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## Current situation of plastic waste collection and recycling

Summary	Qty in MMT
Commodity of Plastics consumed in 2018-2019	15.71
Quantity entering Waste Stream 2018-2019 Consumption	6.60
Total Quantity of Waste Plastics 2018-2019 Figures	8.60
Total Quantity of Waste Recycled 2018-2019 (Approx 70%)	6.02

Source: Industry Estimate - ICPE



## Prime Recycling Areas

S.No	State	Location	S.No	State	Location
1	Bihar	Patna	26	Maharashtra	Aurangabad
2	Chattisgarh	Raipur	27	Maharashtra	Solapur
3	Chattisgarh	Bilaspur	28	Maharashtra	Kolhapur
4	Daman	Daman	29	Odisha	Bhubaneswar
5	Delhi	Tikri Kalan	30	Odisha	Cuttack
6	Delhi	Kamruddin Nagar	31	Odisha	Balasore
7	Delhi	Vishwas Nagar	32	Punjab	Amritsar
8	Delhi	Shahdara	33	Punjab	Khanna
9	Gujarat	Dhoraji	34	Punjab	Dhuri
10	Gujarat	Ahmedabad	35	Punjab	Ludhiana
11	Gujarat	Bhavnagar	36	Punjab	Moga
12	Karnataka	Belgaum	37	Punjab	Jalandhar
13	Karnataka	Dharwad	38	Rajasthan	Jaipur
14	Karnataka	Shivamogga	39	Tamilnadu	Chennai
15	Karnataka	Mangaluru	40	Tamilnadu	Coimbatore
16	Karnataka	Davanagere	41	Tamilnadu	Madurai
17	Karnataka	Tumakuru	42	Tamilnadu	Tiruchirappalli
18	Karnataka	Bengaluru	43	Tamilnadu	Tirunelveli
19	Karnataka	Mysuru	44	Tamilnadu	Salem
20	Kerala	Kochi	45	Telangana	Hyderabad
21	Madhya Pradesh	Indore	46	Uttarpradesh	Kanpur
22	Madhya Pradesh	Bhopal	47	Uttarpradesh	Meerut
23	Maharashtra	Dharavi	48	Uttarpradesh	Lucknow
24	Maharashtra	Malegaon	49	West Bengal	Kolkata
25	Maharashtra	Jalgaon			



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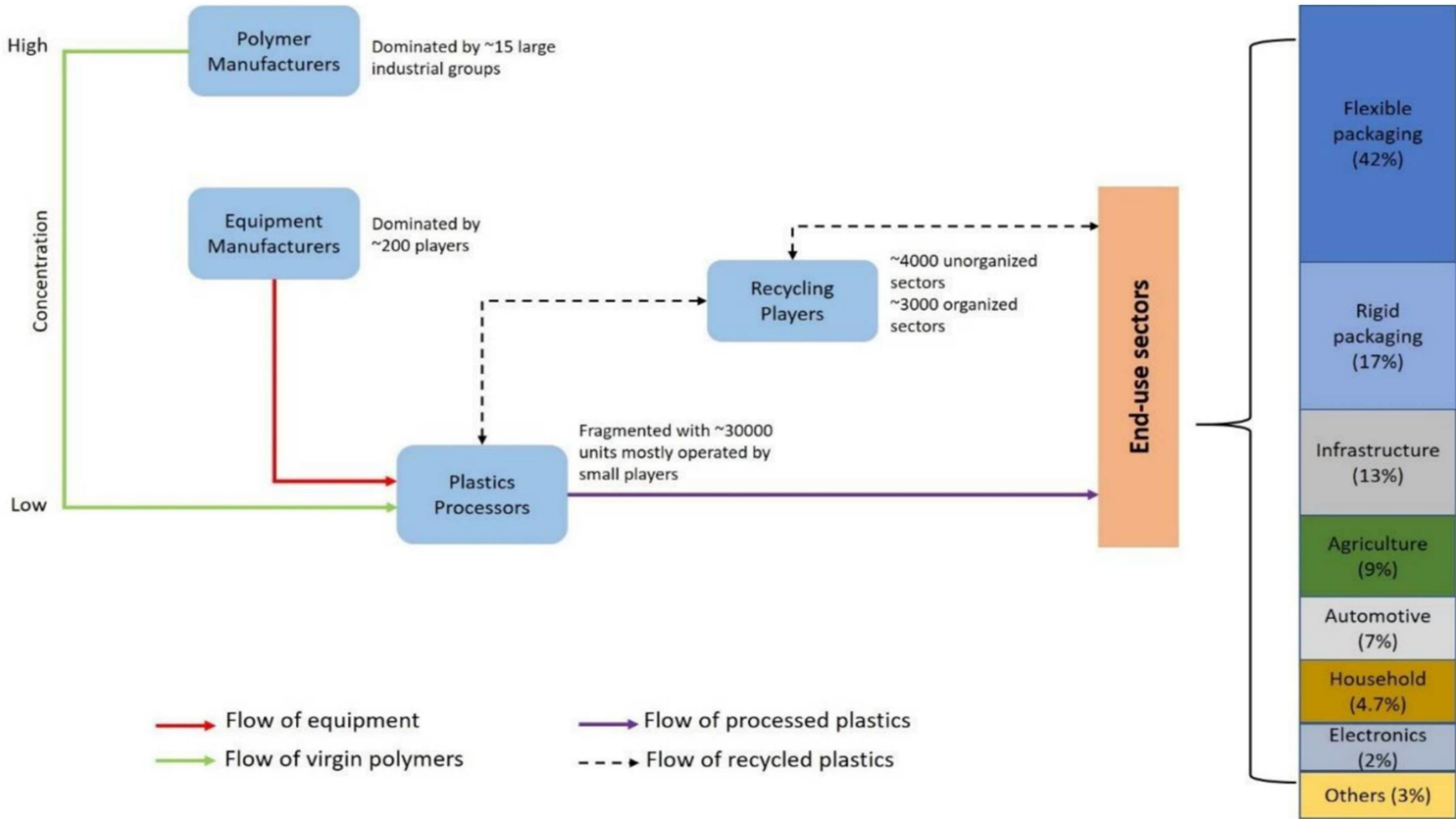
1. No of Recyclers in India 10,000+ mostly unorganized and working with traditional recycling technics.
2. Estimated Quantity of Recycled Plastic Waste close to 6 MMT (2019 Figures)
3. Direct Manpower in Plastic Waste Recycling Industry: 1,00,000+
4. Direct Manpower in Plastic Waste Management (Include Rag Pickers, etc.): 1.2 ~ 1.5 Million
5. Almost 100% of Rigid Plastic Waste Recycled
6. 95% of PET Bottle Waste Recycled.
7. Import of Plastic Waste is banned in India Except PET Bottles which are allowed with special permissions only.
8. Feedstock Recycling by Pyrolysis 50 KT
9. Coprocessing in Cement Kiln 300 MT

Source: CPCB 2019 Report



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# Plastic Recycling Policy, Laws and Regulations on the Recycling of Plastic Waste and Plastic Waste Management.

## Plastic Waste Management Rules 2016 as amended in 2022:

1. The Plastic Waste Management Rules, 2022, mandates the responsibilities of producers, importers and brand-owners with respect to plastic packaging, recycling, use of recycled plastic content and end of life disposal. All such people will have to submit details of recycling certificates obtained from registered recyclers by 30<sup>th</sup> June every year, while filing annual returns on an online portal.
2. The Plastic Waste Management Rules, 2016 cast Extended Producer Responsibility (EPR) on Producer, Importer, and Brand Owner. EPR means the responsibility of a producer for the environmentally sound management of the product until the end of its life
3. The Target for EPR Set were for 2021-2022 – 25%, 2022-2023 – 70% and finally 2023-2024 – 100%, post which every year they need to fulfill 100% EPR.
4. Minimum level of recycling (excluding end of life disposal) of plastic packaging waste (% of Extended Producer Responsibility Target) by 2027-2028 should be close to 80% in almost all categories.

Source: Plastic Waste Management Rules 2022

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## Plastic Waste Management Rules 2016 as amended in 2022:

1. Use of Recycled plastic in plastic packaging should reach close to 60% in non-food Application and 20% in Food Grade Packaging subject to FSSAI Guidelines.
2. Plastic Carry bags less than 120 micron and source packaging bags below 50 micron are banned.
3. Introduction of a mandatory “waste management” clause in the law with EPR.
4. Bags and multilayered packaging are properly labelled.
5. A state level advisory body is set up for overseeing the implementation with civil society as a part of body.
6. Open burning of plastics is banned.
7. Use of small packages from tobacco and gutka are banned.



# Plastic Recycling Policy, Laws and Regulations on the Recycling of Plastic Waste and Plastic Waste Management.

## Plastic Waste Management Rules 2016 as amended in 2022:

1. Every Local body shall be responsible for the development and setting up of infrastructure for segregation, collection, storage, transportation processing, and disposal of plastic waste either on its own or by engaging agencies.
2. The notification also stated that producers, importers and brand owners who do not fulfil their EPR targets will be fined with an environmental compensation, which will then be used for protecting the environment and preventing pollution.
3. The recycling certificates shall be verified by the Central Pollution Control Board (CPCB) or State Pollution Control Board (SPCB) or the Pollution Control Committee (PCB), as the case may be.
4. CPCB will establish a centralized online portal for the registration, as well as filing of annual returns by 31 March. This portal would then act as a data repository on plastic recycling and management.

Source: Plastic Waste Management Rules 2022



## Current situation of plastic waste collection and recycling

### Since 2012 to 2021 Plastic Waste was recycled upto 70%:

1. Industrial Waste is 100% consumed and recycled.
2. Post Consumer Waste is close to 50% recycled.
3. Government of India and various states of India have implemented many sources of consumption of Post Consumer Waste: NHRAI (National Highway Roads Authority of India) , PWD (Public Works Department), State Road Projects, Indian Road Congress has introduced compulsory use of Plastic Waste in Road Construction upto 20%.
4. Plastic content in dumps is less the 5%
5. No of Recyclers in India 10000+ mostly unorganized and working with traditional recycling technics.

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Source: Plastic Waste Management Rules 2022

# Comparison of some mandates on recycled content

Name of Regulation	Effective	Territory		% OBLIGATIONS FOR INCORPORATING RECYCLED CONTENT IN PLASTIC PACKAGING								
				2022	2023	2024	2025	2026	2027	2028	2029	2030
<i>(EU) separate collection for recycling</i>							77				90	
EU Directive 2019/904 on SUP	05-Jun-19	EU	For PET				25					30
Minimum Recycled Content Law	May-21	Washington State	all plastics		15		25		50	50	50	50
Plastic Minimum Content Standards	Jan-22	California State	all plastics	15			25					50
PWM Rules, 2016	16-Feb-22	India	For cat. I (PET)				30	40	50	60	60	60
			For cat. II (Flexi)				10	10	20	20	20	20
			For cat. III (MLPs)				5	5	10	10	10	10

**India has likely set the most aggressive targets and earliest peaking**

## Problems and difficulties of plastic waste collection and recycling

1. Littering is the major issue with Plastics and Packaging in India. Littering laws must be made very stringent. Littering laws like many Countries with stringencies and high penalties should be made. These laws should be endorsed and enforced by local Authorities.
2. Un-organized system of recycling is one more issue. People avoid to get organized due to stringent Pollution approvals which would not permit recycling completely in India.
3. Plastic Waste polymer wise sorting equipment are Highly expensive; hence sorting is one of the biggest issue with Post Consumer Waste.
4. Waste Segregation at source is gradually and slowly picking up then collapsing in most cities of India due to very little local Municipal pressure.
5. Banning of any product or packaging must be avoided and solutions like phasing and replacement out of Multilayered Plastics with unrecyclable structures must be implemented.



- **There shall be an assessment** of the need as well as mobilization of financial resources and technology transfer for each country in order to nationally driven commitments under this provision.
- **Reduce, reuse, refill and repair of plastics and plastic products**



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# 72 nations to adopt Indore's waste-to-energy model

Resolution Passed By The United Nations

Tues News Network

Indore: In Swachh, Indore leads rest of the world follows. Following the footsteps of Swachh city, 72 Asian and African countries are now replicating the bio-methanation model for treatment of wet waste into bio-CNG.

A resolution in this regard was passed in a conference of International Forum for Sustainable Asia and Pacific held recently in Tokyo. The conference was hosted jointly by United Nations (Asia Pacific Region) and government of Japan on Sustainable Technologies.

Indore Municipal Corporation (IMC)'s waste management consultant Asad Warsi was invited as a technical expert to give a presentation about technical features of bio-methanation plant that was set up in Indore for producing bio-CNG out of wet waste generated in city daily.

"A resolution has been passed by UN and it has been decided that the model of Indore's bio-methanation plant will be replicated in about 72 countries of Asia Pacific Region," Warsi told TOI. Countries like Bhutan, Nepal, Bangladesh, Japan, Malaysia, Iraq, Maldives, Oman, South Korea are on the list. Warsi said that at least one bio-methanation plant with 50 tonne capacity each would be set up in each of these countries by UN with help of the Japanese government.

Speaking about major features that prompted the international forum to pass the resolution, Warsi said that Indore's bio-methanation model was found to be one of the most sustainable, cost-effective zero waste model for wet waste management. Besides, its operation and monitoring are also foolproof.

## THE INDORE PROTOTYPE

### ADVANTAGES

► Most sustainable zero waste model for wet waste management

► It fulfills the need of cost effective technologies of partner countries



## CITY SET-UP

Two Units Already Operational  
Chaitram Mandi  
8 tonne/day  
Kabilkhedi  
15 tonne/day

One Proposed At  
Trenching Ground  
50 tonne/day

## PLAN OF ACTION

► UN, with help of Japan govt., will install one plant of 50 tonne capacity in each country

► After that, it will be up to respective nations to carry on with initiative or develop it further



# Bhopal's plastic recycling model showcased at World Bank HQ

lensal.Ayub@bmggroup.com

Bhopal: Bhopal's plastic management recycling project, which has been adopted as a model by the Central Pollution Control Board (CPCB), was demonstrated on Tuesday at the Global Environment Facility (GEF) Council at the World Bank headquarters in Washington DC.

As part of the project, plastic waste of nearly 2.5 MT (one tonne) is picked, segregated and recycled. Bhopal-based Syed Inayat Ali, who introduced the facility with the help of IMC under the Swachh Bharat Mission, made a presentation at the conference which had representatives from 16 countries.

"The city's success story is being looked at in terms of plastic waste management, a problem the entire world is



Global Environment Facility CEO & chairperson Naoko Ishii receives a product sample from Bhopal delegation

facing," Ali told TOI. The project's main plant is located at the old BMC dumpyard in Bhopal. Technical expertise for the project is provided by the UN Development Programme. "Fourteen per cent of Bhopal's waste is plastic. We should aim to reduce plastic use and reuse all of the

plastic," Ali said. Prothyoj Saha from UNDP India was also present on the occasion. "I feel proud that this initiative from India is being appreciated by other countries. Developing countries like India need to take the lead in sustainable development. Cities like Bhopal need to im-

prove and set an example for sustainable development," said Ali. Non-recyclable plastic is being put to use by the BMC. Around 2,500 rag-pickers have been enrolled for plastic waste collection.

Sarthak NGU's project director Ali said that the output is being utilised by concrete manufacturers as alternative fuel for combustion. Processing of 40 tonnes plastic bags beyond 100 degrees Celsius releases carbon monoxide produced POPs. Co-processing in cement kilns issues no residue. Around 32,000 MT has been sold to cement plants. The processed plastic has also been used in about 1,000 km of road construction.

According to estimates, around Rs 50 crore worth of such material has been utilised. Much of the material has also been utilised in rural road development.



## 10,000+ students took part in SUPER

This month's SUPER (Students United Program to Encourage Recycling) Program turned out to be a massive hit with 10,000+ students taking part from St. Ann's group of institutions. Really glad to see the future generation learn ways to manage waste responsibly and contribute their part to save the environment.



**Education and awareness campaigns:** These are being conducted at the school, community, and national level.

**Social media:** Social media influencers and celebrities can promote plastic-free lifestyles. Individuals can also use social media to educate others about the importance of reducing plastic waste.

**Community workshops:** These are held on waste segregation and recycling practices.

**Engage with policymakers:** Individuals advocate for effective waste management policies by engaging with local authorities and policymakers.

**Support initiatives:** Individuals support initiatives that promote a plastic-free lifestyle.

**Use reusable bags and containers:** Individuals can encourage others to use reusable bags, containers, and other alternatives.

**Support companies with eco-friendly policies:** Individuals can support companies that are implementing eco-friendly policies and initiatives to reduce plastic waste



# Steps taken by India to reduce plastic waste and utilizing that REDUCE, REUSE , RECYCLE **RESPECT**

Bans manufacture, import, stocking, distribution, sale, and use of certain single-use plastics, including polystyrene, from 1st July 2022 Improved collection and environmental management of plastic .

Enforcing proper management of packaging waste through EPR.

Circular economy, low carbon impact products

Start ups with innovative solutions

Alternate solutions to plastics





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India has several initiatives to manage ocean plastics, including:

### **Swachh Sagar, Surakshit Sagar/Clean Coast Safe Sea**

A 75-day campaign that ran in 2022 to raise awareness about the impact of plastic on marine life and encourage responsible behavior. The campaign culminated in a large beach cleaning event on September 17, 2022.

### **Coastal Clean Seas**

A United Nations campaign that ran from 2018–2022, involving beach clean-ups by the National Centre for Coastal Research, the Indian Coast Guard, and other organizations.

### **Plastic Waste Management Rules, 2016**

## Cities Combatting Plastic Entering the Marine Environment

This project aims to improve practices to prevent plastic from entering the marine environment. The project will involve demonstration projects in Kanpur, Kochi, and Port Blair.

### Research

Research is being conducted to understand the impact of different types of polymers on fisheries and biota.

### Education

Webinars and print media are being used to educate people about the harmful effects of plastic. Other initiatives include: **The Swachh Bharat Abhiyan, The National Mission for Clean Ganga, and The Smart Cities Mission**

. Save Our Seas Initiative's largest country partnership to date. It will be implemented across diverse geographies including smaller and larger cities along coasts, rivers, and island settings.







India has committed to achieving net-zero carbon emissions by 2070:

**Target year:** India's target year is 2070.

**Emissions coverage:** The target covers all key sectors of the economy.

**Initiatives:** India has taken several initiatives to reduce emissions and promote green economic growth, including:

Providing viability gap funding for offshore wind energy projects

Setting up capacity of 100 MT for coal gasification and liquefaction by 2030

Launching a scheme to provide environmentally friendly alternatives for bio-manufacturing and bio-foundry

Framing policies and setting action plan- NITI AYOOG



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**SUPPORTED BY:**

Mr. Ravish Kamat – President

Dr. Raju Desai – Vice President

Mr. Dharmendra Gandhi – Treasurer

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**PRESENTED BY:**

DR SAMEER JOSHI  
plasticrecycling@plastindia.org

LET US STRIVE TO MAKE PLASTIC FANTASTIC AGAIN