

# **Working Paper- Scope of Circular Economy and ban on plastics in India by 2022.**

## **EXECUTIVE SUMMARY**

This working paper is an attempt to understand the mechanism of Circular Economy and its viability as a model as well as an evolving aspect of governance in India where it can contribute towards long term sustainability. The paper aims to study the relation between growth and development on one side while reducing the impact of Climate Change by way of optimum utilization of alternate resources to attain harmony and balance in the environment. The carbon footprint that infests the plastic products poses a grave challenge to the natural ecosystem. With respect to that, the decisive decision to impose a ban on produce and manufacture of plastics in India comes as a harbinger for a possible radical shift across the spectrum. However larger public policy questions remain to be addressed which the working paper touches upon.

## **INTRODUCTION- UNRAVELING THE DISCOURSE**

A circular economy is an economic system of closed loops in which raw materials, components and products lose their value as little as possible, renewable energy sources are used and systems thinking is at the core<sup>1</sup>. There is a clear parallel between attaining Circular Economy by means of imposing ban on plastics altogether. According to the Indian Ministry of Environment, Forest and Climate Change (hereinafter referred to as MoEFCC), it is estimated that India generates upwards of 9.46 million tonnes of plastics waste annually, of which 40 per cent remains

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<sup>1</sup>What is the definition of Circular Economy? <https://kenniskaarten.hetgroenebrein.nl/en/knowledge-map-circular-economy/what-is-the-definition-a-circular-economy/> (last accessed on August 7<sup>th</sup>, 2021).

uncollected. A circular economy by design itself eliminates waste and pollution emanating from it. It keeps products and materials in use and regenerates natural systems thus providing a solution to plastic pollution. The EPR under Rule 9 of the Plastic Waste Management Rules, 2016 in India, states that the responsibility of producers, Importers and Brand Owners entails that the producers shall work out modalities for waste collection system based on Extended Producers Responsibility and involving State Urban Development Departments, either individually or collectively, through their own distribution channel or through the local body concerned. The Primary responsibility for collection of used multi-layered plastic sachet or pouches or packaging is that of the Producers, Importers and Brand Owners who introduce the products in the market. They need to establish a system for collecting back the plastic waste generated due to their products. The Brand Owners whose consent has been renewed before the notification of these rules shall submit such plan pertaining to the manufacture and use of non-recyclable multilayered plastic if any should be phased out in two years time. The producer, within a period of three months from the date of final publication of these rules in the Official Gazette shall apply to the Pollution Control Board or the Pollution Control Committee, as the case may be, of the States or the Union Territories administration concerned, for grant of registration. No producer shall on and after the expiry of a period of Six Months from the date of final publication of these rules in the Official Gazette manufacture or use any plastic or multilayered packaging for packaging of commodities without registration from the concerned State Pollution Control Board or the Pollution Control Committees. The rule mandates that every producer shall maintain a record of details of the person engaged in supply of plastic used as raw material to manufacture carry bags or plastic sheet or like or cover made of plastic sheet or multilayered packaging<sup>2</sup>. The Standard operating procedure for registration of producers,

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<sup>2</sup> Plastic Management Rules 2016, Published in Official Gazette of India,

importers, brand owners under Plastic Waste Management Rules 2016 states that no person shall manufacture carry bags or recycle plastic bags or multi-layered packaging unless the person has obtained a registration from the State Pollution Control Board or the Pollution Control Committee of the Union Territory concerned, as the case may be, prior to the commencement of production<sup>3</sup>.

India intends to move away entirely from single-use plastics (SUP) by 2022 as it vehemently declared the goal of a plastics-free nation. India has perhaps become the first Asian country to develop a plastics pact, launching a ground-breaking new initiative to bring together leading businesses at a national level to make commitments for building a circular system for plastics. The India Plastics Pact (IPP) has launched as collaboration between WWF India and the Confederation of Indian Industry. The India Plastics Pact's targets to be achieved by 2030 are:

- defining a list of unnecessary or problematic plastic packaging and items and take measures to address them through redesign and innovation
- 100% of plastic packaging to be reusable or recyclable
- 50% of plastic packaging to be effectively recycled
- 25% average recycled content across all plastic packaging.

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<http://www.mppcb.nic.in/proc/Plastic%20Waste%20Management%20Rules.%202016%20English.pdf> (last accessed on 8<sup>th</sup> August, 2021).

<sup>3</sup>Standard Operating Procedure for Registration of Producers, Importers, & Brand Owners (PIBOs) under Plastic Waste Management Rules 2016, <https://cpcb.nic.in/openpdffile.php?id=UmVwb3J0RmlsZXMvMTI0MI8xNjE2NTAyNTM5X21lZGlhcGhvdG8yMjY4OC5wZGY> (last accessed on 4<sup>th</sup> Sept, 2021).

The Indian pact's targets will address the elimination of unnecessary and problematic plastic packaging ensuring that packaging becomes reusable, recyclable or compostable while also increasing the rates of reuse, collection, recycling and the recycled content in plastic packaging<sup>4</sup>.

### **CONCEPTUALIZING THE POLICY FRAMEWORK**

The recent draft guidelines published by the MoEF&CC on Extended Producers Responsibility (hereinafter referred to as EPR) for plastic wastes is a classic example of the approach central to pushing forth cardinal principles of a circular economy. EPR refers to the responsibility for management of the disposal of products by producers once those products are designated as no longer useful by consumers. It is a crucial policy perspective and a public policy front of the gamut of circular economy. It is the commitment made by a producer to facilitate a reverse collection mechanism and recycling of end of life, post-consumer waste. The objective is to develop an effective and efficient system that takes care of collection, segregation and transportation of the material to the waste disposal facility which is approved as a Producer Responsibility Organisation (PRO) Agency. These materials are used in cement kilns, pyrolysis, for road construction and recycling centres, on the basis of its quality and price. The waste generators such as brand owners or producers are required to collect back the end of life waste generated through their business. This responsibility is met through waste collection agencies which are recognized as a PRO. This market practice brands with financial incentives to create markets for reuse, buy-back or recycling of materials. Companies can also delegate this

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<sup>4</sup>India to become first Asian Country to launch a Plastics Pact, UK Research and Innovation, <https://www.ukri.org/news/india-to-become-first-asian-country-to-launch-a-plastics-pact/> (last accessed on 10<sup>th</sup> August, 2021).

responsibility to a third-party<sup>5</sup>. EPR is a ‘polluter pays’ principle under which producers and users of plastics, especially plastic packaging have to take back plastic waste and recycle or dispose of them in an environmentally sound manner. The first regulation on EPR was enacted almost a decade back in the Plastic Waste (Management & Handling) Rules, 2011. The rules directed municipal authorities to set up plastic waste collection centres with financial support from the producers. The main problem was that EPR was vaguely defined and the municipalities were not capacitated to implement the rules. This law was repealed within five years<sup>6</sup>. Some companies hired third party organisations called the Producers Responsibility Organisations (PROs) to collect and dispose of wastes on their behalf. Moreover, the best way to reduce plastic waste is to find an alternative to plastics. But, this was a colossal failure due to lack of formal coordination between PROs and municipalities wherein the companies failed to enact an EPR-compliant system. While EPR laws hold the potential to encourage a shift towards providing the functions of the products in a more efficient way they must be carefully designed to be effective. EPR laws must be able to fully assign the costs of recovery and recycling to producers for the producers to build more easily recycled products. To fully assign these costs, EPR laws must contain at least four elements such as a strong recovery requirement, meaningful financial responsibility, substantial oversight of recyclers; and robust enforcement provisions<sup>7</sup>.

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<sup>5</sup> Varij Sharma, India: Decoding Extended Producer Responsibility, <https://www.mondaq.com/india/waste-management/1055270/decoding-extended-producer-responsibility-epr> (last accessed on 11th August, 2021).

<sup>6</sup> Chandra Bhushan, Over regulation will not solve plastic waste problems, we need to transform the market and municipal services, <https://timesofindia.indiatimes.com/blogs/toi-edit-page/over-regulation-will-not-solve-plastic-waste-problems-we-need-to-transform-the-market-and-municipal-services/> (last accessed on 11<sup>th</sup> August, 2021).

<sup>7</sup> Robert Reagen, A comparison of E Waste Extended Producer Responsibility Laws in the European Union and China, Vermont Journal of Environment Law, [https://enalsar.informaticsglobal.com:2125/stable/pdf/vermjenvilaw.16.4.662.pdf?ab\\_segments=0%2F5YC-6061%2Ftest&refreqid=fastly-default%3A4ec86cc1357173d0f66f0f82e6a21935](https://enalsar.informaticsglobal.com:2125/stable/pdf/vermjenvilaw.16.4.662.pdf?ab_segments=0%2F5YC-6061%2Ftest&refreqid=fastly-default%3A4ec86cc1357173d0f66f0f82e6a21935) (last accessed on 22<sup>nd</sup> Sept, 2021).

The draft Plastic Waste Management Rules, 2021, issued by the Union Ministry of Environment, Forests and Climate Change (MoEFCC) has necessitated a few radical changes in the country's handling of its plastic waste. One, the amendment has extended the applicability of the rules to brand-owner, plastic waste processor, including the recycler, co-processor, etc. It will also include new definitions of non-woven plastic bag, plastic waste processing, single-use plastic (SUP) item, thermoset plastic, thermoplastic. The Union ministry has proposed increasing the thickness of carry bags made of virgin plastic to 120 microns from 50 microns. Most importantly, the draft also proposes a ban on the manufacture, import, stocking, distribution, sale and use of specific single-use plastic from **January 1, 2022**. These include plastic sticks for balloons, plastic flags, candy sticks, ice-cream sticks, and thermocol (extended polystyrene) for decoration<sup>8</sup>. The fact that the great majority of used plastics goes to incineration, landfills or dumps means that these materials are lost forever as a resource, despite plastics' potential for reuse and recycling as plastics production requires substantial capital investment and a substantial carbon footprint to be a resource. Reusing plastics not only reduces these investment needs, but can also contribute to reducing total industrial carbon emissions which is why in totality a ban on plastics can exponentially increase the scope of recycling industry.

The (MoEFCC) issued a guideline document which is a framework for the implementation of Extended Producer Responsibility (EPR) under the 2016 Plastic Waste Management (PWM) rules, which assigns responsibility to manufacturers for managing post-consumer plastics waste. The 2016 rules were intended to enable a decentralized processing option by enforcing segregation at source system. Such steps will help in reducing dependency on such landfills and

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<sup>8</sup>Siddharth Ghanshyam Singh, Draft Plastic Waste Management Rules, 2021: Addressing the Bigger Problem, Down to Earth, <https://www.downtoearth.org.in/blog/waste/draft-plastic-waste-management-rules-2021-addressing-the-bigger-problem-75939> (last accessed on 12th August, 2021).

lands. The new draft rules offer three options to producers: pay a fee into a central fund that would be spent towards managing the waste; buy credits from a system that would be established to offset the plastics waste generated; or participate in and pay for establishing producer responsibility organisations (PROs) to collect and manage post-consumer plastics waste<sup>9</sup>. The stakeholders involved in the waste management process include producers, civic bodies, municipalities, collectors, recyclers which stand to partake in the development of Circular Economy. The entire plastics industry in India is estimated to comprise more than 40,000 producers, of which 85-90 per cent are small and medium-sized enterprises. Overall, the industry employs about four million people and round 43 per cent of the plastics manufactured is used in packaging which is mostly single-use. The unsafe disposal of waste generates dangerous gases and leachates, due to microbial decomposition, climate conditions, refuse characteristics and land-filling operations<sup>10</sup>. Hence, better waste management systems with focus on segregation incentive models can help achieve long-term impacts. If cities segregate waste into three fractions wet, dry and domestic hazardous waste and if municipalities create infrastructure such as material recovery facilities or sorting stations, dry waste can be sorted into different fractions.

On the judicial front, the Bombay High Court, while giving an interim ruling on a bunch of petitions opposing the ban on plastics in the state in pursuance of a government notification, maintained that it cannot overlook the adverse impact of plastic waste on the environment. The government had issued a notification this year, imposing a clear ban on manufacture, use, sale,

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<sup>9</sup> EPR Regulations Confuse in India, Plastics in Packaging, <https://plasticsinpackaging.com/epr-regulations-confuse-in-india/> (last accessed on 14<sup>th</sup> August, 2021).

<sup>10</sup> Satpal Singh, Solid Waste Management in Urban India: Imperatives for Improvement, Observer Research Foundation, <https://www.orfonline.org/research/solid-waste-management-in-urban-india-imperatives-for-improvement-77129/> (last accessed on 13<sup>th</sup> August, 2021).

distribution and storage of all plastic materials like one-time use bags, spoons, plates, PET and PETE bottles and also thermocol items. The notification gave a period of three months to the manufacturers, distributors and retailers to dispose of the existing stock of the banned items. Consumers and users were on the other hand given only a period of one month to dispose of the same. The notification was challenged in the High Court by plastic, PET bottle and thermocol manufacturers and retailer associations on the ground that the ban was arbitrary, bad in law and violates their fundamental right to livelihood which is enshrined in the Constitution of India. Petitions challenging the notification had sought an interim stay on the implementation of the ban pending hearing of their pleas. A division bench refused to stay the notification after observing heavily that the court cannot ignore the adverse effects of plastic waste on the environment. It remarked that the Court is aware that the petitioners and all those persons involved in the business of plastic materials may suffer loss due to the ban. However, the impact of plastic waste on the environment and the eco-system in general and the effect thereof on citizens has to be considered. The harmful effects of plastic waste are multifold, the court said while adding that it does not feel that the imposition of such restrictions infringes upon the fundamental rights of the petitioners<sup>11</sup>. Similarly, in the case of Him Jagriti Uttaranchal Welfare Society v. Union of India<sup>12</sup>, the Supreme Court of India noted that the unrestricted and large-scale use of plastic for the purpose of packaging, which includes polyethylene terephthalate ("PET") bottles and multi-layer packs such as Tetra packaging has serious health consequences. The presence of heavy metals like antimony, lead, chromium, cadmium and plasticizers like di

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<sup>11</sup> <https://www.firstpost.com/india/bombay-high-court-declines-to-stay-plastic-ban-in-maharashtra-holds-prosecution-of-citizens-with-plastic-material-for-three-months-4430507.html> (last accessed on 17th August, 2021).

<sup>12</sup>Srishti Ojha, "It is a serious matter": Supreme Court Issues Notice in Appeal against NGT's Order relating to unregulated Use of Plastics for Packaging <https://enalsar.informaticsglobal.com:2278/top-stories/supreme-court-ngts-order-in-plea-relating-to-unregulated-use-of-plastics-for-packaging-177223> (last accessed on 18th August, 2021).

(2-ethylhexyl) phthalates ("DEHP") in plastic beyond the prescribed limit, which is detrimental to human health as the chemicals leach into the edible contents and cause damage to the endocrine and neurological system. It recognized the need for restricted use of plastic in packaging of carbonated soft drinks and liquor immediately and the gradual phasing out of plastic packaging in all other non-essential items. Hence the judicial precedents also in a way contributed to the making of public policy pertaining to ban on plastics with respect to gradually establishing Circular Economy.

### **SCRAPPING THE SCRAPPAGE POLICY**

The Prime Minister of India launched the Voluntary Vehicle Fleet Modernisation Programme or the automobile scrappage policy. He said the vehicle scrappage policy will bring in investments of around Rs 10,000 crore as the current method of scrapping of materials is not productive for this scrappage policy will likely lead to a cut in raw material costs by around 40%. The minister also said that the policy will help India become an industrial hub of automobile manufacturing. The testing centers will be setup in all districts across the country using the public private partnership (PPP) model which according to an estimate, with increased sale of automobiles due to the launch of the vehicle scrappage policy, the government will get a profit of Rs 30,000- 40,000 crore in GST. Around 99 percent of recovery (metal waste) can be done with regular scrapping bringing down cost of raw material by approx 40 percent. It will make components less expensive and increase our competitiveness in international market. The policy is aimed at incentivising owners of old and polluting vehicles to take them off the road. Commercial vehicles that are over 15 years old and personal vehicles that are more than 20 years old will be eligible for scrapping. The policy will be first implemented for government-owned

vehicles, and then for heavy commercial and personal vehicles, said an official statement from the Transport and Highways Ministry.

The government proposes to scrap vehicles, which are 15 years and over, owned by the Central and state governments by April 2022. From 2023 onwards, heavy commercial vehicles need to be scrapped if they do not conform to the fitness level prescribed under the rules<sup>13</sup>. The environment ministry unveiled a set of draft rules that propose to ban several categories of single-use plastic items. The proposed prohibition on their manufacture, use, sale, import and handling is in keeping and in tandem with Prime Minister Narendra Modi's announcement in 2019 on phasing out single-use plastic by 2022. The draft Plastic Waste Management (Amendment) Rules, 2021 is proposed to be implemented in three stages starting this year and culminating in mid-2022. The rules propose that each sheet of non-woven plastic carry bag shall not be less than 60 (GSM per square metre) or 240 microns in thickness. A carry bag made of virgin or recycled plastic shall not be less than 120 microns.

The second stage will come into effect from January 1 next year when six categories of single-use plastic earbuds with plastic sticks, plastic sticks for balloons, plastic flags, candy sticks, ice-cream sticks, polystyrene (thermocool) for decoration will be banned for sale, use, manufacture, stocking, import and distribution. In the third stage from July 1, 2022 the list of banned items will grow. It will include single-use plastic plates, cups, glasses, cutlery such as forks, spoons, knives, straw, trays, wrapping/packing films around sweet boxes; invitation cards; cigarette packets, plastic/PVC banners less than 100 micron and stirrers. Single-use plastics have

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<sup>13</sup> PM Narendra Modi Launches vehicle scrappage policy, Money Control News, <https://www.moneycontrol.com/news/business/pm-modi-launches-vehicle-scrappage-policy-7330711.html> (last accessed on 23rd August, 2021).

been defined under the rules as a plastic commodity intended to be used once for the same purpose before being disposed of or recycled.

### **THE WAY FORWARD**

Controlling greenhouse gas emission through composting of waste beyond everyday recycling options is a zero-waste situation which encompasses absolute reuse and recycling of waste. This calls for a radical zero waste resource efficiency and strategies for elimination, by composting, rather than managing waste, creates a conscious effort that will result in slowing down of climate change. It is a system approach to resource management that maximizes recycling, minimizes waste, reduces consumption and ensures that products are made to be reused, repaired or recycled back into earth's environment without incurring consequences. It will mitigate climate change by minimizing the amount of greenhouse gases released into the atmosphere by human beings. The main aim of circular economy is to eliminate waste and maintaining a balanced value chain by off-setting plastic emissions in a cost benefit analysis mode. There are deep environmental implications involved and there is a deep seated need for renewable energies absolutely to cut down on use of plastic production and usage in order to mitigate impact of Climate Change.

The FMCGs companies have a key role to play in laying the contours of the circular economy. Several companies make the following commitments as a part of its business strategy or as a signatory to the Global Commitment or other initiatives to be achieved by 2025<sup>14</sup>:

- eliminate problematic or unnecessary plastic packaging;

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<sup>14</sup> Engaging on Plastic Packaging: Fast- moving consumer goods, <https://www.unpri.org/plastics/engaging-on-plastic-packaging-fast-moving-consumer-goods/7919.article> (last accessed on 25th August, 2021).

- move from single-use plastics towards reuse models where relevant;
- 100% of plastic packaging to be reusable, recyclable, or compostable;
- set an ambitious 2025 post-consumer recycled content target across all plastic packaging used

Many FMCG companies are going the Circular Economy way by adopting gradual steps of recycling management by use of natural resources and monetizing on the generation of waste. By declaring the “Plastic Pledge”, which aims to compose 100% of the company’s packaging refillable, reusable or recyclable by 2025, it endeavors to achieve a 30% recycled material content in our plastic packaging by 2025<sup>15</sup>.

### **INVESTMENT AND INCENTIVE STRUCTURE**

The Government of India has been instrumental in formulating policies and promoting projects to drive the country towards a circular economy in the form of various rules, such as the Plastic Waste Management Rules, e-Waste Management Rules, Construction and Demolition Waste Management Rules and Metals Recycling Policy. The role of government machinery in India shall be somewhat similar to that of the model adopted in Brazil which thrives on such enterprises which are government run such as a composting plant, which processes selected organic waste collected from markets for the schools’ vegetable gardens, parks, and squares of the city, a recycling facility for construction waste, which yields synthetic gravel used for roadway paving, a “seedling station,” which grows plants used to support the environmental

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<sup>15</sup> For Fully Circular Resources, Beiersdorf, <https://www.beiersdorf.com/sustainability/environment/fully-circular-resources> (last accessed on 2nd Sept, 2021).

restoration of the landfill site, a hazardous medical waste plant, a plant that recovers tire rubber for offsite recycling and environmental centres<sup>16</sup>.

The consequences of the ban on plastics and circular economy in India can be exemplified by a study produced by Tata Energy Research Institute (TERI) which says that out of the total polymer consumption of 16.8 million tonnes per annum in 2018-19, 90% was for plastic and the remaining 10% was for non-plastic consumption. From the total plastic waste generated, about 60% is actually recycled, 8.5% reutilized for energy recovery and repurposing, and about 31.5% is mismanaged plastic waste<sup>17</sup>.

### **ECOSYSTEM AROUND PLASTIC BAN**

The ecosystem around plastic ban can be characterized by the role of social impact-oriented sustainable waste management companies. The ecosystem is driven by three core principles such as minimize waste generation at the source, divert wastes from landfills and dignify people working in the waste management sector<sup>18</sup>

Both EU and India signed the "European Green Deal" which sets out a joint commitment to tackle climate and environment-related challenges encapsulated in the construct of circular economy with the objective to ensure that there will be no net emissions of greenhouse gases in 2050 and that economic growth is decoupled from resource use. A new Circular Economy

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<sup>16</sup> Hillary Brown, Towards a Circular Energy Economy: Cross Sector Successes in Brazil and India, Columbia University, [https://enalsar.informaticsglobal.com:2125/stable/pdf/26760101.pdf?ab\\_segments=0%2F5YC-6061%2Ftest&refreqid=fastly-default%3A927cd75f245966d4d955b8253da6f2b1](https://enalsar.informaticsglobal.com:2125/stable/pdf/26760101.pdf?ab_segments=0%2F5YC-6061%2Ftest&refreqid=fastly-default%3A927cd75f245966d4d955b8253da6f2b1) (last accessed on 17<sup>th</sup> Sept, 2021).

<sup>17</sup> Shantanu Guha Ray, Trash Turns into treasure in new plastic economy, <https://www.sundayguardianlive.com/news/trash-turns-treasure-new-plastic-economy> (last accessed on 15<sup>th</sup> Sept 2021).

<sup>18</sup>Green Worms Organization <http://greenworms.org/aboutus.php> (last accessed on 18<sup>th</sup> Sept, 2021).

Action Plan stimulating the design of sustainable products, services and business models so that waste is minimized, and focusing on resource-intensive sectors such as textiles, construction, electronics and plastics, which is a great resource for generating profits in circular economy<sup>19</sup>.

The 2021 draft rules have been proposed to prohibit manufacture, import, stocking, distribution and sale of certain single-use plastics from January 1, 2022. In an elaborate government laid out machinery, the three-stage ban, the first category of SUP items proposed to be phased out are plastic sticks used in balloons, flags, candy, ice-cream and ear buds, and thermocol that are used in decorations. The second category proposed to be banned from July 1, 2022, includes items such as plates, cups, glasses and cutlery such as forks, spoons, knives, straws, trays; wrapping and packing films used in sweet boxes; invitation cards; cigarette packets; stirrers and plastic banners that are less than 100 microns in thickness. A third category of prohibition is for non-woven bags below 240 microns in thickness which is proposed to start from September 30, 2022.

The draft has defined non-woven plastic bags widely used as shopping bags and brought brand owners (selling SUP under a registered brand name) as well as plastic waste processors under its ambit. It has also defined thermo-set plastics which are irreversibly rigid and cannot be remoulded and thermoplastics, which soften on heating. The challenge of identifying the items to be banned were overcome as India defined SUP as disposable plastics as use-and-throw items that are commonly used for packaging and include items intended to be used only once being thrown away or recycled, such as carry bags, food packaging, bottles, straws, containers, cups and cutlery. The SUP items which were categorized to be phased out were identified by an

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<sup>19</sup>Ministry of External Affairs, Government of India, EU- India Joint Declaration on Resource Efficiency and Circular Economy, [https://www.mea.gov.in/bilateral-documents.htm?dtl/32829/EUIndia\\_Joint\\_Declaration\\_on\\_Resource\\_Efficiency\\_and\\_Circular\\_Economy](https://www.mea.gov.in/bilateral-documents.htm?dtl/32829/EUIndia_Joint_Declaration_on_Resource_Efficiency_and_Circular_Economy) (last accessed on 16th sept, 2021).

expert committee, constituted by the Department of Chemicals and Petrochemicals, Government of India which was formed exclusively after its decision to eliminate SUP by 2022. The expert committee took in massive stakeholder analysis from industry bodies, experts, research institutions to map the landscape of this public policy decision. The report noted in 2019 that annual plastics consumption in India would cross 20 million metric tonnes by 2020, identifying items for prohibition based on an index of the utility of an SUP and its adverse impact on the environment.

The Government took in five major factors such as utility, hygiene, product safety, social impact, economic impact and environmental impact encompassing collectability, recyclability, possibility of end-of-life solutions of alternate materials and littering propensity to segregate the SUP items. Using this multitude of factors to gauge their utility and environmental impacts, the items were recommended for prohibition. Thin carry bags, non-woven carry bags and covers; small wrapping and packing films; straws, stirrers; foamed cutlery items; non-foamed cutlery items; plastic sticks; small drinking bottles and plastic banners with thickness below 100 microns, and expanded polystyrene used in decorations were the items that were low on utility factors and high in their impact on the environment. The scale of plastic waste and its environmental impact were two of the major issues that the government and the committee addressed. To increase the thickness of carry bags which were made out of virgin plastic to 120 microns is a financially viable and carries scope for recyclability for a low-plastics economy. However, experts maintain that the proposed ban must strike a balance between the pernicious use of single-use plastics and the livelihoods of waste pickers.

Over 1.5 million waste pickers initiate the plastic recycling chain in India by pulling out discarded items from mixed waste, sorting them and selling them to waste dealers who, in turn, clean and sort them again and sell them ahead to specialized dealers. About 41% of the waste picker incomes come from plastics and any reduction in the waste would mean a corresponding reduction in the earnings of waste pickers. The rules on **Plastic Waste Management** also specified the responsibilities of the 'producers, importers and brand owners' in managing plastic waste under the extended producer's responsibility (EPR) provision. Under EPR, a producer is tasked with collection of plastic waste either individually or in collaboration with urban local bodies and its sound end management, which comprises creating a channel for collection of plastics, their storage, recycling, reuse and disposal. The National Green Tribunal, Central Pollution Control Board (CPCB) and the Environment Ministry are vested with the responsibility for the extended producer responsibility regime as well as regulating state governments, union territories and urban local bodies. The government also regulates the fee-based model wherein producers would pay into a central corpus for managing waste; a credits system that would allow producers to buy credits to offset the waste they generate; and a producer responsibility organization model in which producers would hire a contractor service to help them comply with the rules.

As, Plastics can take up to thousands of years to decompose and can contaminate soil and water, posing significant risks to both humans and wildlife, according to the UNEP report hence Plastic bags in the ocean resemble jellyfish and are often ingested by turtles and dolphins who mistake them for food. There was large scale resentment from the All India Plastic Manufacturers' Association (AIPMA), one of the largest trade bodies representing the plastics industry in India which requested the government to push the deadline for phasing out SUP products by 2023

owing to economic distress faced by manufacturing units due to the Covid-19 pandemic. The industry body pointed out that the government does not look at the broader issues such as the need for a uniform policy across, a life-cycle analysis of the products that are proposed to be banned and the pressing need to include larger companies from public and private sector that manufacture raw materials.

The rules critics point out should also cover large private and public manufacturers of raw materials from the petrochemical sector as the bigger companies from the petrochemical sector are manufacturers of raw materials such as polymer and including them would cover the entire range of products as manufacturers incur major expenses. Besides manufacturers, the government's proposed ban on SUP will also affect e-commerce giants such as Amazon India and Flipkart which not only sell plastic items but also use them in packaging<sup>20</sup>.

### **ORGANIZATIONAL DESIGN**

There is no particular organizational design that has been adopted to formally establish a circular economy as it is a systematic form of economic thinking. For example, the Government of India has been taking gradual policy initiatives on the lines of shifting the paradigm to clean and renewable energy sources. In pursuance of the same, the Indian South Railway Zone incorporated the renewable energy generation capacity which was instrumental in saving energy of 570 million units of traction category<sup>21</sup>.

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<sup>20</sup> Business Standard, India's Ban on Single Use Plastics runs into challenges, pitches new rules, [https://www.business-standard.com/article/current-affairs/what-india-must-do-to-implement-ban-on-single-use-plastics-effectively-121061700235\\_1.html](https://www.business-standard.com/article/current-affairs/what-india-must-do-to-implement-ban-on-single-use-plastics-effectively-121061700235_1.html) (last accessed on 23rd, September, 2021).

<sup>21</sup> Here's How Southern Railway is Moving Towards the Goal of Net Zero Carbon Emissions by 2030, <https://www.news18.com/news/india/heres-how-southern-railway-is-moving-towards-the-goal-of-net-zero-carbon-emissions-by-2030-4283258.html> (last visited on 14th October, 2021).

The gap that needs to be managed, the tools needed to overlook that gap is organizational design which assesses the level of absorption tools to manage circular economy. As the nature of circular economy is network based and amount of engagement that is necessary is deeply crucial, there is a direct relationship between furthering circular economy and decarbonizing the heavy industry. It is envisaged that the world must reach net-zero emissions by 2050 to avoid the worst effects of climate change and achieve a clamp down on industrial emissions. Decarbonizing the raw materials producing the maximum amount of emissions is one of the key roles that circular economy can play globally by altering the approaches to heavy industry<sup>22</sup>.

Research and Development are the core facets that shape up the outlook and the absorption capacity of these four players fundamental to churning the wheels of Circular Economy in India and determining whether the government can really deliver it. The governance model, vision statement, investments, how strong is civil society, how far can civil society stimulate the consumption and capacity and whether the essence of Circular economy creates hierarchy contrary to its core basis of re thinking, resign and reuse are some of the critical questions yet to be answered in Indian Public Policy scenario. However several civil society organizations in India play a huge role in progressively moving towards shaping up circular economy by engaging in reuse, reduce, recycle, repurpose, refusing the use of plastics functioning within the existing set of frameworks of Law<sup>23</sup>. Similarly the thrust of Climate Change Mitigation is intrinsically linked to elements of circular economy via policy research and measures which is

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<sup>22</sup>James Pennington & Eric Hannon, Circular Economy's role in decarbonizing Industry, Green Biz, [https://www.greenbiz.com/article/circular-economys-role-decarbonizing-heavy-industry?fbclid=IwAR2-jyreplHRCRVRTpwSXwxZvZuB4\\_g\\_SN6f8gxmgDGVU50HYEdijYy5-ac](https://www.greenbiz.com/article/circular-economys-role-decarbonizing-heavy-industry?fbclid=IwAR2-jyreplHRCRVRTpwSXwxZvZuB4_g_SN6f8gxmgDGVU50HYEdijYy5-ac) (last visited on 16<sup>th</sup> October, 2021).

<sup>23</sup>5R Cycle Foundation, <https://5rcycle.org/>

evidence based<sup>24</sup>. Circular economy being developed by Civil society organizations pushes every actor to rethink the economy model which is need of transmogrifying from a take- make- waste model into sustainability induced system which creates new products and solutions for consumers reducing the strain on environment and natural resources<sup>25</sup>.

India's policy positioning on circular economy is in a nascent stage as it can be proved from its commitment towards net zero carbon emissions target, taking in funds from developed countries for activating the carbon credit markets as well as working towards mitigating climate change with sound infrastructure<sup>26</sup>.

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<sup>24</sup> Clasp Efficient Appliances for People and the Planet, <https://www.clasp.ngo/tools/>

<sup>25</sup> Climate Collective, <https://climatecollective.net/>

<sup>26</sup> Jacob Koshy, Glasgow Climate Meet, India doesn't rule out 'net zero' commitment, the Hindu <https://www.thehindu.com/sci-tech/energy-and-environment/india-doesnt-rule-out-net-zero-commitment-at-cop/article37130603.ece>