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Confederation of Indian Industry

Roadmap for managing films and flexible packaging in India

Acknowledgement: The Confederation of Indian Industry is grateful for the support and inputs received from the India Plastics Pact Members and Supporters, as well as individual experts during the preparation of this Roadmap.

Month and year of publication: January 2025

Version: v1.0, 3 January 2025

Source: India Plastics Pact archives

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List of abbreviations

CAGR	compounded annual growth rate
EPR	extended producer responsibility
FSSAI	Food Safety and Standards Authority of India
FMCG	fast-moving consumer goods
IPP	India Plastics Pact
NGO	non-government organisation
PE	polyethylene
PET	polyethylene terephthalate
PIBO	producers, importers, and brand owners
PP	polypropylene
PWM	plastic waste management
WMO	waste management organisation

Source: India Plastics Pact archives

What is the India Plastics Pact?

The India Plastics Pact (IPP), a voluntary business initiative managed by the Confederation of Indian Industry, aims to create a circular economy for plastics packaging in India. IPP brings together businesses and non-government organisations (NGOs) across the plastics value chain to commit to a vision of a world where plastic is valued and doesn't pollute the environment. It is the only Plastics Pact in Asia and is part of a global network of 13 Plastics Pacts convened by the Ellen MacArthur Foundation and WRAP (Figure 2).

The initiative offers a platform to stakeholders for collective action and supports the creation of innovative solutions to manage plastic packaging and promote a circular economy for plastic packaging. Signatories of the Pact commit to four ambitious and timebound targets (Figure 1) designed to drive changes in the production, use, and disposal of plastic packaging, ensuring efficient use and promoting circularity.

Target 1

Define a list of unnecessary or problematic plastic packaging and items and take measures to address them through redesign and innovation

Target 2

100%

of plastic packaging to be reusable, recyclable, or compostable*

Target 4

25%

average recycled content across all plastic packaging

Target 3

50%

of plastic packaging to be effectively recycled

Figure 1 India Plastics Pact 2030 Targets

* These would only include compostable plastics with all the following properties
a) do not leave any microplastic residue,
b) used in closed-loop and controlled systems with sufficient infrastructure available or fit-for-purpose applications, and,
c) properly labelled as 'Home' or 'Industrial' compostable.

The vision and the targets of the India Plastics Pact are based on three key principles for driving a circular economy for plastics packaging:

Eliminate

all unnecessary or problematic plastic items

Innovate

to ensure that the plastics we do need are reusable, recyclable, or compostable

Circulate

all the plastic items we use to keep them in the economy and out of the environment

Source: India Plastics Pact archives

Apart from driving circularity of plastics packaging and tackling plastic pollution, delivering the targets will also benefit society and the economy. Achieving the Pact's 2030 targets will deliver significant greenhouse gas reduction by curtailment of fossil-derived plastics, greater use of recycled plastics, and increased recycling.

The Pact supports the Extended Producer Responsibility (EPR)[1] framework of the government and will improve solid waste management in the country, as envisioned in the *Swachh Bharat Abhiyan*[2].

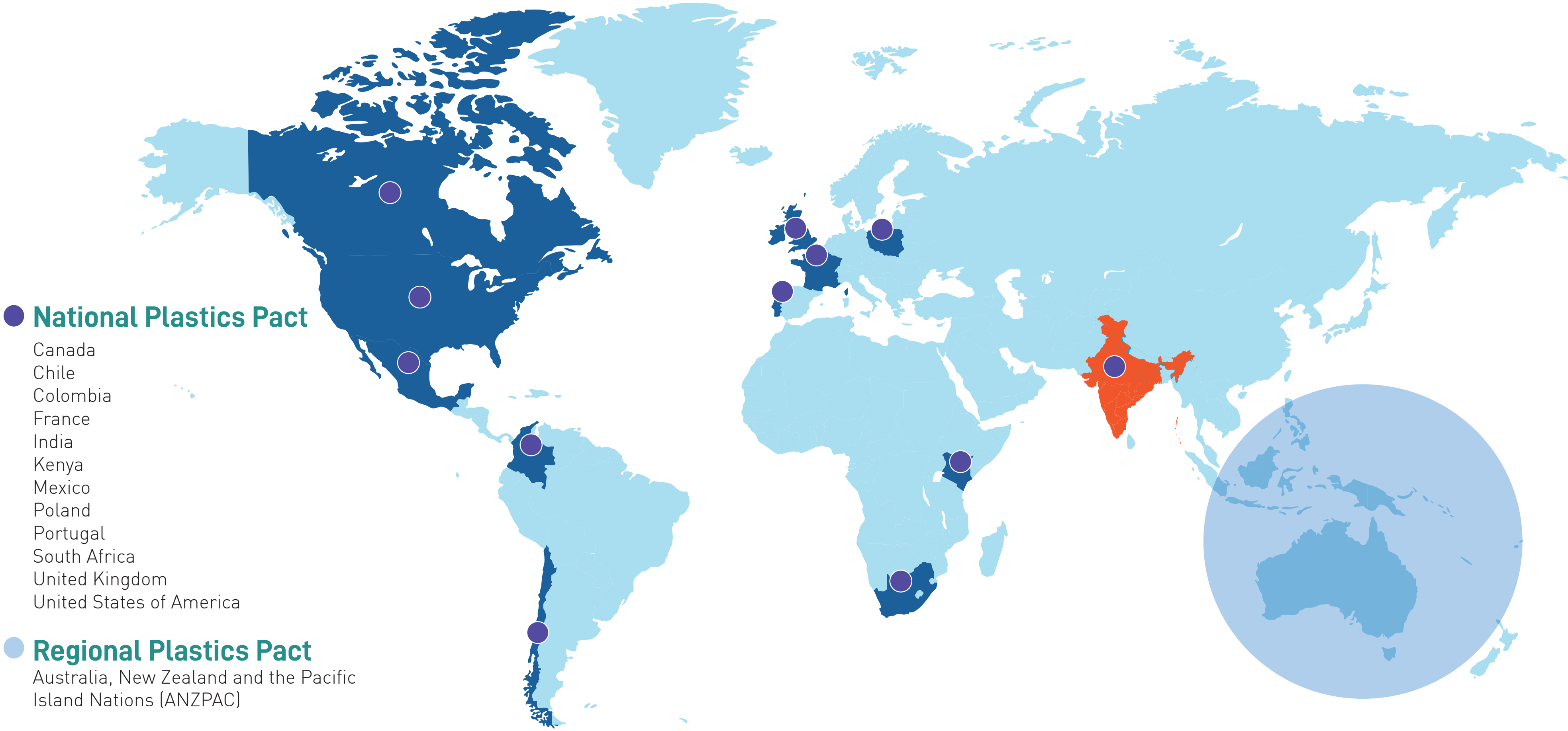

Figure 2 The Plastics Pact Network, convened by the Ellen MacArthur Foundation and WRAP

1 Government of India. (2020). Uniform Framework for Extended Producers Responsibility (Under Plastic Waste Management Rules, 2016). Available at PWM-Amendment-Rules-2022.pdf. Accessed on 26 December 2024.

2 Government of India. (2014). Swachh Bharat Abhiyan – Urban (SBM-U). Available at https://sbmurban.org/aboutUs. Accessed on 27 December 2024.

Why a separate Roadmap for films and flexible packaging?

Despite attractive cost economics, easy availability, excellent functionality and versatility, the use of flexible packaging is associated with significant challenges; perhaps, flexible packaging has become a victim of its own success.

A separate roadmap therefore will identify and address particular features of flexible packaging which make it both, an excellent packaging choice, but also a challenge when it enters the waste stream.

The next sections justify the need for a separate Roadmap for films and flexible packaging.

Widespread use as a packaging format

Flexible packaging is widely used because of its low cost and versatility, particularly for fast-moving consumer goods (FMCG). It enables cost-effective transport of products to the country's large and geographically-dispersed consumer base. India, a highly cost-sensitive market, benefits significantly from the use of flexible packaging, allowing businesses to cater to consumers across socio-economic categories.

Thus, flexible packaging accounts for 73% of the total plastic packaging used in India. By comparison, the total share of flexible plastic packaging in the US is 28%[3], and in Europe and Canada, flexible plastic packaging makes up 45% and 47% of the quantity of total plastic packaging used in these areas, respectively[4,5]. In emerging economies such as South Africa and Thailand, flexible packaging makes up about 42%[6] and 47%[7] of the total plastic packaging consumed (Figure 3).

The flexible packaging market in India grew by USD 12.72 billion, at a compounded annual growth rate (CAGR) of almost 11% during 2021-2025. In the past four years, the capacity for film manufacturing in India increased by 45%; in FY 2024-25, it is estimated to grow another 20%[8].

3 Flexible Packaging Association. (2023). *Report to the members 2022*. Available at FPA Report to the Members, 2022. Accessed on 26 December 2024.

4 Arnold M., Manoochehri S., Wahlström M., Nelen D., and Colgan S. (2022). *Flexible plastics in Europe's circular economy*. European Environment Agency. Available at https://circulareconomy.europa.eu/platform/sites/default/files/2022-12/Flexible%20Plastics.pdf. Accessed on 26 December 2024.

5 Heffernan M. (2024, January 3). *Flexible packaging nearly half of Canadian market*. Plastics Recycling Update. Available at https://resource-recycling.com/plastics/2024/01/03/study-flexible-packaging-nearly-half-of-canadian-market/#:~:text=Results%20from%20the%20first%20phase,put%20on%20the%20Canadian%20market. Accessed on 26 December 2024.

6 Plastics South Africa. (2022, November 28). *SA's plastics industry releases latest plastics production and recycling stats*. Available at https://www.plasticsinfo.co.za/wp-content/uploads/2022/11/Latest-Industry-Statistics-released.pdf. Accessed on 26 December 2024.

7 Data obtained from Huhtamaki India Limited.

8 Maida J. (2021, August 5). *Flexible Packaging Market in India: Top Vendor like Amcor Plc is Expected to Generate Revenue Worth USD 12.45 Billion*. PR Newswire. Available at https://www.prnewswire.com/news-releases/flexible-packaging-market-in-india-top-vendor-like-amcor-plc-is-expected-to-generate-revenue-worth-usd-12-45-billion-301349366.html. Accessed on 26 December 2024.

In India, packaging is the fifth largest sector of the economy. It was valued at USD 128 billion in 2023[9], and is expected to reach a value of USD 205 billion by 2025, at a CAGR of 25%[10]. The plastic packaging market in India is also growing at a CAGR of more than 20%[11]. This growth can be attributed to the growth of domestic and international retail, pharmaceutical, e-commerce, and FMCG companies entering the Indian market.

Wide range of compositions

Flexible packaging is inexpensive and easily available, and is therefore used by both large and small brands in a variety of non-standardized compositions. A 2015 study by the India Brand Equity Foundation showed that almost two-thirds of FMCG sales in India (in terms of revenue) is unbranded (both loose and packaged)[12]. The packaging, especially flexible packaging for unbranded products, is likely to be supplied and used by dispersed, small-scale manufacturers for whom cost is the primary consideration, leading to a variety of packaging compositions being placed on the market.

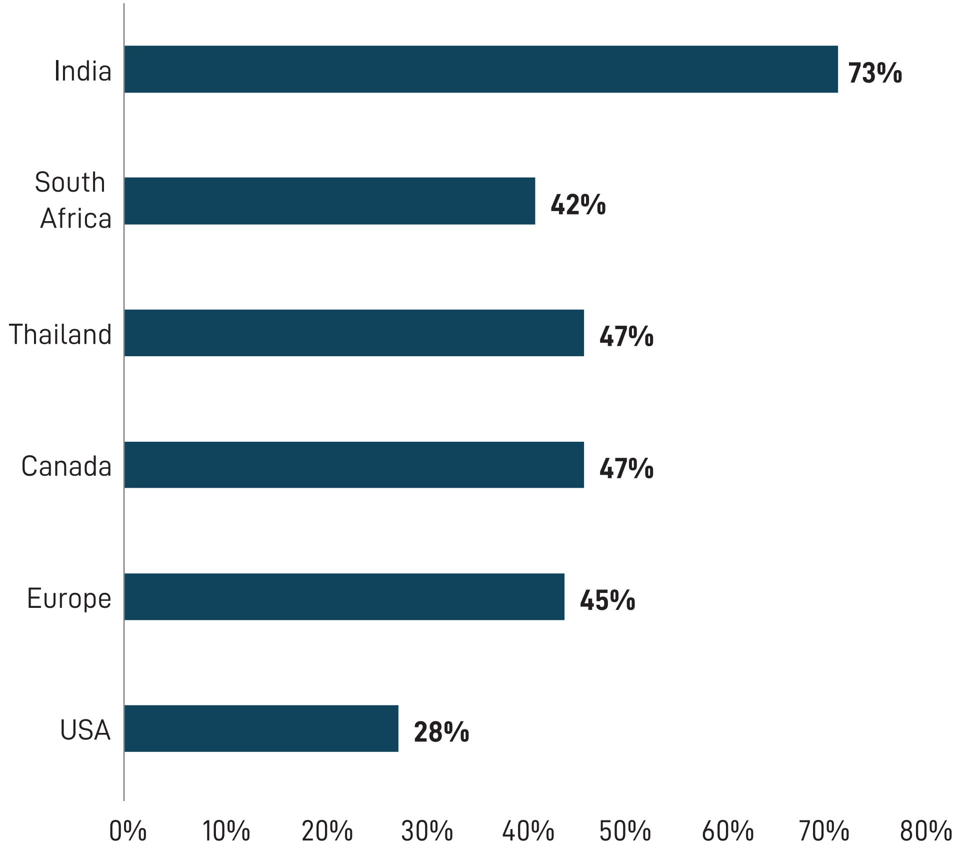

Figure 3 Share of flexible plastic packaging (in %) in total plastic packaging placed on market, by country

9 Maximize Market Research. (2023). *India Packaging Market – Industry Analysis and Forecast (2024-2030)*. Available at India Packaging Market - Industry Analysis & Forecast (2024-2030). Accessed on 26 December 2024.
10 Garg L. (2021, October 18). *Indian packaging sector – an outlook of the industry*. Invest India. Available at Indian Packaging sector – An outlook of the industry. Accessed on 26 December 2024.
11 Packaging Industry Association of India. (2023). *Packaging Sector*. Available at https://www.piai.org/packaging-sector.php#:~:text=Moreover%2C%20the%20plastic%20packaging%20market,go%20by%20%E2%80%93%20seeing%20is%20believing. Accessed on 26 December 2024.
12 India Brand Equity Foundation. (2023, March 6). *FMCG sector prospects in the Indian rural market*. Available at FMCG Sector prospects in the Indian Rural Market | IBEF. Accessed on 26 December 2024.

Source: India Plastics Pact archives

Dominance of multilayer formats

Polyethylene (PE), polypropylene (PP), polyethylene terephthalate (PET) are the most commonly used resins to manufacture films. More than half of PE and PP consumed in India is used for flexible packaging applications. Of the total demand for PET in India, 41% goes into making PET films[13]. More than 60% of flexible packaging used in India is multilayered[14]. The use of multilayered flexible packaging significantly limits its recyclability and increases the likelihood of littering and environmental leakage.

Lack of segregation at source

The lack of waste segregation at source complicates the management of flexible packaging waste, because flexible packaging in municipal solid waste is contaminated and mixed with organic matter and other materials. This mixed waste stream has minimal or no economic value for waste pickers and recyclers. Thus, a large portion of flexible packaging waste ends up in waste-to-energy plants or cement kilns, where it is incinerated, resulting in a permanent loss of material.

In India, as in other parts of the world, effective management of flexible packaging waste requires interventions at different stages of the packaging value chain. This includes improvements in packaging design, increase in segregation at source by consumers, collection, recycling, and the development of end-markets for a post-consumer recyclate.

A roadmap exploring solutions to these problem areas can contribute to achieving a circular economy for films and flexible packaging in India. This document outlines a step-by-step framework for actionable interventions by relevant stakeholders. It aligns with India's EPR Guidelines and the India Plastics Pact 2030 targets.

13 PlastIndia Foundation. (2023). *Plastics Industry Status Report-India-2021-22 & 1H 2022-23 Update*. Available at https://www.plastindia.org/publications-industries-status. Accessed on 26 December 2024.

14 India Plastics Pact. (2024, February 26). *The India Plastics Pact Annual Report 2022-23*. Available at https://www.indiaplasticspact.org/uploads/1710591779document.pdf. Accessed on 26 December 2024.

The Roadmap explores specific problem areas, including:

Design

- Use of problematic polymers
- Presence of incompatible polymers/materials in multilayer flexible packaging.

Segregation and collection

- Lack of segregation at source
- Low collection rates

Recycling

- Lack of recycling infrastructure in the country
- Use of outdated equipment for recycling of flexible packaging
- Lack of external investment in recycling of flexible packaging
- Absence of installed capacity for high-quality recycling of flexibles

End-markets

- Lack of awareness of suitable applications
- Low availability of high-quality recyclate

Earlier work by the India Plastics Pact had focused on: (i) challenges with managing waste due to the small format category of flexible packaging, and, (ii) challenges with the incorporation of recycled content into flexible packaging. The latter is important because it is a requirement of the Indian Government laid out in the Extended Producer Responsibility Guidelines .

Source: India Plastics Pact archives

The Roadmap

What does the Roadmap cover?

The Roadmap is built on the three core principles of the India Plastics Pact: eliminate, innovate, and circulate. It outlines the specific roles and responsibilities of each stakeholder in the plastics value chain and clearly defines areas of intervention with associated timelines.

Key stakeholders identified in the Roadmap include:

India Plastics Pact Secretariat

Oversee the implementation and progress of the activities.

Retailers

Promote consumer participation and communication.

Converters

Introduce innovative packaging solutions by redesigning flexible packaging to improve recyclability and reduce environmental impact.

Consumers

Participate in waste segregation and responsible disposal practices.

Brands

Drive adoption of new packaging structures and support collection initiatives.

Waste management organisations (WMOs)

Ensure effective collection and secondary segregation of post-consumer flexible packaging.

Non-governmental organisations (NGOs)

Provide necessary advocacy support, education, and community engagement.

Recyclers

Improve recycling processes and manufacture high-quality recyclate.

Government

Endorse and promote the Roadmap; encourage stakeholders in the plastics value chain to develop and implement action plans for films and flexibles based on the Roadmap.

Investors and innovators

Provide financial and technical support to facilitate the activities in the Roadmap.

By clearly defining the roles and interventions for each stakeholder, the roadmap sets out a structured pathway towards the India Plastics Pact's circular economy objectives within a defined timeline.

Source: India Plastics Pact archives

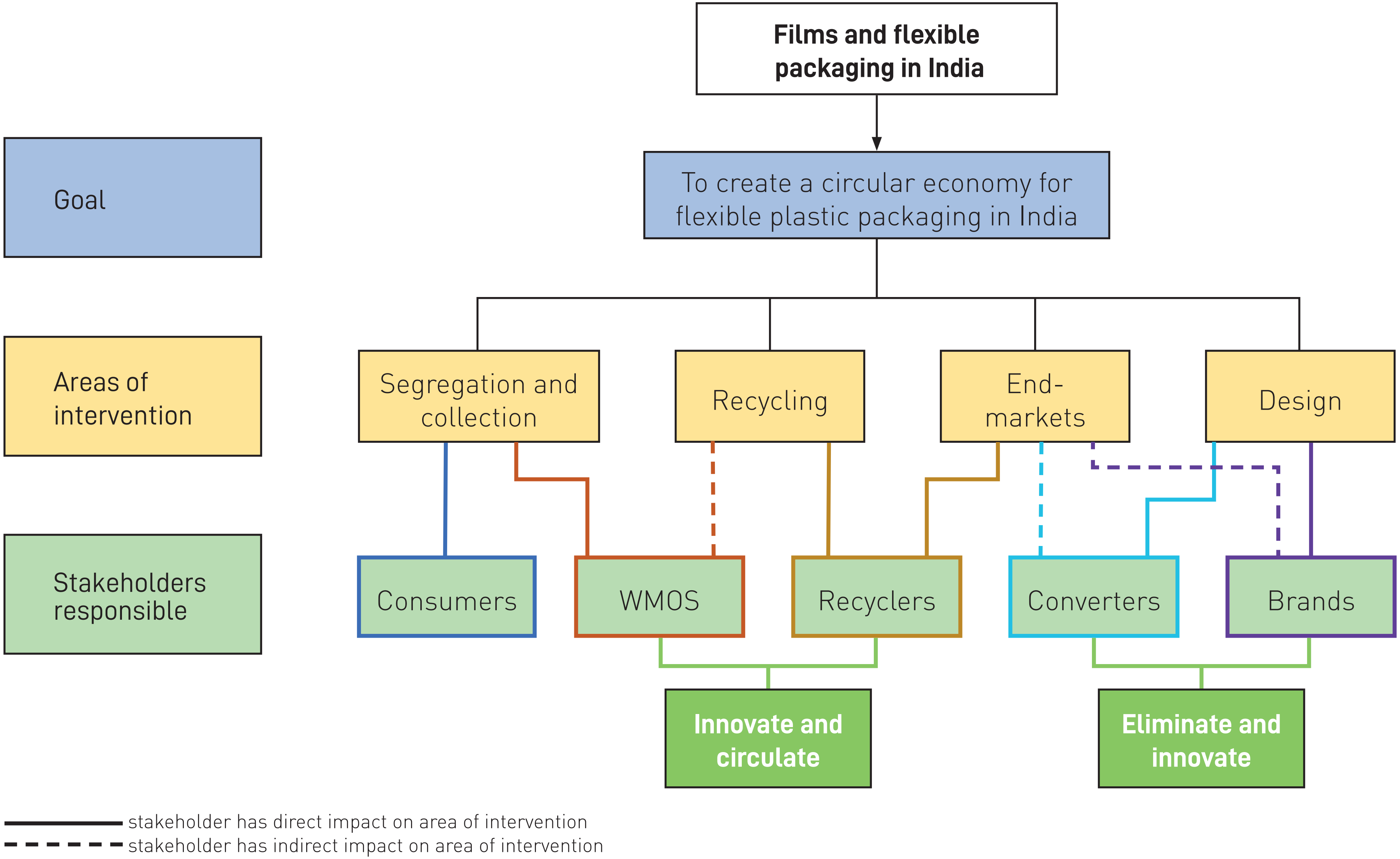

Figure 4 Strategy to manage films and flexible packaging in India

Areas of intervention

The activities outlined in the roadmap are categorized into four intervention areas. The expected outcomes for each activity are detailed in the tables below. These intervention areas serve as the foundation for targeted actions aimed at improving the management of flexible packaging within the plastics value chain and are

Design
Initiatives to improve the design of packaging to make it more recyclable

Segregation
Activities focused on improving the segregation of flexible packaging waste

Collection
Activities focused on improving the collection and channelization of flexible packaging waste to recyclers

Recycling
Actions aimed at increasing the high-quality recycling of collected materials through advanced mechanical and non-mechanical recycling

End markets
Efforts to identify, create and expand markets for recycled flexible packaging.

Source: India Plastics Pact archives

The following sections define each stakeholder's responsibilities, classified as either 'Lead' or 'Support'. The Lead is accountable for the execution and enforcement of the activity while the supporters offer guidance, inputs, and resources where applicable, and assist in the distribution and dissemination of the output.

Design

Outcome	Activity	Delivery by			Role	
		2025-26	2026-28	2028-30	Lead	Support
Recyclable mono-material flexible packaging designs tested and scaled.	Prepare a design guidance for films and flexible packaging in Indian context				IPP Secretariat	Brands, converters, recyclers
	Identify product-specific packaging applications for trials for mono-material packaging				Brands, converters, recyclers	IPP Secretariat
	Increase the adoption of mono-material flexible packaging to a wider range of products				Brands, converters	IPP Secretariat
Increased use of recycled content in flexible packaging applications (for non-food applications)	Identify flexible packaging applications (primary, secondary, and tertiary) in which recycled content can be incorporated				Recyclers, brands, converters	IPP Secretariat, WMOs
	Incorporate recycled content as per EPR mandate in flexible packaging portfolio				Brands, converters	IPP Secretariat

Segregation and collection

Outcome	Activity	Delivery by			Role	
		2025-26	2026-28	2028-30	Lead	Support
Widespread awareness about segregation of flexible packaging	Design and conduct awareness campaigns on waste segregation and segregation of flexible plastic packaging for consumers				Brands	NGOs, WMOs, converters, recyclers, consumers, IPP Secretariat

Recycling and end-markets

Outcome	Activity	Delivery by			Role	
		2025-26	2026-28	2028-30	Lead	Support
High-quality feedstock for recycling	Define quality parameters for input feedstock				Recyclers	WMOs, brands, converters
Packaging application as the preferred end-market for post-consumer recyclate of flexibles (for non-food applications)	Explore packaging application as an end-market for flexible post-consumer recyclates (use of post-consumer in food packaging is subject to FSSAI standards)				Brands, converter, recyclers	IPP Secretariat
Widespread use of flexible post-consumer recyclate in other end-markets	List the current end-markets for flexible post-consumer recyclates in India				IPP Secretariat	All IPP Signatories
	Explore products in which flexible packaging recyclates can be used				Recyclers	Brands, converters
	Scale the use of post-consumer recyclate to more applications				Recyclers	IPP Secretariat
High-quality recyclate widely available in the market	Define quality parameters for post-consumer recyclate as per end-market application				Brands, Recyclers	WMOs, brands, converters

Roadmap and Government regulations

The Plastic Waste Management (PWM) Rules were introduced by the Government of India in 2016 which established a regulatory framework for managing plastic waste in India. An important component of these rules are the Extended Producer Responsibility (EPR) Guidelines, which require producers, importers, and brand owners (PIBOs) to collect and recycle the plastic packaging they introduce into the market. In July 2022, the government further strengthened the measures for plastic waste management by banning 19 single-use plastic (SUP) items to reduce the production of low-value plastics.

While the EPR Guidelines provide PIBOs with a structured framework to achieve plastic waste management targets, the Roadmap outlines specific, actionable steps to ensure these targets are met.

The current targets for brands concerning films and flexible packaging are outlined in the EPR Guidelines[1].

Obligations for minimum level of recycling

Category	Target for 2024-25	Target for 2025-26	Target for 2026-27	Target 2027-28 onwards
Cat II (flexible multilayer, multi-polymer packaging)	30%	40%	50%	60%
Cat III (multilayer, multi-polymer, multi-material packaging)	30%	40%	50%	60%

Obligations for incorporation of recycled content

Category	Target for 2025-26	Target for 2026-27	Target for 2027-28	Target 2028 onwards
Cat II (flexible multilayer, multi-polymer packaging)	10%	10%	20%	20%
Cat III (multilayer, multi-polymer, multi-material packaging)	5%	5%	10%	10%

The India Plastics Pact calls on stakeholders across the plastics value chain to collaborate to meet common objectives set out through the Roadmap. Its step-by-step approach can help stakeholders align their business operations to meet the targets for collection, recycling, and the incorporation of recycled content in packaging. This alignment will facilitate compliance with EPR requirements and contribute to the Swachh Bharat Mission.

The government's endorsement and dissemination of the roadmap across the Indian industry will accelerate the adoption of necessary changes. By encouraging businesses to implement the Roadmap's steps, the government can drive faster progress in managing films and flexible packaging, ultimately contributing to support the objectives of the PWM Rules and a circular economy for plastic packaging in India.

Source: India Plastics Pact archives

Collective action on films and flexibles to achieve 2030 vision

India Plastics Pact Signatories will

- collaboratively work to improve the management of flexible plastic packaging in India
- review flexible packaging in their portfolio to identify opportunities for improving recyclability
- implement behaviour change programmes with measurable impact metrics
- integrate informal workers into the collection of flexible packaging through targeted initiatives
- quantify and report year-on-year data on recyclable and non-recyclable flexible packaging placed on the market, and
- disseminate information about success cases to other stakeholders across the value chain for quick scale-up of solutions.

The India Plastics Pact Secretariat commits to

- guiding IPP signatories in achieveing the goal of creating a circular economy for flexible packaging in India
- regularly reporting on the progress in achieving the goal through webinars, in-person events and meetings
- convening stakeholders from across the plastics value chain, including micro, small, and medium enterprises to collaborate on tackling obstacles related to films and flexible packaging in India
- reviewing targets and activities in the Roadmap in the light of policy changes and reforms
- seeking additional external funding for projects, campaigns, and research to accelerate progress to meet the India Plastics Pact Targets, and
- sharing knowledge on innovations and best practice through the Plastics Pact Network.

India Plastics Pact

The India Plastics Pact (IPP), a CII initiative, was launched in 2021, and unites businesses, governments, NGOs and citizens to create a circular economy for plastic packaging in India. The CII-ITC Centre of Excellence for Sustainable Development (CESD) anchors the India Plastics Pact, within CII. The work of the Pact covers all plastic resins at all stages of the plastics packaging value chain. The India Plastics Pact is the first Plastics Pact in Asia and part of a global network of 13 Plastics Pacts. As of December 2024, 55 organisations were signatories to the India Plastics Pact.

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Confederation of Indian Industry

The Confederation of Indian Industry (CII) works to create and sustain an environment conducive to the development of India, partnering Industry, Government and civil society, through advisory and consultative processes.

For more than 125 years, CII has been engaged in shaping India's development journey and works proactively on transforming Indian Industry's engagement in national development. With its extensive network across the country and the world, CII serves as a reference point for Indian industry and the international business community.

In the journey of India's economic resurgence, CII facilitates the multifaceted contributions of the Indian Industry, charting a path towards a prosperous and sustainable future. With this backdrop, CII has identified "Globally Competitive India: Partnerships for Sustainable and Inclusive Growth" as its Theme for 2024-25, prioritizing 5 key pillars. During this year, it would align its policy recommendations, initiatives, and activities with this overarching framework to facilitate strategic actions for driving India's global competitiveness and growth through a robust and resilient Indian Industry.

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CII-ITC Centre of Excellence for Sustainable Development

The CII-ITC Centre of Excellence for Sustainable Development (CESD) is the ecosystem creator for sustainable development in India. As a 19-year-old industry-led institution within CII, the Centre drives sustainable, environmental, inclusive and climate-friendly transformation among stakeholders through research, data-driven digital tools, frameworks, collaborative initiatives and capacity development.

CESD works towards bringing local and global macro challenges to the centre stage; building policy consensus on critical issues; strengthening stakeholders' awareness and representation on policy and regulatory reforms and enabling actions that positively impact the environment, nature and communities.

With a vision to drive transformation towards sustainable development, the Centre continues to play a focal role in Government-Industry dialogues on national regulations; articulating stakeholders' discourse on global policies; putting forth Indian Industry's stand on macro-economic issues and accentuating the need for sustainable and inclusive transformation.

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