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IMPACT OF MEASURES TAKEN FOR THE REDUCTION IN PLASTIC WASTAGE IN MAHARASHTRA

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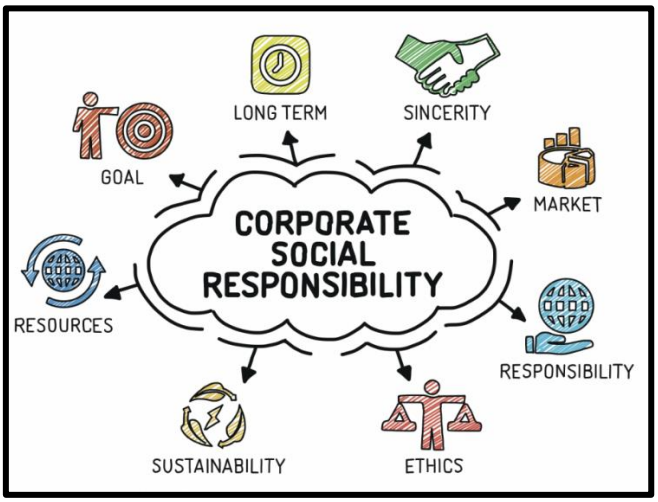
ABSTRACT

Plastic has become a huge menace due to its non-biodegradable nature and increased consumption. There are a lot of problems associated with plastic wastage and to counter the same various measures have been taken in the state of Maharashtra for the reduction in plastic.

The main aim of this study is to understand the measures taken for the reduction in plastic wastage in Maharashtra and their impact on various segments by understanding the Maharashtra plastic ban, the various implications and contribution of companies in this cause. Primary data was collected through survey questionnaire. Secondary data was gathered through journals, published research papers, websites and articles. The research revealed that on the level of an individual, awareness and consciousness about plastic has increased and usage reduced. The plastic industry in Maharashtra has suffered with losses whereas the ban will boost parallel industries providing alternatives. Businesses in food, drink, retail, and e-commerce industries are set to be the most affected by the changes in legislation regarding single-use plastics due to their heavy use in packaging. The State government aims to develop a circular economy with transformation in consumer behavior since the ultimate aim is how the industry can put people at the center of this transformation, moving from single use plastic to products that have a longer shelf life.

1. INTRODUCTION

Corporate social responsibility is additionally referred to as company sustainability, sustainable business, corporate conscience, corporate citizenship, conscious capitalism, or accountable business and it is a kind of international non-public business self-regulation. CSR was considered to be company's responsibility and done as per their voluntary interest but since a long time now, CSR has become mandatory considering the various laws, rules, regulations relating to the same on national, regional and even international level and this is mainly due to understanding the importance of CSR that it is not just about the company giving to society but it is more about company doing the right thing. CSR is not an obligation but should be the way of being for a company.



Values associated with Corporate Social Responsibility

CSR is usually considered as a personal firm policy at the organisational level and intrinsically, it should align with and be integrated into a business model to achieve success. The CSR activities of the company go beyond the minimum required level in some cases in which the companies do something that is good for the society without having any personal interest that they themselves will have on doing it. The alternatives of 'complying' with the law, failing to follow and 'going beyond' are 3 totally different strategic company choices and in several areas like regulations related to environment or labour, employers could opt to accommodates the law, or transcend the law, different organizations could opt to not follow the law and these organizations are taking legal risks.

The businesses can engage in CSR for strategic or ethical purpose and the main aim here for company's doing CSR is to increase the long term profits for the company and gain shareholder's trust and at the same time take responsibilities

for the betterment of the society that they take from and function in. a positive impact can be created by doing CSR activities by companies and with this a positive impact can be created for various stakeholders- employees, customers, government, society, investors and company's can do something for multi stakeholder interest. Some companies adopt certain CSR policies as per the interest, practices and perspectives of senior management and their ethical beliefs and various contributions can be made by the companies in terms of CSR for societal betterment.

Corporate social responsibility includes six types of corporate social initiatives which are-

- Corporate philanthropy where a company donates to charity, including cash, goods, and services, sometimes via a corporate foundation.
- Community volunteering is a company-organized volunteer activity, sometimes while an employee receives pay for pro-bono work on behalf of a non-profit organization.
- Socially-responsible business practices are ethically produced products which appeal to a customer.
- Cause promotions and activism reefers to company-funded advocacy campaigns.
- Cause-related marketing are donations to charity based on product sales.
- Corporate social marketing is when the company funds behaviour changes campaigns.

All six of the corporate initiatives are forms of corporate citizenship but only some of these CSR activities rise to the level of cause marketing, defined as "a type of corporate social responsibility in which a company's promotional campaign has the purpose of not only increasing profitability but also bettering the society."

Companies generally do not have a profit motive when participating in corporate philanthropy and community volunteering but the other corporate social initiatives can be examples of cause marketing, in which there is both a societal interest and profit motive for the companies involved with them.

CSR has gained more importance for the companies since it benefits them considering the consumers appeal and an increasing interest in socially responsible behaviour for companies conducting business activities.

2. OBJECTIVE OF STUDY

- To evaluate the effectiveness of the Maharashtra Plastic Ban 2018 in reducing plastic usage and its subsequent impact on environmental sustainability.
- To assess the economic impact of the plastic ban on various industries, particularly the plastic manufacturing sector and small-scale businesses.
- To measure the awareness and behavioral changes among consumers regarding the adoption of eco-friendly alternatives and adherence to the plastic ban.
- To study the challenges in the implementation of the plastic ban and identify gaps in policy enforcement, infrastructure, and public cooperation.
- To propose strategies for sustainable plastic waste management by integrating government regulations, corporate contributions, and public participation to achieve a circular economy.

3. METHODOLOGY

Research Methodology

The research has been undertaken to understand the impact of measures taken for the reduction in plastic wastage in Maharashtra. The research would be an exploratory research. A combination of both Primary and Secondary data will be collected for conducting the study. The gathered data would then be analysed using Microsoft Excel.

Sample Design

For conducting the study, 50 ordinary citizens of Maharashtra have been selected using a convenience sampling research technique. Responses of selected consumers were collected using the questionnaire designed.

- Primary Data:

  Primary data is collected from ordinary consumers with the help of a well-structured questionnaire. 50 responses were targeted and 54 responses were received.

- Secondary Data:

  Secondary data has been gathered from various journals, published research papers, websites, newspaper articles and other published material available online and offline.

Questionnaire Design

The questionnaire incorporates 8 questions in all to be measured through nominal scale.

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4. MEASURES TAKEN IN MAHARASHTRA

The use of plastic in packaging as both rigid and flexible forms has been increasing and a matter of concern is that the packaging is not effectively collected and ends up in landfills and drains in the cities. India's biggest concern is that single-use plastic is on the rise and it is almost impossible to recycle because not only is it below fifty microns of thickness but also takes over 400 years to break down. A report was released on the plastics business by industry body FICCI which highlighted how Maharashtra alone employs more than 400,000 people in the plastic sector and produced goods worth Rs 5,000 crore. More than 50 per cent of the plastic is used in the form of carry bags, straws, coffee stirrers, aerated drinks, water bottles and most food packaging are in this category. Maharashtra's Environment Minister Ramdas Kadam stated that Maharashtra generates over 1200 tonnes of plastic wastage on a daily basis. Therefore, the state of plastic pollution is high in India's second most populous state.

Mumbai's Juhu beach is strewn with trash at low tide during monsoon season. Floodwaters flush garbage out of the city and into the Arabian Sea. As tides ebb, beaches are blanketed in trash- mainly plastic. Source: Lauren Frayer

In exercise of the powers conferred by Clause (1) and (2) of Section 4 of the Maharashtra Non-Biodegradable Garbage (Control) Act, 2006, the Government of Maharashtra has notified the Maharashtra Plastic and Thermocol Products (Manufacture, Usage, Sale, Transport, Handling and Storage) Notification dated 23rd March 2018 and after that, amended on 11th April 2018 and 30th June 2018 and announced a ban on single-use plastic in March, 2018 at all levels, beginning with manufacture, sale, retail use and even storage.

The Government of Maharashtra had issued the Plastic Ban Notification on 23.03.2018 therefore providing a one-month period for compliance and safe disposal of the banned plastic products by all concerned including manufacturers, producers, traders, sellers and retailers, users and local bodies.

Maharashtra is the 18th state in India to have imposed a ban on plastic. It is one of the earlier states to have contemplated regulation of plastic use and had enacted the Maharashtra Non-Biodegradable Garbage (Control) Act, 2006 earlier. The Plastic Ban Notification is an extension of the earlier statute of 2006 as power to issue the notification has been derived from it. Maharashtra government's first move to ban single-use plastic bags was after the Mumbai floods of July 26, 2005. It had been observed by Officials of the Municipal Corporation of Greater Mumbai that major drains and marine outfalls across the city were chocked with plastic wastes which made it impossible for the storm water to quickly drain out.

Such a prohibition on plastic usage in the State of Karnataka has also been upheld by the Southern Zonal Bench of the National Green Tribunal in 2018.

Plastic items banned in Maharashtra

- PET/PETE bottles with a capacity of less than 200 ml
- Plastic mineral water pouches
- Plastic bags with and without handle- plastic bags or non-woven bags
- One-time usage/disposable plastic products made up of thermocol (Polystyrene) like spoons, forks, cups, plates, glasses, bowls, and container are prohibited for use by users, shopkeepers and manufacturers
- Disposable dishes and bowls used for packaging foods in hotels and straw
- Any compostable plastic bags except for plant nurseries, horticulture, agriculture and handling of solid wastage
- Use of plastic and thermocol for decoration purpose

Plastic items allowed in Maharashtra

- PET/PETE bottles having a liquid holding capacity 200 ml and more than 200 ml-printed with deposit and refund price or buy-back price under ERP
- Use of plastic for packaging of medicines, medical equipment and medical products
- Compostable plastic bags or material used in agriculture, plant nurseries, horticulture and handling of solid waste
- Manufacture of plastic and plastic bags used for export purpose in SEZs and Export Oriented Units
- Plastic material made-up of minimum 20 percent recyclable plastic material with a thickness of more than fifty microns used for wrapping the material at the manufacturing stage (Should be printed with the manufacturer's details, type of plastic with code number as well as the buy-back price under ERP)
- Plastic packaging material more than 50 microns thickness with a minimum of 2 grams weight used to seal groceries and gram products for wholesale and retail. Should be printed with the manufacturer's details, type of plastic with code number and buy-back price under ERP.
- Paper based carton packaging using one or more layers of plastic
- Recyclable multi layered plastic
- Plastic items used for domestic purpose
- Food grade virgin plastic bags not less than 50-micron thickness used for packaging of milk and printed with a buy back price
- Recyclable plastic stationery products used for office and educational purpose

As per the powers provided under section 12 of the Maharashtra Non-Biodegradable Garbage (Control) Act, 2006 fines may be imposed on the violators after that. Those found violating the ban would be penalised Rs. 5,000 for the first-time offense and Rs. 10,000 for violation the second time. Beyond the second chance, the repeat offenders would have to pay a penalty of as much as Rs. 25,000 and may also face imprisonment for up to a period of three months. The BMC Inspectors with authorization can penalize the defaulters. Even the clean-up marshals do not have this authority.

The plastic ban notification also introduced a buyback scheme for milk polypacks – consumers will have to pay a minimum of 50 paisa per plastic bag (has to be more than 50 microns thick,

should be recyclable, and the price for buyback should be clearly printed), which will be refunded after they return the used pouch to the retailer for recycling. And for bottles of packaged drinking water, consumers will have to pay a buyback price of Rs. 1 and Rs. 2 for a 1 litre and 500 ml bottles respectively. Also, all of the PET bottle manufacturers, producers, sellers and traders under the 'extended producers and seller responsibility' will have to develop a 'buyback depository mechanism' with a predefined buyback price printed specifically on each bottle.

Pricing of carry bags

The PWR (Plastic Waste Management Rules) 2018 amendment has done away with Rule 15 of its predecessor aimed at the pricing of plastic carry bags. It is envisioned that charging users for carry bags would be a key step towards initiating a behavioural change even though it will be gradual. Findings of a study conducted by the Delhi School of Economics on 'Consumer Responses to Incentives to Reduce Plastic Bag Use' states that in developing countries, a blanket ban may not be the best possible solution and 82% of the consumers would switch from plastic bag use to own bags if the former were priced explicitly. Further, TERI's article on 'Fighting Plastics: Is Ban the Way Forward?' suggests that the success behind implementation of a fee on plastic bags has been established as an effective strategy in cities around the world.

Multi layered plastics (MLPs)

According to the CPCB, an MLP means any material used for packaging that has at least one layer of plastic as its main ingredient in combination with one or more layers of paper and aluminium foil in the form of either a laminate or a co-extruded structure. A large number of companies prefer MLPs because they are three times more waterproof, light-weight, reduce shipping volume, and help in increasing the shelf life of products like fruit juices and sweets by keeping them fresh for extended periods even at room temperature. However, recycling of this packaging remains expensive and a challenge owing to its multi layered properties. The amendment under the 2018 rule of the plastic law allows MLPs to be categorized under either recyclable, energy recoverable, or with some other alternate use.

Eco-friendly alternatives to plastic

State government is trying to produce environment friendly cloth bags in greater numbers to create awareness about available plastic alternatives. the Brihanmumbai Municipal Corporation (BMC) has organized a three-day exhibition (June 22 – 24) at the National Sports Club of India, Worli, where around 60 organizations are displaying eco-friendly products ranging from eco-friendly cutlery to a recycled nursery. Collaborations with various women self-help groups has been done by the Government to produce such alternatives.

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Implementation

The fine is applicable to almost everyone- a consumer, vendor or a manufacturer – most of the officials of the government departments, including municipal commissioners, shops and establishment officers, sanitary or health inspectors, district collectors, sub-divisional officers, police officials, officers of Maharashtra Pollution Control Board, Maharashtra Tourism Development Corporation, Forest Department, to name a few, have been authorized to implement the plastic ban regulations.

The state government informed the Bombay High Court on June 8th, 2018 that it has formed a special task force comprising plastic manufacturers associations, experts and government officials to ensure that the plastic ban is implemented effectively and also find other ways to put an end to plastic waste in Maharashtra.

The government has been more cautious and determined to impose the ban effectively and has taken a number of measures for successful implementation – Rs. 10 crore have been sanctioned to spread awareness about the plastic ban for conducting exhibitions, interacting with school children, setting up plastic collection centers across the state, posting actively on social media to reach a large number of people, and imposing heavy penalties for plastic ban violations and even constituting teams to check such violations.

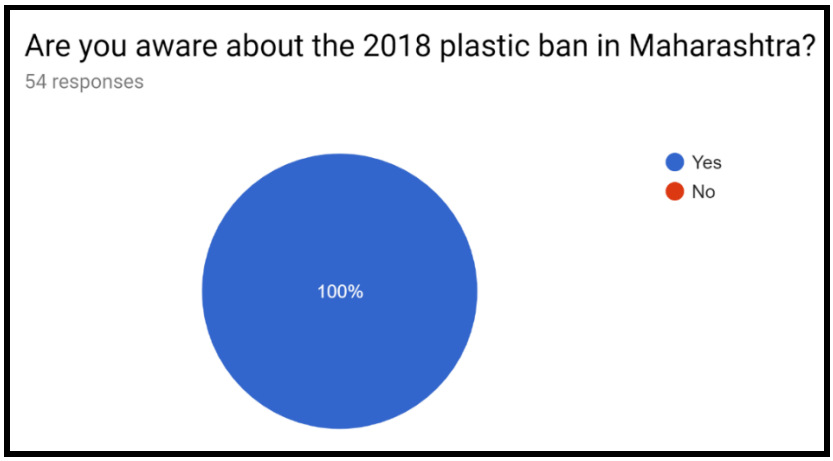
The head of programmes at Chintan Environmental Research and Action Group, Chitra Mukherjee stated that the waste picker only picks up what can be recycled. So, while PET bottles are easily recycled, most plastic (90 per cent) for example tetra packs, chips packs and single-use

ketchup pouches are not. Cities like Chennai and Delhi have seen floods because of clogged waterways. Plastic products disposed indiscriminately is mostly responsible.

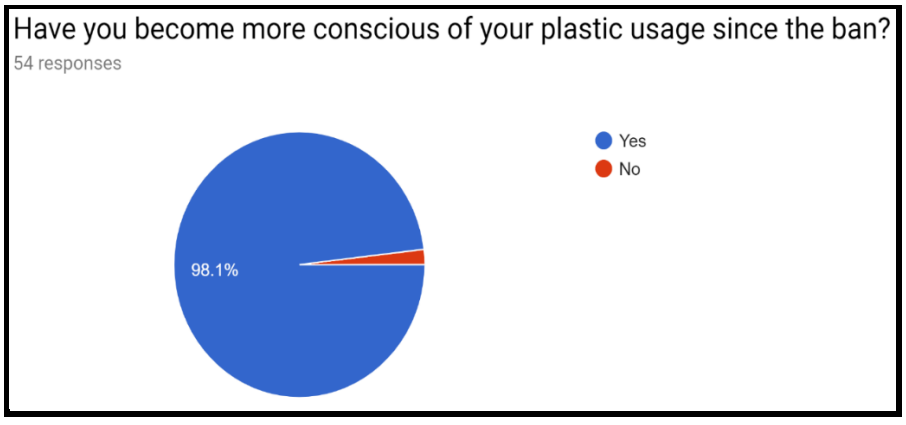
With the Maharashtra government urging people to recycle bottles and bags through a buy-back scheme and help clean plastic litter from the beaches (so as to prevent it from entering the sea), there is hope for some positive change. Since the announcement, the Brihanmumbai Municipal Corporation (BMC) claims to have collected close to 120,000 kilos of plastic from bins and homes in the city.

5. RESULTS

A survey questionnaire was conducted for studying the impact of measures taken for reduction in plastic wastage in Maharashtra, the challenges and the way forward. There was a total of 54 responses for the questionnaire.



100% of the respondents are aware about the ban of plastic usage in Maharashtra which was brought in effect in 2018.



98.1% respondents have become more conscious after the plastic ban.

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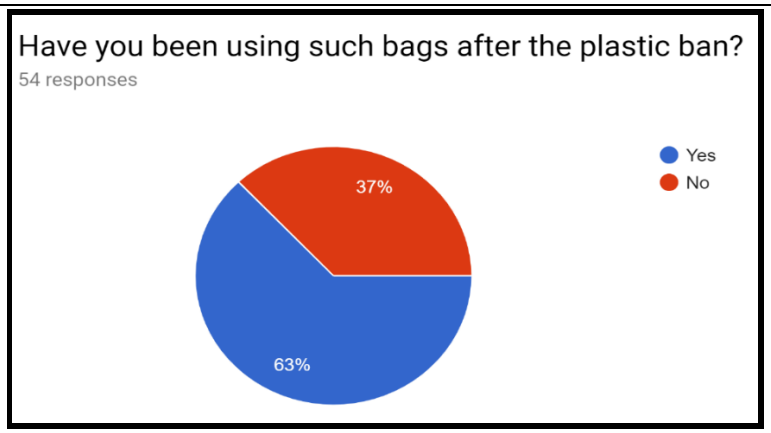
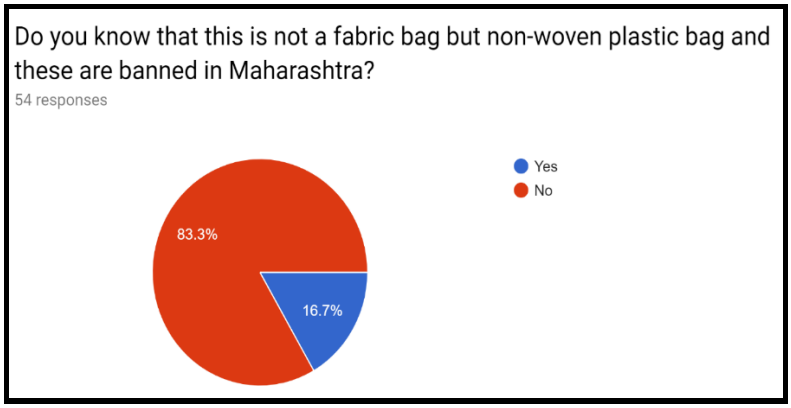
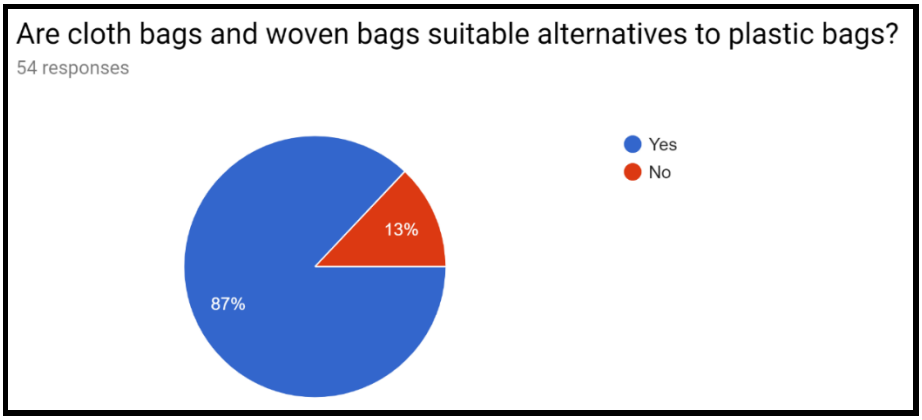


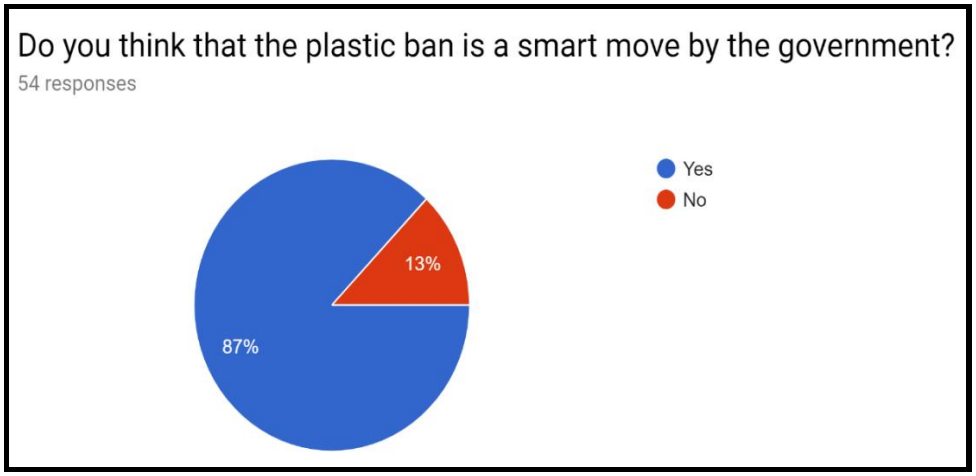
63% respondents have been using non-woven plastic bags while 37% people do not use those bags.



A majority of respondents- 83.3% do not know that non-woven plastic bags may look like fabric but are not cloth/fabric bags and only a small percentage of 16.7% know that they are banned in Maharashtra.



87% respondents consider that cloth bags and woven bags are suitable alternatives for plastic bags.



87% think that plastic ban was a smart move made by the government.

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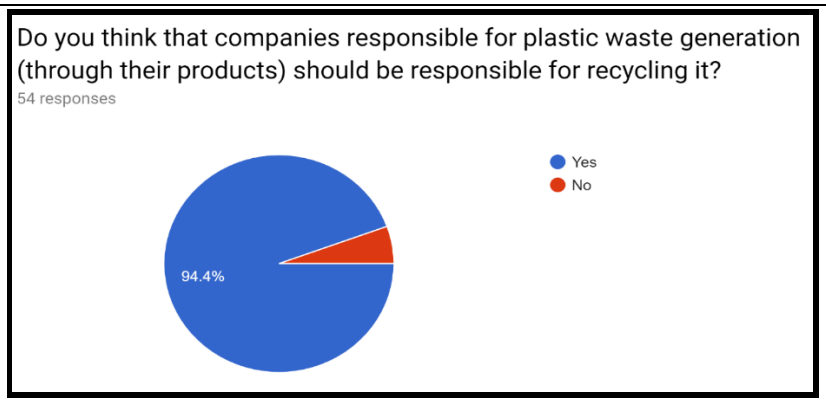
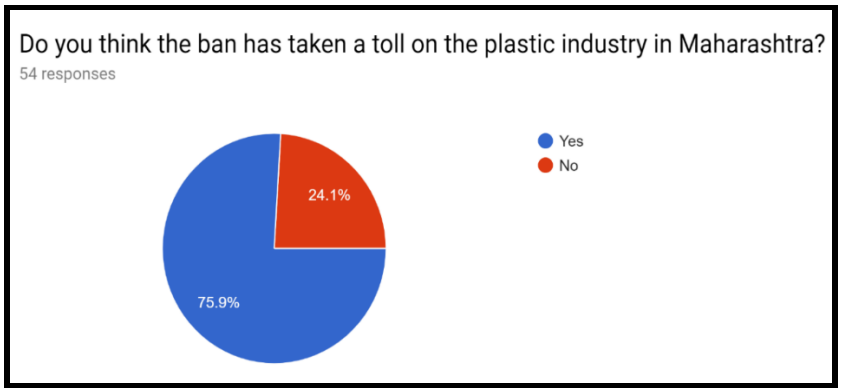


The vast majority of 94.4% considers that companies that are responsible for plastic waste generation through their products should be responsible for recycling the same.



75.9% respondents consider that plastic ban has taken a toll on the plastic industry in Maharashtra as compared to 24.1% which is approximately one fourth of the respondents who think that plastic ban has not caused a toll on the plastic industry.

THE WAY AHEAD

Reduction is key

Plastic elimination is a requirement from a policy and a business point of view but the larger issue is overconsumption. Of the three R's- Reduce, Reuse and Recycle, recycle has been promoted by companies because reducing will cause a hit at consumption. But to get long term sustainable solutions, reducing consumption will also be essential.

Technological innovations

Despite its well-documented ill-effects, the reason why plastic remains popular is its versatility. It is cheap, and it can be moulded into a variety of shapes and structures. Plastic is also chemically resistant and lightweight. While many of the alternatives fulfil some of the requirements, one has not been found that fulfils all.

Technology is now providing some alternatives. Bio-lutions, a German company that uses agricultural waste to produce packaging as well as tableware, successfully completed its pilot project in Bengaluru's Ulsoor neighbourhood and their first full-fledged plant began operations in September in Ramanagara, 40 km away from the city. The plant will use 1,500 to 2,000 tonnes of fibres annually – from plants like sugarcane, banana and tomato – along with wheat and rice straw bought locally from the farmers in Mandya, and convert it all into packaging for fruits and vegetables, electronics, trays for surgical equipment and bio-plastic foil for materials that require a waterproof surface. Eduardo Gordill, who founded Bio-lutions in 2012, feels there is a market for companies like his in India because of the waste management problem in the country. He believes technology like the one Bio-lutions offers can help provide farmers a profitable outlet as well.

Stronger policy action

With government policies like plastic ban in India and consumers driving change, the appetite for eco-friendly products is projected to boost the global demand for sustainable packaging by the end of 2024. But there is no government policy in India on what constitutes eco-friendly, and consumers are often misled by the manufacturers because certain varieties of plastics that are marketed as biodegradable merely break down into smaller pieces when exposed to sunlight. Further, replacing plastic packaging with food-based starch will require diverting a huge amount of agricultural and forest land which could create food scarcity in the future if it is not handled properly. While recycling is an option for some items promoting reduction and reusing will not go well with manufacturing industries as it will hit profits.

Manufacturers need to take responsibility

While most bans just focus on the end-user, there is clear consensus that there has to be a top-down approach to tackle the problem, and the manufacturer/ plastic producer is the one who must step in and break the cycle. EPR is a good concept as the problem in India is how we can put together a unified policy to tackle the problem at hand. Since municipalities are many, everyone works in isolation. Responsibility has to be fixed on the manufacturer as, eventually, whoever produces plastic must recycle or dispose it.

The view that manufacturers need to take responsibility is echoed by Swati Singh Sabyal who heads environmental governance and waste management at the Centre for Science and Environment (CSE). She says, The EPR concept exists on paper, but where are the targets for reduction, where is the awareness level and how do we proceed? The Plastic Waste Law of 2016, amended earlier, is now more diluted and does not fix the responsibility on the manufacturer. So how will the problem get resolved?

Lessons from other countries

While Kenya tried enforcing a ban a few years ago, they were unsuccessful till 2017 when they give citizens a cut-off of six months to make the transition. The laws are very strict and include imprisonment terms of up to four years and hefty fines. A latest report states that the ban has been hugely successful and is a model worth emulating.

Similarly, France passed the Plastic Ban law in 2016 giving the country four years to become plastic-free by 2020. The ban also adds that replacement materials for these daily-use items need to be made using material that is compostable.

Sweden believes in recycling and reusing rather than banning plastic since they are, as a nation, ace recyclers. Since they use incinerators, most of their landfills lie empty and have become trash-free. China has also been fighting plastic since 2008 and makes users pay for plastic bag consumption but this is flawed since as long as the plastics will be manufactured, the problem will not be solved.

India is still a long way off from engineering change on the ground and while there are plans to bring all plastic waste related laws under one umbrella, given the diversity and intervention of municipalities and state governments and no lull in manufacture, we are some way off from being able to dispose our plastic or recycle it efficiently.

Even though the challenge is palpable, solutions need a structured approach. Initiatives such as Swachh Bharat Abhiyan have increased awareness, there is still a considerable void to be addressed. Awareness campaigns must be effective and highlight best practices and the importance of alternatives of plastics bags. Innovative schemes for promotion of plastic alternatives need be introduced to provide the user with cheap, durable and alternate options. While introduction of legislation is incomplete without penalties, it must be aimed by the government to improve the monitoring mechanism and begin levying fines upon defaulters. While there exists no panacea for addressing the plastic waste issue, a structured approach would definitely contribute to alleviate the effects of the menace

6. CONCLUSION

The State government aims to develop a circular economy with transformation in consumer behaviour since the ultimate aim is how the industry can put people at the centre of this transformation, moving from single use plastic to products that have a longer shelf life. Further, more steps will need to be taken:

A plastic waste management plan mapping waste quantities and generation sources needs to be formed along with the associated characteristics to ensure implementation of an effective mechanism.

To boost recycling, innovative economic models should be devised to encourage people and ensure maximum plastic waste diversion which for an example, could be where the kabadiwallah incentivizes residents to segregate newspapers and are paid by the dry waste collection centres as per pre decided prices fixed by the municipality, especially for commodities based out of virgin plastic, such as polyethylene and Styrofoam owing to their high recyclability quotient.

Bio-based and biodegradable plastics give alternatives to plastic and should be promoted in large-scale applications like superabsorbent composites used for waste water treatment, and sustained release of pesticides. There is a requirement of upscaling and commercialization of these products through a facilitation of research and industry tie-ups. Bio-based plastics is an emerging field which has scope for research and innovation and should be facilitated through government and/or industry funding.

The CIPET-CPCB report mentions households as the major generators of polyolefin waste and due to lack of source segregation and recovery, there is a need to improve the infrastructure for material recovery centers manned by the informal sector workers and an increased awareness on waste segregation.

For effective end use and optimized production, devising a plastic waste management plan and EPR models is important. A lot of steps have been taken but for the change to remain continuous effort will be needed by the society as a whole

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