



From Polythene to Peace: Charting a Sustainable Path for India's Viksit Bharat 2047

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ABSTRACT

Plastic, a ubiquitous material derived from crude oil through "cracking," exists in forms ranging from hard containers to soft films and bags. While it is a commercial success due to its toughness and low cost, polythene's resistance to bacterial degradation makes it a major environmental threat. This paper claims that environmental peace is a fundamental prerequisite for world peace and that the unchecked increase of non-biodegradable waste, such as polythene, directly destabilises this state. Drawing on an analogy of sowing and reaping, the paper argues that our common "harvest" of environmental degradation is a direct consequence of our industrial and consumer choices. This research article examines the current scenario of polythene use in India, analysing its sources and varied applications. It explores the widening gap between manufacturers' financial expectations and the community's need for partnership to ensure responsible use and disposal. This gap creates an "environmental conflict" that threatens long-term harmony and tranquillity. The paper provides effective recommendations for manufacturers, governments, and citizens, emphasising that the path to a developed, or "Viksit," India by 2047 is inextricably linked to sustainable practices. It concludes that by choosing to minimise polythene use, we sow the seeds for environmental peace, thereby securing a more thriving and peaceful future.

Keywords: Environment, peace, polythene, Viksit Bharat 2047, sustainability, India.

1. INTRODUCTION

The quest for peace is frequently framed in terms of geostrategic stability, the balance of power, and the lack of conflict between states. However, a more foundational layer for this quest exists: environmental peace. Peace, at its core, is a dynamic equilibrium, a process of adjustment between what people, groups, and states desire and what they are willing and able to do to achieve those desires without resorting to conflict or violence. When this state of equilibrium is disturbed, instability ensues.

This paper introduces this critical, often overlooked, variable into this equation: polythene. A product of modern industry, polythene embodies a paradox. Born from the "cracking" of crude oil, it is a tribute to human ingenuity, providing solutions for sanitation (pipes), energy storage (fuel tanks), food preservation (shrink-wrap), and communication (cable insulation). Its sturdiness and low cost have made it a commercial success story, creating a powerful industry with major financial expectations. Yet, these very qualities especially its resistance to bacterial degradation—transform it from a boon into a bane upon disposal. The non-biodegradable nature of polythene bags means they persist in the environment for centuries, clogging drainage systems, choking marine and terrestrial life, and leaching toxic chemicals into the soil and water. (Lee & Lavoie, 2013, pp. 1-5)

This creates a strong dissonance. The industrial pursuit of financial success has, in many ways, outpaced the community's capacity for responsible cooperation in managing the product's end of life. The result is a widening "expectations-cooperation gap." This gap does not manifest as a conventional war, but as a slow, insidious environmental conflict. It is a conflict where the aggressor is indiscriminate waste, and the victims are ecosystems, biodiversity, and ultimately, human health and well-being. In this context, how can there be harmony and tranquillity? How can peace prevail when the very environment that sustains us is under siege?

The ancient wisdom, "whatsoever a man soweth, that shall he also reap," provides a strong perspective through which to view this crisis. It compels us to ask a key question: "Polythene you sow, polythene shall you reap, peace you sow, peace shall you reap?" This paper argues that the answer is unequivocally yes. Our present trajectory of indiscriminately sowing polythene is leading us to reap a harvest of environmental degradation, which, in turn, threatens world peace and stability. This research article, therefore, has three primary objectives:

- To analyse the empirical data on the sources and various uses of polythene in India.
- To examine the present scenario, bringing out the environmental and social conflict arising from its mismanagement.
- To propose a multi-stakeholder framework of recommendations aimed at minimising polythene use and its adverse impacts, thereby mapping a path toward a truly integrative and sustainable "Viksit Bharat 2047."

2. THE PRESENT SCENARIO: SOWING POLYTHENE, REAPING CONFLICT

The present scenario in India is a sharp illustration of the "polythene you sow, polythene shall you reap" paradigm. The country's rapid economic growth and urbanisation have been accompanied by a dramatic increase in plastic consumption.

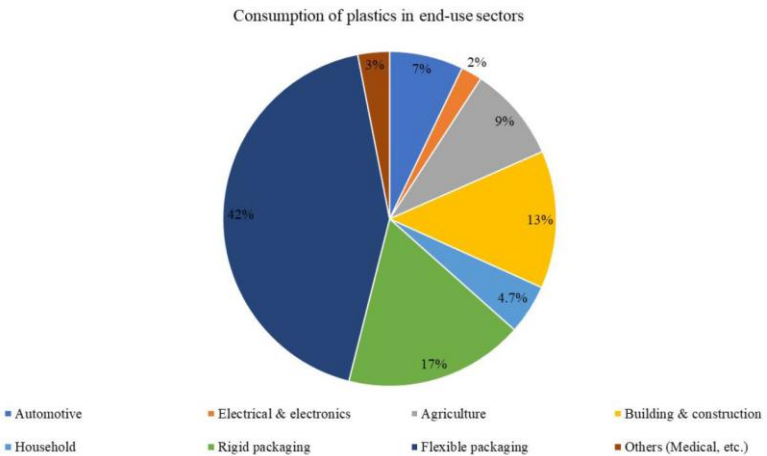


Figure 1: Consumption of plastics in different sectors in India, 2018
Source: Plastindia Foundation. Plastic Industry Status Report. Available online: <https://www.plastindia.org/plastic-industry-status-report.php>

1. Sources and Uses: Polythene is pervasive across the Indian economy.

Packaging: The single largest sector, accounting for a significant percentage of total plastic consumption. This ranges from multilayer packaging for snacks and groceries to the ubiquitous single-use plastic bags provided by nearly every retailer. The convenience and low cost for manufacturers and vendors drive this demand.

Agriculture: Polythene is used extensively in greenhouses, mulch films, and irrigation pipes (drip irrigation). While boosting productivity, the improper disposal of agricultural plastic film leads to soil degradation, hindering water infiltration and reducing fertility.

Consumer Goods: From bottles and containers to toys and household items, polythene and other plastics are the materials of choice because of their durability and mouldability.

Waste Mismanagement: This is the critical point of failure. Despite the Plastic Waste Management Rules (2016, amended thereafter), on-the-ground implementation is still a colossal challenge.

Collection: A significant portion of plastic waste, especially from rural and semi-urban areas, is not collected.

Segregation: The lack of effective source segregation means the recyclable plastic is contaminated with organic and other waste, making it unrecyclable.

Disposal: Uncollected and unsegregated waste ends up in overflowing landfills, is burned in the open (releasing toxic dioxins and furans), or finds its way into water bodies and, ultimately, the ocean. India is ranked among the top countries for mismanaged plastic waste. (Plastic Waste Management Issues, Solutions & Case Studies, n.d.)

2. The Conflict of Peace: This mismanagement is the embodiment of the "environmental conflict" that threatens peace.

Ecological Effect: The physical presence of polythene litter disturbs the natural balance. Animals ingest it, mistaking it for food, leading to starvation and death. It blocks drainage systems, exacerbating urban flooding. It degrades into microplastics, contaminating water sources and entering the food chain, with unknown extended health effects on humans. (Microplastics from broken plastic debris greatly add to soil contamination, 2026)

Social Impact: The burden of this waste disproportionately falls on marginalised communities. Waste pickers, who perform a vital service, work in hazardous conditions without social security. Communities living near landfills suffer from polluted air, water, and soil.

Economic Impact: The cost of cleaning up plastic waste, managing landfills, and dealing with the consequences of environmental degradation (e.g., healthcare costs, loss of tourism revenue in polluted areas) is immense and strains the economy. (Rajadhyaksha, 2013) This diverts resources from development goals.

The Expectations-Cooperation Gap: Manufacturers' expectations of unlimited, profitable production clash with the community's lack of cooperation or capacity for appropriate disposal. This disequilibrium creates a state of environmental instability, a "low-intensity conflict" that erodes the very foundation of a peaceful, prosperous society.

The vision of "Viksit Bharat 2047" cannot be built on this unstable foundation. A nation choking on its own waste, with depleted soils and poisoned waters, cannot truly be called "developed" or enjoy "global peace." The present scenario demands an urgent, transformative shift.

Total Plastic Waste Generated	3.5
Estimated Quantity Recycled	1.8 (approx. 51%)
Estimated Quantity Landfilled/Littered	1.2 (approx. 34%)
Estimated Quantity Leaked into Environment	0.5 (approx. 15%)

Table 2: India's Plastic Waste Scenario (in Million Tonnes per Annum)
 (Source: Compiled from Central Pollution Control Board (CPCB) Annual Report 2022-23 on Plastic Waste Management)

3. INDIA'S PROGRESS TOWARDS SDG TARGETS RELATED TO PLASTIC POLLUTION

India's pledge to combat plastic pollution is directly linked to several Sustainable Development Goals (SDGs). The following tables and charts present the targets and India's achievements in this domain.

SDG 3: Good Health and Well-being	3.9: Substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water, and soil pollution and contamination.	Reduction of open burning of waste; improved sanitation.	Studies show rising microplastics in human blood and food sources. Open burning of plastics remains a major source of air pollution in urban slums. Progress is slow.
SDG 6: Clean Water and Sanitation	6.3: Improve water quality by reducing pollution, eliminating dumping, and minimizing release	Namami Gange Programme and other river cleaning initiatives.	Plastic waste constitutes a significant portion of river and ocean pollution. CPCB monitors industrial effluents, but non-point source plastic pollution is

	of hazardous chemicals and materials.		harder to control. Progress is moderate.
SDG 11: Sustainable Cities and Communities	11.6: Reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management.	Swachh Bharat Mission (Urban) 2.0 focuses on achieving 'Garbage Free' status for cities.	100% door-to-door waste collection claimed in ~94% of wards. However, the processing of waste is significantly lower. Legacy waste biomining is underway at many landfill sites. Progress is significant but uneven.
SDG 12: Responsible Consumption and Production	12.4: Achieve the environmentally sound management of chemicals and all wastes throughout their life cycle. 12.5: Substantially reduce waste generation through prevention, reduction, recycling, and reuse.	Plastic Waste Management Rules, 2016 & 2022 amendments. Ban on identified Single-Use Plastic items from July 2022. Enhanced EPR targets for plastic packaging.	India has banned 19 identified SUP items. The EPR framework for plastic packaging is in place. Recycling capacity is being augmented, but a large gap remains between waste generated and waste processed. Progress is high in policy, moderate in implementation.
SDG 14: Life Below Water	14.1: Prevent and significantly reduce marine pollution of all kinds, in particular from land-based activities, including marine debris and nutrient pollution.	National Action Plan on Marine Litter (in draft stage). Coastal Ocean Monitoring and Prediction System (COMAPS).	India, as a signatory to the global pledge, is committed to combating marine litter. Studies indicate high concentrations of microplastics along the Indian coastline. Progress is in its early stages.

Table 1: Mapping National Actions to SDG Targets

(Sources: Ministry of Environment, Forest and Climate Change (MoEFCC) Annual Reports; Central Pollution Control Board (CPCB) Annual Report on Plastic Waste Management; NITI Aayog SDG India Index Reports; Swachh Bharat Mission (Urban) Dashboard)

4. RECOMMENDATIONS

Sowing Peace for a Viksit Bharat

To move from a path of conflict to one of peace, a multi-pronged strategy is required that engages all stakeholders in a new social contract for environmental accountability.

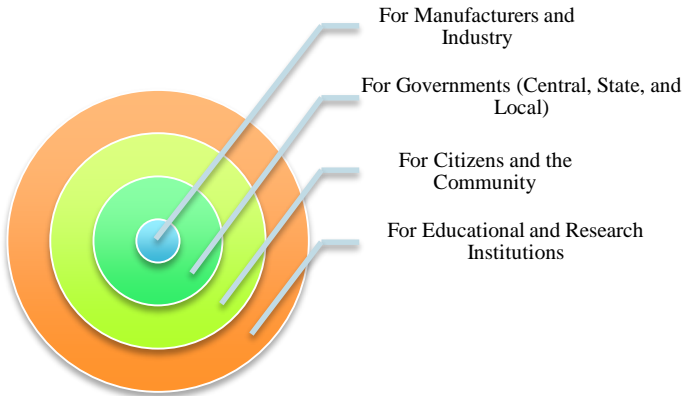


Figure 2: Recommendations (Sowing Peace for a Viksit Bharat)
Source: Author Compiled

For Manufacturers and Industry:

Extended Producer Responsibility (EPR) 2.0: Move past mere compliance to proactive stewardship. Invest in collection and recycling infrastructure that corresponds to the volume of plastic they introduce into the market.

- **Design for Sustainability:** Shift from single-use to multi-use models. Redesign packaging to be mono-material, making it easier to recycle. Invest in R&D for truly biodegradable and compostable alternatives that fulfill functional and economic requirements. (Boosting India's Bioplastics Industry, 2024)
- **Consumer Awareness:** Brands should use their marketing reach to educate consumers on appropriate disposal and the environmental consequences of their products.
- **Circular Economy Models:** Explore and implement business models based on reuse, refill, and product-as-a-service to decouple business growth from virgin plastic consumption.

For Governments (Central, State, and Local):

- **Strengthen and Enforce Bans:** Effectively enforce the ban on identified single-use plastic items. Ensure tough penalties for violators.
- **Invest in Waste Management Infrastructure:** Scale up investment in door-to-door collection, material recovery facilities (MRFs), and

safe, scientific recycling and disposal facilities. This is a core public utility.

- **Promote Innovation:** Provide incentives, subsidies, and tax breaks for startups and industries developing eco-friendly alternatives and advanced recycling technologies.
- **Standardization and Labelling:** Create clear standards for "biodegradable" and "compostable" products to prevent greenwashing. (Dash, 2023) Mandate clear labelling on packaging to guide consumer disposal.
- **Lead by Example:** Mandate plastic-free practices in all government offices and public events. Use public procurement to drive the requirement for sustainable products.

For Citizens and the Community:

- **The Power of 'No':** Cultivate the habit of refusing single-use polythene bags and packaging. Carry your own cloth bags, bottles, and containers.
- **Appropriate Disposal:** Segregate waste at the source into wet, dry, and hazardous categories as mandated. Ensure that dry waste, including plastic, is clean and sent for recycling.
- **Community Participation:** Engage in community clean-up drives and hold local authorities accountable for waste management. Support local businesses that adopt eco-friendly practices.
- **Thoughtful Consumption:** Make conscious purchasing decisions, choosing products with minimal or sustainable packaging.

For Educational and Research Institutions:

- **Integrate Environmental Education:** Incorporate the lifecycle of materials like plastic and the concept of environmental peace into school and university curricula.
- **Community Outreach:** Partner alongside local communities and industries to conduct information campaigns and demonstrate best practices in waste management, acting as a bridge between policy and public action. This conference itself is a vital step in this direction.

5. CONCLUSION

The journey from polythene to peace is not a figurative one; it is a concrete path that India must traverse to secure its future. The empirical

data illustrate a stark reality: while India has made commendable progress in policy formulation and achieved measurable progress in certain areas, such as waste collection and establishing an EPR framework, the vast amount of plastic waste generated and its leakage into the environment remain major challenges. The gap between our developmental expectations and our collective environmental cooperation persists too wide, endangering the very peace—the harmony with nature—that is essential to a prosperous society.

The vision of "Viksit Bharat 2047" cannot be realised upon a foundation of polluted rivers, clogged landfills, and air tainted by plastic burning. It requires a fundamental shift in our approach. We must move beyond viewing plastic as a disposable commodity and recognise it as a persistent pollutant with a long and destructive afterlife. The success of initiatives like the SUP ban and the EPR framework depends not only on government enforcement, but also on a cultural transformation—a shared awakening in which every citizen, manufacturer, and policymaker internalises the costs of plastic pollution. (Mohan, 2023)

We must invest in systemic change: in research for eco-friendly alternatives, in the formalisation of our invaluable informal recycling sector, and in informative campaigns that empower every individual to become an agent of change. The adage holds: "Polythene you sow, polythene shall you reap." If we continue on our current path, we will reap a harvest of environmental degradation and social instability. But by consciously choosing to "sow peace"—through accountable production, thoughtful consumption, and robust waste management we can reap a future of tranquillity, health, and sustainable prosperity. The choice is ours, and the time to sow the seeds of peace is now

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