains relevant and effective.

In August 2019, the RBI adopted most of the Jalan Committee's recommendations, establishing an updated Economic Capital Framework. This revamped framework introduces a more transparent and systematic approach to defining capital levels and risk provisioning.

### **CONCLUSION:**

The Economic Capital Framework is pivotal in enabling financial institutions to manage their risk exposure effectively, efficiently allocate capital, and comply with regulatory requirements. It ensures the financial system remains stable and promotes a clear and transparent process for distributing surplus with the government. The framework has evolved under the guidance of the Bimal Jalan Committee's recommendations to harmonise the RBI's operations with international norms while catering to the unique needs of domestic financial stability.

### **MAINS PRACTICE QUESTIONS:**

- Q. How do regulatory bodies view financial institutions' use of the Economic Capital Framework, and how does this impact compliance requirements?**

## **THE 10TH WORLD WATER FORUM**

THIS ARTICLE COVERS 'DAILY CURRENT AFFAIRS' AND THE TOPIC DETAILS OF "THE 10TH WORLD WATER FORUM". THIS TOPIC IS RELEVANT IN THE "ENVIRONMENT" SECTION OF THE UPSC CSE EXAM.

### **WHY IN THE NEWS?**

The World Bank's recently published report, "Water for Shared Prosperity," unveiled

during the 10th World Water Forum in Bali, Indonesia, illuminates the critical global water crisis and its impact on human and economic growth worldwide.

### **KEY HIGHLIGHTS OF THE REPORT:**

- There are considerable disparities in worldwide access to water and sanitation facilities. By 2022, about 2.2 billion individuals will not have access to safe drinking water services, and 3.5 billion will not have access to safe sanitation services. Moreover, 80% of those lacking essential water and sanitation facilities live in rural regions.
- Climate change exacerbates water risks, notably in developing nations, with over 800 million people facing drought and more in flood zones. By 2100, droughts could affect 15% more land globally, nearly 50% with temperature factors. Regions like Central Europe, Asia, the Horn of Africa, and others will face significant impacts, disproportionately affecting the poor and perpetuating poverty cycles.
- The distribution of freshwater resources is highly unequal. For instance, China and India, which comprise 36% of the world's population, only have 11% of the freshwater resources. On the other hand, North America, with just 5% of the global population, has access to 52% of these resources.
- The Democratic Republic of the Congo has over half of Africa's water resources, but regions like the Sahel, Southeastern Africa, and South/Central Asia experience severe water scarcity. Since 2000, clean water access in low-income areas has worsened, impacting 197 million more people.
- In low-income regions, the decline in the availability of clean drinking water has left 197 million people without access since 2000. This issue extends to disadvantaged communities, where water accessibility disparities further affect marginalised groups, including those distinguished by gender, location, ethnicity, race, and social identity.
- Access to water and sanitation is crucial for improving education and human capital. In low-income economies, a significant portion of jobs (56%) depends on water, making them sensitive to water supply changes. This is especially true in Sub-Saharan Africa, where 62% of jobs are water-reliant, indicating that inadequate rainfall can significantly impact economic growth.
- Efficient and fair management of water resources builds trust and collaboration within communities, while poor management can heighten disputes. Adequate management of water resources aids in establishing peace and social unity, encouraging inclusiveness and diminishing discord.
- Strengthening hydro-climatic resilience for impoverished populations, improving water resources management, and ensuring equitable water service delivery are key to reducing poverty and enhancing shared prosperity.

### **ABOUT 10TH WORLD WATER FORUM:**

- The 10th World Water Forum, an important global event dedicated to addressing water-related issues, is scheduled from May 18 to May 24, 2024, in Bali, Indonesia. Organised collaboratively by the World Water Council and the Indonesian gov-



ernment, the event is themed “Water for Shared Prosperity” and aims to tackle the world’s pressing water challenges.

- This theme focuses on the importance of healthy ecosystems for water security, addressing water quality improvement, conservation and restoration of freshwater ecosystems, and better access to safe drinking water and sanitation.
- With an anticipated attendance of roughly 30,000 individuals from 172 countries, the forum will bring together a diverse group of participants, including policymakers, specialists, and various sector stakeholders, according to the UNEP (UN Environment Programme) and The United Nations in Indonesia.
- The World Water Council, established in 1996 and located in Marseille, is an international organisation with 260 member organisations from 52 countries, including India. Its core objective is to unite the global community in elevating water to a top political agenda, aiming for a sustainably and equitably developed world.
- Since 1997, The Forum has established itself as the largest global event, hosted triennially by various countries. It is a premier platform for collaboration among the water community and key policymakers. It aims to make substantial long-term commitments to addressing worldwide water issues and ensuring equitable and clean water access for everyone.

## WAY FORWARD:

**Improving Water Use Efficiency:** Improving water use efficiency involves adopting advanced irrigation in agriculture, using water-efficient technologies in the industry, and promoting water-saving fixtures and behaviours in households to reduce water consumption significantly.

**Water Recycling and Reuse:** Utilize greywater from household fixtures such as sinks, showers, and laundry machines for purposes like water to water gardens and flush water Management: Commit to sophisticated wastewater treatment technologies to recover and repurpose water for various applications, from industrial activities to potential being safe for drinking in certain instances.

**Rainwater Harvesting:** Set up rooftop systems to gather and save rainwater for uses other than drinking. Build extensive rainwater collection infrastructures to restore groundwater levels and supply water for farming.

**Ecosystem Restoration:** Initiate actions to safeguard and rejuvenate essential freshwater sources of watersheds. Revitalise and preserve wetlands to enhance water purity, replenish underground water supplies, and offer habitats for diverse species.

**Innovative Technologies:** Leverage intelligent sensors and Internet of Things (IoT) technologies to enhance the monitoring and management of water supply systems. Focus on the development and advocacy of growing crop varieties that are resilient to drought and require less water.

**Water Management Policies:** Implement water management policies to coordinate water, land, and resources, maximising welfare and ecosystem sustainability. Set prices to reflect water’s true value, promoting conservation and ensuring affordability for all.

To tackle the challenge of water scarcity, it’s essential to foster cooperation among different sectors, think creatively, and dedicate ourselves to sustainable methods.

Through these approaches, we aim to achieve a more stable and sustainable future for water resources, benefiting everyone.

**MAINS PRACTICE QUESTION:**

**Q. How should communities balance economic growth with the need for water conservation, especially in heavy water-water industries?**

