POLICY AND STATUS OF PLASTIC WASTE MANAGEMENT IN INDIA: A PERSPECTIVE FOR SUSTAINABLE DEVELOPMENT AND PROTECTION OF ENVIRONMENT

[1]MANOJ K. SAHOO, [2]HELI N. SHAH

[1] Assistant Professor of Economics, School of Liberal Studies, Pandit Deendayal Petroleum University, Gandhinagar, Gujarat, India

[2] Economics Major Scholar, School of Liberal Studies, Pandit Deendayal Petroleum University, Gandhinagar, Gujarat, India

Abstract - Plastic waste is a global menace polluting soil, groundwater, rivers, oceans as well as threatens all forms of life including marine life. Some of the efforts at international and national levels to curb the menace of plastic waste has led only to an insufficient amount of reduction in single-use plastic waste generation and recycle. As has happened in most cases of carbon emission and environmental protection agreements at the global level, reduction of plastic is yet to see a strong, committed and coordinated effort to make earth and its environment free from plastic waste and its hazardous impacts. Off late India has started taking some steps to curb plastic waste generation and enhance its recycling by putting in place some policy measures. However, in the absence of strong policy and political will for effective reduction of plastic waste seems to be neither achievable nor feasible. The present paper critically analyses the policy framework on plastic waste management in India and examines the loopholes in implementation. Moreover, efforts have been made to draw lessons from experiences of other countries in sustainable development and management of plastic wastes. The paper also makes case for an effective mechanism, alternative strategy and policy perspective on plastic wastes for sustainable development and protection of environment.

Keywords - Plastic waste management, Sustainable development, Environmental Protection, Extended Producer responsibility, plastic recycle, Policy for plastic reduction

I. INTRODUCTION

Plastic waste is a global menace at present for the environment polluting soil, groundwater, rivers and oceans as well as threatening all forms of life including fresh water and marine life. The menace of plastic can be gauged from the fact that globally millions of tonnes of plastic waste is generated every year creating hazardous landfills, polluting top soil and getting mixed with ground water resources and entering into human and animal food chain leading to life threatening risks, endangering species and grave degradation of earth's environment.

Globally, five trillion single use plastic bags are used every year and one million plastic drinking bottles are bought every minute, as per UNEP estimates. Overall, 300 million tonnes of plastic is produced every year around the world almost equal to the weight of entire human population on earth. About half of all plastic produced is meant for single use only getting discarded afterwards. As per UNEP data only 9 percent of all plastic waste is recycled and 12 percent is incinerated, while a whopping 79 percent gets accumulated as landfills, dumps or ends up in rivers and oceans. Oceans alone get dumped with 8 million tonnes of plastics every year, threatening animal and marine life. As per the estimate of Centre for Biological Diversity, Arizona, US in North Pacific region 12 thousand to 24 thousand tonnes of plastic wastes are ingested by fishes alone. India generates 25,940 tonnes of plastic wasteper dayat present (from sixty major cities)out of which 10,376 tonnes of plastic is discarded into the landfills as per Central Pollution Control Board (CPCB) data. India's Metropolitan cities such as Delhi, Mumbai, Ahmedabad, Chennai, Kolkata and Bengaluru are the highest generators of plastic waste. Majority of plastic waste comes from mindless usage and dumping of single-use plastics, PET scraps and other forms of plastics.According to India's Central Pollution Control Board (CPCB) 2015estimate, 6.92 per cent of municipal solid waste was plastic waste alone.

II. POLICY EFFORTS TO REDUCE PLASTIC WASTES

In 2018 sustainable development impact Summit at the World Economic Forum discussed on the issue of global crisis from plastic wastes which led to creation of Global Plastic Action Partnership (GPAP). GPAP recognises on three major points action for sustainable management of plastic wastes:

1. Companies have a huge role in transforming plastic use
2. Global efforts in plastic action is increasing
3. There is need for revolutionizing the production, consumption and re-use of plastics

India took first steps towards making policy regulations to tackle plastic menace by framing Plastic Waste (Management and Handling) Rules in 2011.The policy sought to bring in aprice mechanism to disincentivise the usage of poly bags and favours plastic recycling. Comprehensive rules on plastic

management was introduced later in 2016 namely, Plastic Waste Management Rules 2016,which sought to ban plastics below 50 microns and phase out multi-layer plastic packages. It also introduced Extended Producer Responsibility (EPR) for producers, importers and brand-owners to fix responsibility on them for safe disposal and management of plastic waste materials. Moreover India introduced ban of import of plastic waste since 2015.

Despite this much progress on banning and phasing out of single-use plastic and multi layer packages were not encouraging in India.In 2018 industriesestimate put plastic consumption in India to rise during 2017 to 2022 at an annual rate of 10.4 percent. Also it was found that about half of all plastic produced in the country was single-use plastic which is the main cause of the plastic menace.

Along with increase in production of plastics, plastic waste imports for domestic industry had quadrupledin just one year, from 12,000 tonnes in 2016-17 to 48,000 tonnes in 2017-18, despite the 2015 ban on it. This happened because of a loophole in regulation under which import of plastic waste (PET bottles and flakes) was allowed through Special Economic Zones. In March 2019, the Indian government put a ban on plastic waste imports, under the Hazardous and Other Wastes (Management and Transboundary Movement) Rules of 2016, based on the Basel Convention. The Rules impose higher standards for plastic wastes disposal and put a ban on its imports. But first quarter of 2019-20 had already registered imports of 25,000 tonnes of plastic waste by the time rules were imposed. (The Hindu, 6 Mar 2019)

Import of plastic waste is significant for India as about 22000 plastic processing units depend on it.The plastic industry of India provides direct employment to 1.25 million people and indirect employment to 7-8 million. Plastic commodities production in the country is estimated to the tune of 5 million tonnes. This large industry with many units in the scale of MSMEs leads to the parallel generation of more than 25 thousand tonnes of plastic waste daily, of which 10 thousand tonnes is dumped into landfills or discarded mindlessly. This large plastic industry in India will have to play a significant role in recycle and reduction in single use and multi-layered plastics.

The National Green Tribunal (NGT) and Central Pollution Control Board (CPCB) in India are the prime agencies responsible for sustainable plastic waste management and monitoring reduction in plastic wastes. These bodies have to frame policies such that more recycling firms come into existence under plastic industry. They also have to frame sound recycling practices guidelines so as to reduce plastic wastes and sustainable waste disposal. In India recycling industries with non-conforming recycling practices pose grave threat for the ecology and environment.

Indian government fixed the deadline of 2022 for eliminating single-use plastics in the country. It was announced by the Indian Prime Minister in his Independence Day Speech on August 15, 2019 to put a ban on single-use plastics effective since 2nd Oct 2019. However, Indian government had not placed a clear frameworkeither on total ban on single-use plastic or elaborate stepsto eliminate single-use plastics by 2022. Indian government rather chose to leave the onus of banning single-use plastic on the state governments. One reason lackadaisical approach of the central government is the likely job losses resulting from the reduction in such plastic production by the SME plastic units, particularly during the ongoing slowdown phase when other industries are witnessing significant job losses like automobile, NBFC and so on. Indian government is mulling states to frame their own mechanism to discourage plastic production and encourage the private sector for voluntarily rejection of single-use plastics. Following this however, 15 states and 4 Union Territories have introduced total ban on plastic carry bags and single-use plastics.

III. PLASTIC WASTE REGULATION IN INDIA

India’s tryst with environmental regulation began with the National Environment Policy Act of 1986. Under its broader regulations India introduced the first comprehensive Solid Waste Management Rules of 2000 and its revised rules in 2016. The new rules have extended the producers' responsibility towards end use and proper disposal of solid wastes including plastics. It also seeks to promote waste-to-energy plants for effective recycle and management of wastes.

The Indian government has already prohibited the manufacture and sale of plastic below 50 microns thickness. This has increased the cost of production of polybags due to which vendors have started charging the customers for polybags thereby discouraging its commercial viability.
About 25 countries were dumping more than 12 thousand tonnes of plastic waste in the country. This largely was a result of ineffective segregation at source of plastic waste which makes collection of plastic an expensive process. Hence India prohibited the import of polyethylene terephthalate (PET) flakes of used PET bottles.

Central Pollution Control Board has imposed a compensation payment of Rs.1 crore to the states who fail to comply to take preventive and regulatory measures to curb plastic menace.CPCB has also approached the National Green Tribunal to resolve

the non-compliance issue by the states. Although many states and Union Territories have imposed ban on plastic carry bags, sufficient steps are not taken to prevent burning and littering of plastic waste. The regulatory machinery between Centre and States lack effective communication. The knowledge gap to handle plastic waste management has also resulted into failure to put effective plans by the states. This has led to not so encouraging results in the country to control plastic waste.

Further, microplastics with less than 5 mm in size,abundantly found in regular consumer products, pose a greater threat to the environment. Moreover, there has been no study conducted on the consumption of microplastics. India lacks a strict legislation on the usage and manufacture of microplastics.

However, Indian Prime Minister announced to take effective steps to make India free from single-use plastics on August 15, 2019 and in G7 Summit on August 26, 2019 at Biarritz, France. This was in addition to the March 2019 ban on scrap plastic imports. (Down to Earth) Further, India reinforced its stance to get rid of the single-use plastics at the Conference of Parties (COP) to UN Convention to Combat Desertification (UNCCD), held during September 2-13, 2019 at New Delhi.

IV. STEPS ON PLASTIC WASTES CONTROL BY OTHER COUNTRIES

Japan set up the Fundamental Law for Establishing a Sound Material-Cycle Society in the year 2000 to check rising waste generation.South Korea put up policy programmes to transform the linear economy into a circular one- i.e. programmes with regards to resource efficiency, energy recovery and recycling technology.
Countries like Austria, Denmark, Belgium, UK, Finland, Germany and Netherlands have dedicated strategies for material resource efficiency. France is to finalise its Circular Economy Roadmap by 2019. Sweden's recycling revolution is commendable at the international level, Sweden targets to achieve total recycle and zero-waste by 2020.

Germany, another recycling champion, is an example to emulate. Germany adopts a combination of effective policies and regulations to achieve high levels of recycling. The country recycles almost all plastic bottles, by formalizing plastic trash collection by the poor and deposit return at malls.

Plastic control policies around the world are divided between an intention for complete ban on certain types of plastics and imposing taxes on production and use of them.Ireland enacted a very high plastic bag tax in 2002 on consumers literally like purchasing them. Due to the high tax, within weeks it resulted into 94 percent decline in plastic bag usage.Rwanda implemented a complete ban on plastic bags and made the country plastic bag free since 2008. The ban is effective due to strict enforcement and hefty penalties including jail time for plastic smuggling.

For efficient resource management China passed the Circular Economy Promotion Law in 2009 along with the Circular Economy Development Strategy, and Immediate Plan of Action in 2013. (Down to Earth) Under these broad frameworksChina introduced the 'National Sword' Policy to ban twenty-four types of imported wastes including recycled plastics into its territory. It also declared free distribution of plastic bags by storeowners as illegal and asked them to charge the customers. This resulted into a significant 50 percent decline in plastic bags use within a couple of years.

Franceenacteda 'Plastic Ban' law in 2016, the first countrywith intention to ban all types ofdaily-use products like plastic plates, cups, and utensils by 2020. Colombia introduced ECOBOT- Reverse Vending Machines, to promote the culture of plastic recycling. Under the scheme people were incentivized andgiven rewards for each recycled item put into the ECOBOTs placed in malls and public spaces.

V. LESSONS FOR SUSTAINABLE MANAGEMENT OF PLASTIC WASTES

At present in India more thanninety percent of all wastes including electronic waste is handled by the informal sector without any safety measures or established recycling procedures. Without any proper incentives they simply try to eke out a living out of it. Hence highly polluting plastics like multilayer plastic packages are left uncollected, as they don't have recycling value.In absence of formalization of trash collection, the payment for the poor from this activity is highly pittance. Formalization and introducing monetary incentives for collection of plastic bottles and multilayer packages will enhance the process of litter collection and deposits with the vendors. This then will further the process of recycle and waste disposal in the country. Effective management of plastic waste along with alternative innovations for eco-friendly and bio degradable substitutes will have to be focused in any national and regional scheme of waste management in the economy.

The waste to energy creation programme has to be revolutionized at the national as well as local level with co-ordinated participation from public authorities, voluntary agencies, NGOs, private parties and masses.Monetary incentives will go a long way not only for proper waste disposal but also for waste

collection, segregation, recycle and tapping energy out of it.

EPR or Extended Producer Responsibility normsmandate producers to generate market incentives for the reuse or recycling of their materials. In absence of formal recycling channels in India makes it difficult for tracing of an item making it further difficult for imposing any responsibility on the producers for proper waste disposal of their materials. Further, multi-layered plastics made from combination of plastics with non-plastics render them non-recyclable potentially making them hazardous for environment. EPR for multi-layered plastics have to be formalized with effective regulations and incentives at every stage of their distribution and disposal.EPR norms aresignificantly effective in developed nations like EU, Canada, and Germany (for multi-layered packaging), Germany and Netherlands (for automobiles) and so on. India has to imbibe lessons from these countries and should put in place effective regulatory and incentivized policies for sustainable plastic waste management.

VI. SOME CONCERNS

About twenty state governments have announced ban on single-use plastics such as Maharashtra, Odisha, Telangana, Goa, Andhra Pradesh, Himachal Pradesh and Tamil Nadu.Some states like Odisha banned single-use plastics since 2018.They came up with total ban of PET, tetra bottles, single-use plastics items,single disposable cutleries, plates, glasses, straws and styrofoamcups and so on.Some partial bans were imposed by Bihar (only polythene bags) Assam (within state secretariat), Kolkata Municipal Corporation, Airports Authority of India (55 out of 134 airports single-use plastics free), Central ministries, UGC notice to universities, Rajasthan High Court premises, ITC Hotels etc.

But industry body FICCI had put forward its reservation on such blanket ban as it can cause rise in the price of FMCG products which depend on such packaging. Low price point products like shampoo, biscuits depend heavily on cheaper packaging. In absence of cheaper alternative packaging materials there may be rise in their prices. FICCI also had cautioned about the severe impact on the INR 530 billion plastic industry and likelihood of significant job losses. Because of these concerns government of India has not been able to put a complete ban on single-use plastics and preferred to leave the onus onto the respective states to decide.

VII. THE WAY FORWARD

India has to learn some lessons from the Western countries and even developing countries like Rwanda. India has to develop a right combination of policy measures and regulations along with monetary incentives for sustainable management of plastic wastes in the country. India has not only to address the concerns related to the domestic plastic industry and the issue of likelihood of job losses but also has to seriously take up the environmental concerns emerging out of the single-use plastic menace. Certain items may need effective ban without any delay along with high tax on the use of carry poly-bags discouraging their use. Alternative items are to be promoted in development and use. Moreover, monetary incentives, formalization of the entire process of garbage disposal, segregation, collection, return, reuse and recycle of the plastic wastes along with revolutionizing the waste to energy concept will only can be effective in sustainable management of this colossal menace. This finally in the long run will lead to zero waste, efficient resources management and eventually transform the linear economy into a circular one with greener environment.

REFERENCES

[1] 2018. Plastic Pollution. UN Environment Programme. Accessed on 16 October 2019.https://www.unenvironment.org/interactive/beat-plastic-pollution/

[2] Kristin Hughes.(2019, September). 3 Ways we are making an impact on plastic pollution. World Economic Forum.Accessed on 19 October 2019.https://www.weforum.org/agenda/2019/09/we-created-an-initiative-to-fight-plastic-waste-here-are-3-takeaways-from-our-first-year/

[3] 2019, July.Order of the National Green Tribunal regarding implementation of plastic waste management rules-2016.India Environmental portal.Accessed on 16 October 2019.http://www.indiaenvironmentportal.org.in/content/465197/order-of-the-national-green-tribunal-regarding-implementation-of-plastic-waste-management-rules-2016-22072019/

[4] 2019, October. Environmentalists hail governments move to prohibit the import of plastic waste. NDTV BanegaSwasth India.Accessed on 19 October 2019.https://swachhindia.ndtv.com/environmentalists-hail-governments-move-to-prohibit-the-import-of-plastic-waste-39428/

[5] 2019, September. The Top Priority Of All States Should Be To Eliminate Single Use Plastic By 2022. NDTV BanegaSwasth India.Accessed on 20 October 2019.https://swachhindia.ndtv.com/the-top-priority-of-all-states-should-be-to-eliminate-single-use-plastic-by-2022-says-environment-secretary-38291/

[6] Ajay Mathur. (2019, June). Energy Efficiency Enhancing through resource efficiency in India. Down To Earth.Accessed on 22 October 2019.https://www.downtoearth.org.in/blog/energy-efficiency/enhancing-prosperity-through-resource-efficiency-in-india-65149

[7] AmandeepArarwal. (2019, May). What are we doing to stop plastic menace? Down To Earth.Accessed on 22 October 2019.https://www.downtoearth.org.in/blog/environment/what-are-we-doing-to-stop-plastic-menace--60678

[8] Anisha Bhatia. (2017, April). 5 Countries That Have Revolutionised The Way They Tackle Waste. NDTV BanegaSwasth India. Accessed on 19 October 2019 https://swachhindia.ndtv.com/5-countries-revolutionised-way-tackle-trash-waste-5013/

[9] BanjotKaur.(2019,October). No ban on single-use plastics, to be phased out by 2022.Down to Earth.Accessed on 15 October

2019.https://www.downtoearth.org.in/news/pollution/no-ban-on-single-use-plastics-to-be-phased-out-by-2022-67064

[10] Brahma Chellani.(2019, June). Plastic Waste is Choking India Monetary Incentives to waste pickers and an environmental tax on plastics can stem the problem. Times of India. Accessed on 23 October 2019 https://timesofindia.indiatimes.com/blogs/toi-edit-page/plastic-waste-is-choking-india-monetary-incentives-to-waste-pickers-and-an-environmental-tax-on-plastics-can-stem-the-problem/

[11] Jacob Koshy. (2019, March).Environment Ministry plug loophole that allowed plastic waste import. The Hindu. .https://www.thehindu.com/sci-tech/energy-and-environment/environment-ministry-plugs-loophole-that-allowed-plastic-waste-import/article26449791.ece

[12] ManinderDabas. (2019, May). India Loses Fight Against Pollution In 1st Round None Of The 25 States Submit Roadmap On Plastic Disposal. India Times.Accessed on 20 October 2019.https://www.indiatimes.com/news/india/india-loses-fight-against-pollution-in-1st-round-none-of-25-states-submit-roadmap-on-plastic-disposal-368112.html

[13] Oceans Plastic Pollution.Center For biological Diversity.Accessed on 20 October 2019.https://www.biologicaldiversity.org/campaigns/ocean_plastics/

[14] ParulKumar.,&Lekha Sridhar. (2019, May). Basel convention's plastic ban amendment is a new stepagainst waste colonialism. Down To Earth.Accessed on 22 October 2019.https://thewire.in/environment/basel-conventions-plastic-ban-amendment-is-a-new-step-against-waste-colonialism

[15] Raj Kumar.(2019, May). Waste controlling in India- Is it really happening? Business Today.Accessed on 21 October 2019.https://www.businesstoday.in/opinion/columns/waste-controlling-india-waste-management-plastic-recycling/story/344945.html

[16] RashmiSrivastav. (2019, May). Chinese ban causes re-routing of plastic waste imports to Asia. Down To Earth.Accessed on 16 October 2019.https://www.downtoearth.org.in/news/pollution/chinese-ban-causes-re-routing-of-plastic-waste-imports-to-asia-64422

[17] SanikaSantosh.,&RashmiSrivastav. (2019, October). Plastic Waste Management: What can India learn from other countries?.Down To Earth.Accessed on 19 October 2019.https://www.downtoearth.org.in/blog/waste/plastic-waste-management-what-can-india-learn-from-other-countries-67048

[18] SaptarshiDutta. (2018, June). World Environment Day 2018: The Crisis Of Microplastics In India Needs To Be Addressed Urgently. NDTV BanegaSwasth India. Accessed on 16 October 2019 https://swachhindia.ndtv.com/world-environment-day-microplastics-in-india-20763/

[19] ShreeshanVenkatesh.,&IshanKukreti. (2018, June). An Indian consumes 11kg plastic every year and an average American 109kg. Down To Earth.Accessed on 16 October 2019.https://www.downtoearth.org.in/news/waste/an-indian-consumes-11-kg-plastic-every-year-and-an-average-american-109-kg-60745

[20] Swati Singh Sambyal. (2019, October). No plastic ban: What it means for India? Down To Earth.Accessed on 18 October 2019.https://www.downtoearth.org.in/blog/waste/no-plastic-ban-what-it-means-for-india--67068

[21] VasundharaRastogi. (2018, December).Plastic Ban in India-the business impact of State specific regulations.India Briefing.Accessed on 20 October 2019.https://www.india-briefing.com/news/plastic-ban-india-business-impact-state-specific-regulations-18145.html/

★★★