



Plastic Waste Minimisation: NITI Aayog

For Prelims: Single Use Plastics and its uses, Extended Producer Responsibility (EPR)

For Mains: Need for alternatives of Single use plastics, Plastic Waste Management (Amendment) Rules, 2022

Why in News?

Recently, [NITI Aayog](#) has released a report titled '**Alternative Products and Technologies to Plastics and their Applications**' to encourage use of alternatives of plastics.

- The Ministry of Environment, Forest and Climate Change has also banned [Single Used Plastics \(SUP\)](#), violation of the ban will invite punitive action under **Section 15 of the Environment Protection Act (EPA)**.

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ENVIRONMENTAL IMPACT

The single use plastic is believed to take thousands of years to decompose, which leads to soil and water contamination and can pose hazards for land, water, and wildlife. In some cases, the existence of single use plastic in water or food is leading to presence of plastics in human body, and health issues.



HEALTH AND SOCIAL IMPACT

Instances of open burning of plastic waste leads to air pollution. In some developing countries, plastic is burnt for cooking or heating purposes causing health issues in vulnerable groups such as women, children, and the elderly. The littering at open spaces such as parks lead to welfare losses which accounts as indirect social cost of plastic pollution.

ECONOMIC IMPACT

The littering of plastic is visually unattractive and has potential to impact GDP of countries dependent on tourism. The plastic pollution in oceans has economic impact across tourism, shipping, and fishing industries. Other than this sustainable plastic waste management can move plastic from 'waste' to a 'renewable resource'. Plastic pollution costs \$13 billion per year as economic damage to marine ecosystem.

Environmental, health and economic impact of plastic waste

What are the Findings of the Report?

- **Global Plastic Production and Disposal:** Between 1950-2015, the **cumulative production of polymers, synthetic fibre and additives was 8,300 Million Tonnes (MT)**, of which 55% went straight to landfills or were discarded, 8% incinerated, and only 6% were recycled.
 - By 2050 if production is continued at the same rate, it would generate 12,000 MT.
- **India's Case:** India **produced 3.47 million tonnes of plastics waste per Annum**, with the per capita waste growing from 700 grams to 2,500 grams **over the last five years**.
 - Goa, Delhi & Kerala have **reported the highest per capita plastic waste generation**, while Nagaland, Sikkim and Tripura have reported the lowest per capita plastic waste generation.
- **Concern:** Globally, 97-99% of these plastics are derived from fossil fuel feedstock while the remaining 1-3% come from bio (plant) based plastics.
 - **Only a small amount of this plastic waste gets recycled**, adding that a majority of this waste leaks into the environment through various polluting pathways.
 - India collects **only 60% of its plastic waste with the rest 40% remaining uncollected** and enters the environment directly as waste.
 - Nearly every piece of plastic begins as a fossil fuel, and greenhouse gases (GHG) are emitted at each stage of the plastic lifecycle: a) fossil fuel extraction and transport, b) plastic refining and manufacture, c) managing plastic waste, and d) ongoing effects within oceans, waterways, and various ecosystem landscapes.

Best practices in plastic waste management

SL No.	State	Best Practice
1	Andhra Pradesh	Plastic waste collected from local bodies or biomining sites is sent for co-processing in cement plants
2	Arunachal Pradesh	Plastic banks were established in one district; Plastic was used in Road Construction in variable districts
3	Goa	Non-biodegradable waste is sent to co-processing plants for which bailing plants have been set up by Goa Waste Management Agency, Local bodies as well as Village Panchayats
4	Gujarat	94000T of plastic waste was sent for incineration during 2019-20s.
5	Haryana	All municipal corporations have been directed to set up material recovery facilities. 41 out of 81 MCs have set up the MRP

What are the Recommendations?

- The most preferred option for the management of waste is **waste minimisation**. Strengthen the waste minimisation drive through **Extended Producer Responsibility (EPR)**, proper labelling and collection of compostable and biodegradable plastics, while **relaxing the deadline for adoption of biodegradable plastic**.
- Develop **emerging technologies**, e.g., **additives can make plastics biodegradable polyolefins**, such as polypropylene and polyethylene
- Use of **Bio-plastics: as a cost-effective** alternative to plastics.
- Encourage R&D (Research and Development) and incentivize the manufacturing sector.
- Enhance **transparency in disclosing waste generation**, collection, recycling or scientific disposal to bring accountability and avoid greenwashing.
 - Greenwashing is the **process of conveying misleading information about how a company's products are more environmentally sound**.

What can be the Alternatives to Plastics?

- **Glass:**
 - Glass has always been the **safest and the most viable option for the packaging** and use of food and liquid.
 - Glass can be recycled multiple times, so it doesn't have to end up in landfills. It is **cost-effective, considering its durability and recyclability**.
- **Bagasse:**
 - Compostable, eco-friendly **bagasse can replace plastic** needing as disposable plates, cups or takeout boxes.
 - Bagasse is made from the pulp that is leftover when the juice is extracted from sugarcane or beets. It can be **used for other purposes, such as a biofuel**.
- **Bioplastics:**
 - Plant-based plastics, known as bioplastics, have been hailed as a green alternative to fossil fuel-based plastic, especially when it comes to **food packaging**.
 - But bioplastics have their own environmental footprint, requiring the growing of crops and therefore land and water use.
 - Bioplastics have been shown to be just as harmful, and in some cases more harmful, than conventional plastic.
- **Natural Textiles:**
 - When it comes to replacing polyester and nylon clothing which shed millions of tiny plastic

fibres with every single wash, the **traditional alternatives are cotton, wool, linen and hemp.**

- But the production of cotton has been causing serious threats to the environment and also comes at a human cost.

▪ **Refill, reuse and buy unpackaged:**

- By far the least damaging type of packaging is **one that can be used again and again, or none at all.**
 - Reusable fabric bags for fruit & veg etc.
 - Reusable containers and boxes for meat, fish, cheese etc.
 - Refillable bottles and jars for oil & vinegar, cleaning liquids etc.
 - Beeswax wraps instead of foil and clingfilm.

What are the Related Initiatives?

- [Plastic Waste Management rules 2016](#)
- [Plastic Waste Management Amendment Rules, 2021](#)
- [Central Pollution Control Board \(CPCB\)](#)
- [Pollution Control Committees](#)
- [India Plastics Pact](#)
- [Project REPLAN](#)
- [Un-Plastic Collective](#)
- [GoLitter Partnerships Project](#)

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