IASBABA'S TLP 2023 (PHASE – 1) – DAY 71 SYNOPSIS

Q-1 -Analyse the impact of plastic waste on marine ecosystem , and the measures taken by the government and other stakeholders to reduce plastic pollution. Discuss the opportunities and challenges in promoting sustainable alternatives to single use plastics .

Approach -

A simple straightforward question where candidates need to write about impact of plastic waste on marine ecosystem and govt measures to curb plastic pollution,in second part of answer write about sustainable alternatives for single use plastics.

Introduction -

Plastic has become one of the most pressing environmental issues that we are facing today. India is generating about 3.5 million tonnes of plastic waste annually.plastic waste generation impacts marine ecosystem badly hence there is urgent need for promoting sustainable alternatives for single use plastics.

Body -

Impacts of Marine Plastic Waste-

- Plastic waste blocks our sewers, threatening marine life and generating health risks for residents in landfills or the natural environment.
- The financial costs of marine plastic pollution are significant as well.
- According to a forecast made in March 2020, the direct harm to the blue economy of the Association of Southeast Asian Nations will be USD 2.1 billion per year.
- Enormous social costs accompany these economic costs. Residents of coastal regions suffer from the harmful health impacts of plastic pollution and waste brought in by the tides.
- Boats may become entangled in abandoned or discarded fishing nets or their engines may become blocked with plastic debris.
- It can create problems for industries such as Shipping, fisheries and aquaculture and maritime tourism which affect livelihood of the coastal community.

Steps Taken So Far:

- GloLitter Partnerships Project:It is launched by the International Maritime Organization (IMO) and the Food and Agriculture Organization of the United Nations (FAO) and . initial funding from the Government of Norway.
- To prevent and reduce marine plastic litter from shipping and fisheries.
- It will also assist developing countries in reducing marine litter, including plastic litter, from within the maritime transport and fisheries sectors, and to decrease the use of plastics in these industries.
- Also assist in identifying opportunities to reuse and recycle plastics.
- 30 countries including India have joined this global initiative to tackle marine litter.
- World Environment Day, 2018 hosted in India, the world leaders vowed to "Beat Plastic Pollution" & eliminate its use completely.

Specific to India:

- Plastic Waste Management Rules, 2016 state that every local body has to be responsible for setting up infrastructure for segregation, collection, processing, and disposal of plastic waste.
- Plastic Waste Management (Amendment) Rules 2018 introduced the concept of Extended Producer Responsibility (EPR).
- Designing a product: Identifying plastic items that can be replaced with non-plastic, recyclable, or biodegradable materials is the first step.
- Countries must embrace circular and sustainable economic practices throughout the plastics value chain to accomplish this.
- Pricing: Plastics are inexpensive which provide fewer economic incentives to employ recycled plastics. Balancing price structure with environmental health should be a priority.
- Technologies and Innovation: Developing tools and technology to assist governments in measuring and monitoring plastic garbage in cities.
- India should start projects like the 'Closing the loop' project of the United Nations Economic and Social Commission for Asia and the Pacific which assists cities in developing more inventive policy solutions to tackle the problem.
- Promoting a plastic-free workplace: All single-use goods can be replaced with reusable items or more sustainable single-use alternatives.
- Producer responsibility: Extended responsibility can be applied in the retail (packaging) sector, where producers are responsible for collecting and recycling products that they launch into the market.
- Municipal and community actions: Beach and river clean-ups, public awareness campaigns and disposable plastic bag bans and levies.
- Multi-stakeholder collaboration: Government ministries at the national and local levels must collaborate in the development, implementation and oversight of policies related to plastic waste management.
- Recently, the researchers at the Indian Institute of Science, Bengaluru (IISc) have found a way to make a substitute for single-use plastic (SUP) that can, in principle, help mitigate the problem of accumulating plastic waste in the environment.

Key Points

- In the research, Non-edible Castor oil was used in this process of making the polymer which involves allowing them to react with the cellulose (from agriculture stubble) and DI-isocyanate compound.
- These polymers can be molded into sheets having properties suitable for making bags, cutlery or containers.
- The material so made is biodegradable, leak-proof and non-toxic.

Possible Advantages-

- Addressing the Problem of Single use Plastics (SUP): Given the surge in the usage of single use plastics and the challenge of managing the landfills choked with SUPs, such alternatives could bring paradigm shift especially in the packaging sector, the largest consumer of SUP.
- Tackling Agricultural Stubble Problem: Agricultural stubble burning is responsible for air pollution in several northern states in India.
- In Delhi, for example, the air quality index dips to indicate "severe" or "hazardous" level of pollution every winter, and this is due in part to the burning of agricultural stubble in the surrounding regions.

- Using agriculture stubble for replacement of single use plastics will not address the problem of air pollution, but will generate additional income opportunities for farmers also.
- Use in Healthcare Facilities: As the material is biodegradable and non-toxic, researchers are planning to use the material for healthcare applications also.

Conclusion -

According to a report all the plastic waste produced in the world, 80% enters the environment. Accumulation of plastic waste is detrimental to the environment and when this waste finds its way into the sea, there can be major harm to aquatic ecosystems,Countries must embrace circular and sustainable economic practices throughout the plastics value chain to reduce plastic pollution.

2. Assess the impact of climate change on India's biodiversity, and discuss the measures taken by the government and other stakeholders to protect and conserve vulnerable species.

Approach

Candidates can start the answer with giving basic idea of climate change in India and then simply highlight its impact on Indian biodiversity also elucidate about measures taken by different stakeholders.

Introduction

While the world is grappling with the challenges posed by climate change, developing economies like India are particularly vulnerable. Thus, climate risk as a material aspect is going to play a critical role in charting out national-level policies, business strategies and reorientation of finance in an emerging economy like India.

Body

Climate change is having a significant impact on India's biodiversity. Some of the ways in which climate change is affecting India's biodiversity include:

- Habitat loss and degradation: Rising temperatures, changing precipitation patterns, and sea-level rise are altering the habitats of many species, causing them to migrate or go extinct.
- Changes in species distribution: Some species are adapting to changing climatic conditions by moving to new areas, while others are unable to do so, leading to a decline in their populations.
- Altered phenology: Changes in temperature and precipitation patterns are leading to shifts in the timing of life cycle events such as flowering and migration, which can have cascading effects on ecosystems.

- Increased frequency and intensity of extreme events: Climate change is causing more frequent and intense heatwaves, droughts, floods, and storms, which can have a devastating impact on biodiversity, particularly for species that are already vulnerable due to habitat loss or degradation.
- Ocean acidification: The ocean absorbs large amounts of carbon dioxide from the atmosphere, leading to acidification, which is having a major impact on marine biodiversity, particularly for species that have shells, such as mollusks and some species of plankton.

The Indian government and other stakeholders are taking a number of measures to protect and conserve vulnerable species:

- Legal protection: India has enacted several laws to protect its wildlife, including the Wildlife Protection Act of 1972, which provides for the protection of wildlife species and their habitats.
- Protected Areas: The government has established a network of protected areas, such as national parks, wildlife sanctuaries, and biosphere reserves, to conserve threatened and endangered species and their habitats.
- Species recovery programs: The government and conservation organizations are implementing species recovery programs to protect and conserve threatened species, such as the Bengal tiger, Asian elephant, and one-horned rhinoceros.
- Habitat restoration and management: The government and conservation organizations are working to restore degraded habitats and implement sustainable land use practices to reduce the impacts of human activities on biodiversity.
- The impacts of climate change on India's biodiversity have far-reaching implications for the country's natural resources, as well as its human population, which relies on these resources for food, water, and livelihoods.
- Public awareness and education: The government and conservation organizations are conducting public awareness and education programs to increase understanding of the importance of biodiversity conservation and encourage the public to take actions to protect wildlife.
- International cooperation: India is working with other countries and international organizations to conserve biodiversity on a regional and global scale, through initiatives such as the Convention on Biological Diversity and the Global Tiger Initiative.
- Private sector engagement: The private sector is being engaged to promote sustainable practices and support biodiversity conservation, through initiatives such as Corporate Social Responsibility programs and partnerships with conservation organizations.

Conclusion

These measures are helping to protect and conserve vulnerable species in India, but much more needs to be done to ensure their long-term survival. Effective conservation requires sustained efforts from the government, conservation

organizations, and the general public, as well as support from the international community.

3. Analyze the impact of infrastructure projects on the environment, and the role of Environmental Impact Assessment (EIA) in mitigating this impact. Discuss the challenges and opportunities in improving the EIA process to ensure sustainable development.

Approach

Candidates can start the answer with giving basic idea of EIA, address the role of the EIA in mitigating impacts and also highlight challenges and oppurtunities.

Introduction

EIA is designed to identify the potential risks of a project (e.g., infrastructure development such as a dam) to environmental and human well-being and identify measures to eliminate and/or mitigate these risks. This can be done by replacing and/or modifying planned activities to reduce impacts.

Body

- Infrastructure projects can have significant impacts on the environment, such as deforestation, soil erosion, loss of biodiversity, and increased air and water pollution. EIA is a tool used to identify, predict, and evaluate the potential environmental impacts of a proposed project and to ensure that these impacts are taken into consideration when making decisions.
- The role of EIA is to provide decision-makers with an understanding of the environmental risks and benefits associated with a project and to identify measures to minimize or mitigate any adverse impacts.
- This includes identifying alternatives to the proposed project, considering the views of local communities and other stakeholders, and evaluating the long-term sustainability of the project.
- EIA is an important step in ensuring that infrastructure projects are developed in a sustainable manner, minimizing their impact on the environment and preserving the quality of life for local communities and future generations.
- When properly implemented, EIA can help to promote sustainable development and ensure that the costs and benefits of infrastructure projects are evaluated in a comprehensive and transparent manner.

Challenges:

- Lack of Political Will: The lack of political will and commitment to implementing EIA regulations can result in weak enforcement and ineffective implementation.

- Limited Resources: EIA is a resource-intensive process, and in many cases, there may be limited resources available to conduct a comprehensive assessment.
- Limited Public Participation: The public often lacks the resources and information necessary to participate effectively in the EIA process.
- Limited Capacity: Many countries lack the technical and institutional capacity to carry out EIA effectively, particularly in developing countries.

Opportunities:

- Strengthening Regulations: Improving regulations and guidelines for EIA can help to ensure that projects are subject to a rigorous and transparent assessment process.
- Increasing Public Participation: Encouraging greater public participation in the EIA process can help to build trust and ensure that the needs and concerns of local communities are taken into consideration.
- Enhancing Capacity Building: Providing training and support to practitioners and decision-makers can help to build the technical and institutional capacity necessary for effective EIA implementation.
- Using Technology: The use of technology, such as remote sensing and geographic information systems, can help to improve the accuracy and efficiency of EIA processes.

Conclusion

Improving the EIA process can help to ensure that infrastructure projects are developed in a sustainable manner and that the environmental impacts of these projects are effectively managed. By addressing these challenges and taking advantage of these opportunities, the EIA process can play a critical role in promoting sustainable development.