

BIODIVERSITY & ENVIRONMENT**Review of Maritime Transport 2023: UNCTAD**

Context: Recently, the United Nations Conference on Trade and Development (UNCTAD) has released the Review of Maritime Transport 2023, highlighting the Issue of Greenhouse Gas (GHG) Emissions from International Shipping and Challenges in Decarbonization.

Key highlights of the review:**Emissions from International Shipping:**

- GHG emissions from international shipping were 20% higher in 2023 compared to a decade ago.
- The shipping industry contributes to over 80% of the world's trade volume and nearly 3% of global GHG emissions.

Growth in Shipping Volume:

- Global maritime shipping volumes experienced a 0.4% drop in 2022 due to disruptions in global supply chains caused by Covid-19.
- However, it is projected to grow by 2.4% in 2023.
- Containerized trade is expected to grow by 1.2% in 2023 and further by 3% between 2024-2028.
- Oil and gas trade volumes showed robust growth in 2022.

Non-Availability of Alternative Fuels:

- Early in January 2023, commercial ships were on average 22.2 years old and more than half of the world's fleet was over 15 years old.
- As the average age of the world fleet is increasing, it raises concern that alternative fuels are not yet available at scale and are more costly, and the ships that can use them are also more costly than traditional ships.

Transitioning to Alternative Fuels:

- It is very difficult for ship owners to renew their fleet without clarity on technology and regulatory regimes, and port terminals also face similar challenges, particularly with regard to investment decisions.
- 98.8% of the global fleet uses conventional fuels like heavy fuel oil, light fuel oil, and diesel/gas oil.
- Only 1.2% are using alternative fuels, mainly LNG, LPG, methanol, and to a lesser extent, battery/hybrid.
- However, progress is underway as 21 % of vessels currently on order are designed to run on alternative fuels, notably LNG, LPG, battery/hybrid and methanol.

Cost Estimates and Transition Challenges:

- Decarbonizing the world's fleet by 2050 could require annual investments ranging from USD 8 billion to USD 90 billion.
- Full decarbonization could double yearly fuel costs, necessitating a just transition for the sector.
- IMO (International Maritime Organization) has set a target to achieve net-zero GHG emissions by around 2050.
- The 2023 IMO GHG Strategy aims for at least 5-10% uptake of zero or near-zero GHG fuels by 2030.

What are the UNCTAD's Recommendations for Economic Incentives?

- Renewable ammonia and methanol fuels are seen as more suitable for newer ships with dual-fuel engines.
- Sustainable marine fuels should achieve zero or near-zero carbon dioxide equivalent emissions on a life-cycle 'well-to-wake' basis.
- UNCTAD advocates for system-wide collaboration, swift regulatory intervention and stronger investments in green technologies and fleets.
- Economic incentives, such as levies or contributions related to shipping emissions, can promote the competitiveness of alternative fuels and support investments in climate-resilient infrastructure.
- There is a need to balance environmental goals with economic needs but underscores that the cost of inaction far outweighs the required investments.
- Beyond cleaner fuels, the Shipping industry needs to move faster towards digital solutions like AI and blockchain to improve efficiency as well as sustainability.

The Initiative of International bodies to Decarbonize International Shipping:**Energy Efficiency Existing Ship Index (EEXI):**

- IMO is revising its existing carbon intensity regulations for ships with EEXI, which limits the technical carbon intensity of the ship by limiting how much carbon dioxide the ship is designed to emit based on its size and ship type, and the Carbon Intensity Indicator (CII), which grades ships from A-E based on their operational carbon intensity, based on how much fuel the ships use each year.

IMO's Mid-Term Measures:

- Additionally, IMO is developing new regulations called Mid-Term Measures, which will include a technical element, most likely a Greenhouse Gas Fuel Standard (GFS), as well as an economic element, such as a carbon levy, a feebate system, or cap-and-trade.
- The IMO aims to agree on these measures by 2025 and have them enter into force in 2027.

The Green Voyage 2050 Project:

- It is a partnership project between the Government of Norway and IMO launched in May 2019 aiming to transform the shipping industry towards a lower carbon future.

International Convention for the Prevention of Pollution from Ships (MARPOL Convention):

- MARPOL convention is the main international convention covering prevention of pollution of the marine environment by ships from operational or accidental causes.
- The MARPOL Convention was adopted on 2nd November 1973 at IMO.

SOCIAL JUSTICE**Social Audit of MGNREGA Scheme**

Context: The Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA), a cornerstone of India's social welfare measures, has been plagued by recurrent complaints about a high level of corruption.

Despite the inclusion of procedures such as social audit units, recent figures show dismal results in terms of fund recovery and general efficacy.

Recent Statistics:

- During the current fiscal year (2023-24), social audit units identified embezzlement totaling 27.5 crore under MGNREGA.
- After corrective efforts were taken, the sum was reduced to 9.5 crore, but only a paltry 1.31 crore (13.8% of the total) was recovered.
- Previous fiscal years' recovery rates indicate a similar trend of inefficiency:
- The recoverable amount in 2022-23 was 86.2 crore, but only 18 crore (20.8% of the total) was retrieved.
- In 2021-22, a total of 171 crore was flagged, however only 26 crore (15% of the total) was recovered.
- These continually poor recovery rates raise serious doubts about the scheme's ability to tackle corruption.
- The poor recovery rate further jeopardizes the audit process's credibility. This has the potential to erode public trust in MGNREGA's integrity and mission.

What is MGNREGA Scheme?**About:**

MGNREGA is one of the largest work guarantee programmes in the world launched in 2005 by the Ministry of Rural development.

It provides a legal guarantee for one hundred days of employment in every financial year to adult members of any rural household willing to do public work-related unskilled manual work at the statutory minimum wage.

Active workers: 14.32 Crore (2023-24)

Major Features:

The cornerstone of MGNREGA's design is its legal guarantee, ensuring that any rural adult can request work and must receive it within 15 days.

If this commitment is not met, an "unemployment allowance" must be provided.

It requires that priority shall be given to women in such a way that at least one-third of the beneficiaries shall be women who have registered and requested for work.

Section 17 of the MGNREGA has mandated Social audit of all Works executed under the MGNREGA.

Implementation Agency: The Ministry of Rural Development (MRD), Govt of India is monitoring the entire implementation of this scheme in association with state governments.

Objective: This act was introduced with an aim of improving the purchasing power of the rural people, primarily semi or unskilled work to people living below poverty line in rural India.

It attempts to bridge the gap between the rich and poor in the country.

MGNREGs contribution to Sustainable Development Goals (SDGs):

1. No poverty
2. Zero Hunger
3. Good Health and Well-Being
4. Quality Education
5. Gender Equality
8. Decent Work and Economic Growth
9. Industry, Innovation and Infrastructure
10. Reduced Inequalities

Social Audit Mechanism:
About:

- Social Audit is the examination and assessment of a programme/scheme conducted with the active involvement of people and comparing official records with actual ground realities.
- It is a powerful tool for social transformation, community participation and government accountability.
- It is different from Financial Audit. The financial audits scrutinize financial records to assess an organization's financial health, social audits concentrate on evaluating a program's effectiveness in achieving its social goals by involving stakeholders.

Social Audit Mechanism under MGNREGA:
Provision:

- Section 17 of the MGNREGA has mandated Social audit of all works executed under the MGNREGA.
- The Audit of Scheme Rules, 2011, also known as the Mahatma Gandhi National Rural Employment Guarantee Audit of Schemes Rules, 2011, were developed by the Ministry of Rural Development in collaboration with the Comptroller and Auditor General (CAG) of India.
- These rules outline the procedures for social audits and the duties of various entities, including the Social Audit Unit (SAU), state government, and field workers of MGNREGA, to be followed nationwide.

Related Concerns:

- **Units in Need of Funding:** Inadequate finance is limiting the ability of social audit units to perform properly.
- The Union government sponsors social audit units in order to ensure their independence from states.
- However, delays in allocating cash have left units in states such as Karnataka and Bihar without funds for nearly two years.
- **Lack of Training:** Inadequate training and resources further hinder their effectiveness in identifying malpractice.
- **Personnel Shortage:** Insufficient staffing makes it difficult for social audit units to carry out their duties effectively.
- **Low Recovery Rate:** Several states, including Gujarat, Goa, Meghalaya, Puducherry, and Ladakh, have consistently reported "zero cases" and "zero recoveries" over the last three years. This raises questions about the effectiveness of monitoring in these regions.
- States like Telangana, despite having active social audit units, struggle with low recovery rates.

Way Forward

- **Stakeholder Engagement:** Involve all stakeholders, including beneficiaries, civil society organizations, government officials, and auditors, in the evaluation and redesign of the social audit process.
- Also, there is a need to invest in training and capacity-building programs for auditors responsible for conducting social audits.
- **Whistleblower Protection:** Establish a robust mechanism for protecting whistleblowers who report irregularities or corruption in MGNREGA projects. Encourage individuals to come forward without fear of reprisal.
- **Community Participation:** Promote active participation of local communities in the audit process. Empower them to monitor and report on project progress and fund utilization.
- Also, there is a need to establish Grievance Redressal Committees at the village level to address issues promptly.
- **Feedback Mechanism:** Establish a feedback loop where audit findings are used to improve the MGNREGA program. Identify systemic issues and work towards continuous improvement.

PRELIM FACTS
1. Armageddon Reedtail

Context: Recently in Kerala's Western Ghats, researchers from MIT-World Peace University have found a new damselfly species, naming it 'Armageddon Reedtail' (*protosticta armageddonia*).

About:

- The name 'Armageddon reedtail' was chosen to highlight the global fall of insects as a result of habitat loss and climate change, and to allude to the term "Ecological Armageddon."
- It is distinguished by its dark brown to black body and brilliant greenish-blue eyes, as well as delicate pale blue markings on half of its eight abdominal segments.
- It only grows in major highland streams with dense canopy protection.
- Damselflies are classified as Zygoptera (pair wings). They look like dragonflies, but they're smaller and have sleeker bodies.

- Damselflies are graceful fliers with small bodies and long, filmy, net-veined wings that are mostly found around shallow, freshwater settings.

2. SAMPRITI- XI Exercise 2023

Context: SAMPRITI, the annual combined military exercise, began on October 3rd, 2023, in Umroi, Meghalaya. This exercise, organized alternately by India and Bangladesh, demonstrates the two countries' strong bilateral defense cooperation.

- SAMPRITI-XI is a 14-day exercise designed to improve interoperability, share tactical training, and promote best practices between the two forces.
- The exercise will feature a Command Post Exercise (CPX) and a Field Training Exercise (FTX), with a focus on Sub-Conventional Operations in accordance with Chapter VII of the United Nations Charter, which grants the UN Security Council the authority to maintain peace.
- The CPX will prioritize decision-making after extensive consideration.
- Through coordinated tactical simulations for counter-terrorist operations, including hostage rescue, crowd control measures, and the employment of helicopters, the FTX will confirm grassroots-level operations.
- The two countries also hold the Naval Exercise Bongosagar.

3. Project Deepak

Context: The Tripura government recently struck an agreement with Assam Rifles for 'Project Deepak,' which will target impoverished pupils in the state.

About the project:

- Deepak was designed following the principles of the Super 30 project.
- This project entails offering specific coaching to economically disadvantaged, underprivileged, and meritorious kids, particularly those from rural areas, prior to the 12th board exams in order for them to gain admission to eligible colleges such as technical colleges, medical colleges, and so on.
- Before bringing the initiative to Tripura, the Assam Rifles completed comparable schemes in Nagaland, Manipur, Mizoram, and Arunachal Pradesh.
- The Assam Rifles headquarters currently houses 30 students who can receive specialized training for a year.
- A shortlisting procedure would be carried out through an analysis of economically disadvantaged communities, and those chosen would be eligible to participate in the coaching program.

Aim of the project:

- increase Gross Enrollment Ratio by 30 per cent by 2030,
- introduction of new technologies in higher education
- skill development in educational institutions
- multi-disciplinary system in higher education institutions

About the Super 30 scheme:

- The state government started the 'Super 30' scheme at the Madhyamik level in 2020-21 to prepare students for national-level engineering and medical entrance examinations.
- This scheme provides 30 students with opportunity to prepare for NEET, JEE Mains, and Advanced exams according on their selection.
- The state government's initiative comprises an annual spending of Rs 1 lakh for coaching and Rs 1.40 lakh for lodging for each student in each batch, for a total yearly expenditure of Rs 72 lakh for coaching and lodging.
- To assure project continuance, the government has additionally given 5% over and above the expected cost for the following two years.

4. Glacial lake outburst flood

Context: Ten people were murdered and 80 were missing in Sikkim after the South Lhonak Lake burst owing to heavy rainfall, causing water to spill into downstream villages.

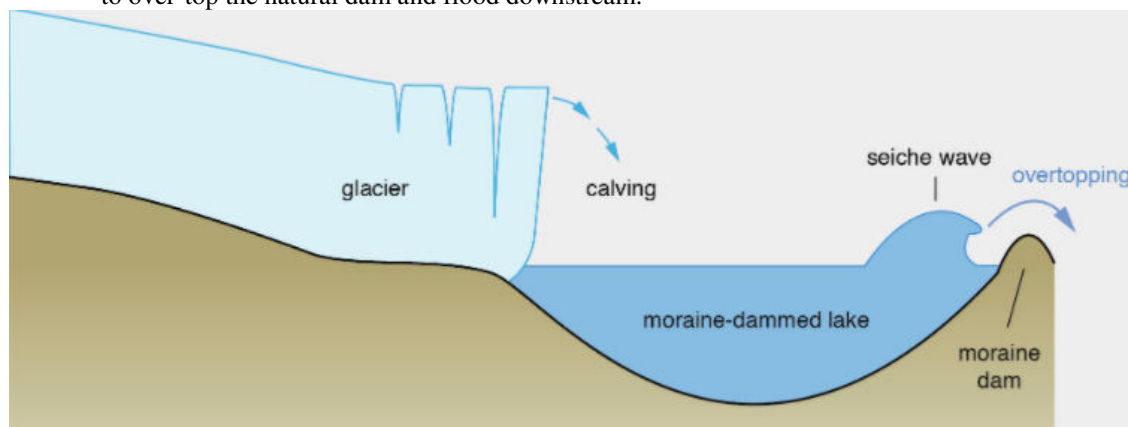
What is GLOF?

- Glacial lakes are bodies of water that form in front of, on top of, or beneath a melting glacier.
- Because glacial lakes are generally blocked by unstable ice or sediment made of loose rock and debris, they become more dangerous as they become larger.
- If the border around them fails, massive amounts of water will rush down the slope of the mountains, perhaps causing flooding in downstream areas.
- GLOF stands for glacial lake outburst floods.

Why GLOFs are triggered:

- earthquakes,
- extremely heavy rains and

- ice avalanches.
- landslides or ice avalanches can sometimes fall directly into the lakes and displace the water, causing it to over-top the natural dam and flood downstream.



5. United Nations Convention against Transnational Organised Crime

Context: The Union Minister of State for Home Affairs recently attended the UN Convention against Transnational Organized Crime Ministerial Conference in Palermo, Italy.

About:

- It is a global convention adopted by the United Nations in 2000 to combat transnational organized crime.
- It is commonly referred to as the Palermo Convention.
- There are 147 signatories to the UNTOC and 190 parties to the treaty.
- The Convention is augmented by three Protocols.
- The Protocol to Prevent, Suppress, and Punish Human Trafficking, Especially of Women and Children;
- The Protocol Against Migrant Smuggling by Land, Sea, and Air; and
- The Protocol to Combat Illicit Manufacturing and Trafficking in Firearms, Parts and Components, and Ammunition.
- On December 12, 2002, India signed the United Nations Convention against Transnational Organized Crime (UNTOC) and its three Protocols.

6. Exclusome

Context: The term 'exclusome' refers to a previously unknown compartment in mammalian cells discovered by researchers.

About Exclusome:

- It is a relatively novel organelle found in mammalian cells.
- It is made up of plasmids, which are DNA rings.
- It is found in the cell plasma.
- This is unusual since most eukaryotic cells (cells with nuclei) preserve the majority of their DNA in the nucleus, where it is arranged into chromosomes.
- Instead, it is arranged into plasmids in the exclusome, which are tiny, circular DNA strands that can reproduce independently of chromosomes and are commonly seen in bacteria and other microscopic creatures.

What has the discovery revealed?

- Some of the plasmids that end up in the exclusome originate from outside the cell, while others—known as telomeric rings—come from the capped ends of chromosomes, the telomeres.
- Particularly in certain cancer cells, the ones from the telomeres are regularly pinched off and joined together to form rings.
- The cell nucleus weeds out such DNA rings and deposits them, together with the plasmids coming from outside the cell, in the cell plasma.
- This proves that cells are capable of differentiating between DNA that is their own and still needed and DNA that is foreign or presumably no longer required, which they then eject from the nucleus.
- In this way, the exclusome may have a protective function, guarding the cell's genetic integrity.

ANSWER WRITING

Q. All Birds find shelter during a rain. But Eagle avoids rain by flying above the Clouds. Problems are common, but attitude makes the difference!!!” - APJ Abdul Kalam. Analyze the meaning and implications of this quote for a civil servant.

Introduction:

The quote highlights the significance of attitude in dealing with challenges and adversities. It suggests that while everyone may encounter problems, it is one's attitude that determines how they respond and overcome them. This holds great relevance for civil servants who face numerous challenges in their roles.

For a civil servant, the meaning of this quote lies in recognizing that problems are inevitable in public service. However, their attitude towards these problems plays a crucial role in finding effective solutions and maintaining a positive impact on society.

Implications of this quote for a civil servant include:

Resilience: A civil servant needs to cultivate a resilient attitude towards problems. Instead of getting discouraged, they should strive to find innovative solutions and persevere in their efforts.

Adaptability: The quote suggests that the eagle's ability to soar above the clouds reflects a proactive and adaptable approach. Similarly, civil servants should be flexible and open to new ideas and approaches in addressing challenges.

Positive mindset: Maintaining a positive mindset is essential for a civil servant. It helps in reframing problems as opportunities, fostering creativity, and inspiring others to overcome obstacles.

Leadership: A civil servant's attitude can influence their team and stakeholders. By demonstrating a positive and solution-oriented mindset, they can inspire others to approach problems with resilience and determination.

MCQs

- The Toto language, which is only spoken by 1,600 people, is on the verge of extinction. Where is the Toto language most often spoken?
a) West Bengal b) Sikkim
c) Nagaland d) Puducherry
- With reference to the Smuggling and Counterfeiting Activities, consider the following statements:
1. The Golden Crescent region of the world consists of countries - Afghanistan, Pakistan, and Iraq.
2. The Golden Triangle part of the world includes the countries; Myanmar, Laos, Thailand.
3. FICCI CASCADE is an initiative by the Federation of Indian Chambers of Commerce and Industry (FICCI).
How many of the statements given above is/are correct?
a) Only one b) Only two
c) All three d) None
- Exercise SAMPRITI is conducted between India and:
a) Bangladesh b) Nepal
c) Indonesia d) Bhutan
- Consider the following statements about the Basohli Pashmina:
1. It is a hand-spun traditional Jammu and Kashmiri craft.
2. It carries a Geographical Indication (GI) label.
Which of the above statements is/are correct?
a) 1 only b) 2 only
c) Both 1 and 2 d) Neither 1 nor 2
- Consider the following statements with relation to Swamp deer:
1. It is found in India and Nepal's open forests and grasslands.
2. It is included in the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) Appendix I.
Which of the above statements is/are correct?
a) 1 only b) 2 only
c) Both 1 and 2 d) Neither 1 nor 2
- Consider the following statements regarding Quantum Dots:
1. The Nobel Prize in Chemistry 2022 was awarded jointly to Carolyn R. Bertozzi, Morten Meldal and K. Barry Sharpless for their pioneering research on Quantum Dots.
2. Quantum dots are semiconductor particles a few nanometres in size, having optical and electronic properties that differ from those of larger particles as a result of quantum mechanical effects.
3. These nanoparticles have wide-ranging applications across fields like electronics, advanced surgery, and quantum computing.
How many of the above statements is/are correct?
a) Only one b) Only two
c) All three d) None
- DISC, iDEX, INDUS-X IMPACT and SPRINT are all initiatives in which sector?
a) Online Education
b) Innovation in pure sciences
c) Defence technology and equipments
d) Supercomputers
- Take a look at the following remarks about the Positive Indigenisation List (PIL):
1. PIL was previously known as the Negative Import List (NIL).
2. It aims to replace imported defense items/equipment.
3. PIL items can only be obtained from domestic defense PSUs.
How many of the above statements are correct?
a) None b) Only one
c) Only two d) All three
- What is the Palermo Convention primarily focused on?
a) Environmental protection in Antarctica
b) Combating transnational organized crime
c) Conservation of migratory species
d) Maritime boundary disputes in the South China Sea
- Which of the following statements about Bolson Tortoises (*Gopherus flavomarginatus*) is correct?
a) They are native to the rainforests of South America.
b) Bolson Tortoises are known for their fast movement and agility.
c) They are a critically endangered species found in the southwestern United States and Mexico.
d) Bolson Tortoises are primarily carnivorous in their diet.