Threats from Plastic Recycling

For Prelims: Threats from Plastic Recycling, Plastic Pollution, Intergovernmental Negotiation Committee, **Carcinogens,Pesticides, Extended Producer Responsibility.**

For Mains: Threats from Plastic Recycling.

Why in News?

- A recent report by Greenpeace Philippines titled **"Forever Toxic: The science on health threats from plastic recycling"** was published at the Second Session of **Intergovernmental Negotiation Committee Meet in Paris,** suggesting that recycling may not be the solution to **Plastic Pollution** as it is often believed to be.

What are the Key Findings of the Report?

- **Higher Level of Chemicals:**
  - Recycled plastics often contain **higher levels of chemicals** such as toxic flame **retardants, benzene and other** Carcinogens, environmental pollutants including brominated and chlorinated dioxins, and numerous endocrine disruptors **that can cause changes to the body's natural hormone** levels.
    - Plastics contain more than 13,000 chemicals and 3,200 of them are known to be **hazardous to human health.**
- **Poisonous Pathways:**
  - There are three poisonous **pathways for recycled plastic material** to accumulate toxic chemicals,
    - Direct contamination **from toxic chemicals in virgin plastic.**
    - Substances like **plastic containers for Pesticides,** cleaning solvents and others that enter the recycling chain and can contaminate plastic.
    - The recycling process, when plastics are heated.
- **Increased Risk of Plastic Fires:**
  - With an increase in plastic stockpiles, **the risk of large fires at recycling facilities has gone up,** especially in those that hold **e-waste** plastics with used batteries.
    - A survey in the United States and Canada in 2022 found a record 390 fires in plastic recycling and waste facilities.
  - In the 12 months up to April 2023, large fires **have been reported at plastic recycling facilities in Australia,** Canada, Ghana, Russia, Southern Taiwan, Thailand and the United Kingdom and in Florida, Indiana, North Carolina of the United States.
- **Increase in Plastic Production:**
  - Plastic production is **forecast to triple by 2060,** with only a **minimal increase in recycling** predicted.
  - Since the 1950s about **8 billion tonnes of plastic has been produced.**
    - Not only that just a tiny proportion (9%) of plastics are ever recycled, but also those that end up with higher concentrations of **toxic chemicals, multiplying their potential harm to human,** animal and environmental health.

- **Implications:**
    - Plastic production, disposal and incineration facilities are most often located in low-income, **marginalized communities across the world,** which suffer from higher rates of Cancer, Lung Disease **and adverse birth outcomes** associated with their exposure to the toxic chemicals.

What are the Recommendations?

- Global plastic pollution can be reduced by 80% by 2040 if countries and companies make **deep policies and market shifts using existing technologies** and also shift to a circular economy.
- Plastics have **no place in a circular economy** and the only real solution to ending plastic pollution is to massively reduce plastic production.
- There is a need for an **ambitious, legally binding Global Plastics Treaty** that accelerates and provides the **conditions needed for a just transition** away from dependence on plastic.
    - The Treaty **should promote safer, toxics-free materials** and reuse-based, zero-waste economies, creating new jobs to support these practices, protecting human and planetary health, minimizing resource use and delivering a just transition for workers and affected communities across the plastics supply and waste chains.

What is Plastic Pollution?

- **About:**
    - Unlike other forms of waste like paper, food peels, leaves etc., which are biodegradable (capable of being decomposed by bacteria or other living organisms) in nature, **plastic waste because of its non-biodegradable nature** persists **into the environment, for hundreds** (or even thousands) of years.
- **Major Polluting Plastic Waste:**
    - Microplastics: They are small plastic pieces of less than **five millimeters in size**.
        - **Microplastic includes microbeads** (solid plastic particles of less than one millimeter in their largest dimension) that are used in cosmetics and personal care products, industrial scrubbers, microfibers used in textiles and virgin resin pellets used in plastic manufacturing processes.
        - Due to sun **exposure and physical wear,** large pieces of plastic that were not recycled break up to produce microplastics.
    - **Single-use plastic:** It is a disposable material that can be used only once before it is either thrown away or recycled, like **plastic bags, water bottles, soda bottles, straws, plastic plates, cups,** most food packaging and coffee stirrers are sources of single use plastic.
- **Initiatives to Tackle Plastic Pollution:**
    - **Indian:**
        - Plastic Waste Management (Amendment) Rules, 2022
        - Extended Producer Responsibility (EPR)
        - National Dashboard on Elimination of Single Use Plastic and Plastic Waste Management
        - India Plastics Pact
        - Project REPLAN
    - **Global:**
        - European Union' Directive on Single-Use Plastics
        - Closing the loop.
        - **The Global Tourism Plastics initiative**

UPSC Civil Services Exam, Previous Year Questions (PYQ)

Q. Why is there a great concern about the 'microbeads' that are released into environment? (2019)

(a) They are considered harmful to marine ecosystems.
(b) They are considered to cause skin cancer in children.
(c) They are small enough to be absorbed by crop plants in irrigated fields.
(d) They are often found to be used as food adulterants.

Ans: (a)

Exp:

- Microbeads are **small, solid, manufactured plastic particles** that are less than 5mm and do not degrade or dissolve in water.
    - Mainly made of polyethylene, microbeads can also be prepared from petrochemical plastics such as polystyrene and polypropylene. They may be added to a range of products, including rinse-off cosmetics, personal care and cleaning products.
- Microbeads, because of their small size pass unfiltered through the sewage treatment system and reach the water bodies. The untreated microbeads in the water bodies are taken up by the marine animals, thus producing toxicity and causing harm to the marine ecosystem.
    - In 2014, Netherland became the first country to ban cosmetics microbeads.
- **Therefore, option (a) is the correct answer.**

Source: DTE