International Journal of Social Science and Economic Research

ISSN: 2455-8834

Volume:08, Issue:06 "June 2023"

SUSTAINABILITY HAS LED TO MOST ECONOMIES BANNING THE USE OF PLASTIC. A CRITICAL ANALYSIS OF THIS DECISION ON THE PROFITABILITY OF SMALL, MEDIUM, AND MICRO ENTERPRISES IN INDIA

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DOI: 10.46609/IJSSER.2023.v08i06.026 URL: https://doi.org/10.46609/IJSSER.2023.v08i06.026

Received: 2 June 2023 / Accepted: 15 June 2023 / Published: 30 June 2023

ABSTRACT

The paper analyzes the cost-benefit involved in the banning of plastics. Most governments have just imposed a ban on single-use plastics which even though, not completely being followed has led to an increase in the price of consumables. Once the whole gambit of plastic products is banned, the impact on cost is likely to be even more acute. Despite this, it is important to ban the product as it is a complete disaster for man, animals, and the environment.

RESEARCH QUESTION: The research paper would attempt to analyze and understand the concept of sustainability considering the circular economy with respect to the environment. Along with this, the impact of banning the use of plastic would be researched on the balance sheet of small, medium, and micro enterprises in India. This would be studied especially after the government of India in varying degrees banned the use of plastic.

1. Introduction

Climate change and the degradation of the environment are closely connected. As the impact of climate change is felt adversely by the citizens of the country, the realization that the environment must be protected becomes an imperative issue. In recent years, the adverse impact of climate change has been felt throughout the world. These have manifested themselves in unprecedented fluctuations in temperature (unheard-of high temperatures being witnessed by many European and Asian economies, freezing temperatures in some parts of the world, and increased drought and flood occurrences). This is primarily due to the melting of glaciers and ice. All of these have resulted in the governments setting up various committees and meetings with other countries under the umbrella of the COP (conference of the parties). This is an

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ISSN: 2455-8834

Volume:08, Issue:06 "June 2023"

international platform where the United Nations gathered 197 signatories to the United Nations Framework Convention on Climate Change (UNFCC) in 1995 to discuss the problems arising out of climate change. The main source of concern is the ongoing rise in temperature caused by existing and rising carbon footprints.

Figure 1: Worldwide effort on climate change

Source: futureuae.com

Along with the concerted effort to control carbon footprints, saving the world's ecological systems is equally important. Among these, one of the most important culprits is plastic. Almost all countries have started making serious efforts to control plastic use.

Figure 2: Detrimental impact of plastic

Source: eatmy.news.

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ISSN: 2455-8834

Volume:08, Issue:06 "June 2023"

Plastic is one of the materials that, depending on the material structure and other environmental variables, decomposes in 20 to 500 years. There are four mechanisms by which plastics can be degraded in the environment:

- Photodegradation
- Thermooxidative degradation
- Hydrolytic Degradation
- Biodegradation by microorganisms

The Second World War was responsible for the huge expansion of this product. Plastic output in the United States surged by 300% over this period. It was not only a military victory for the United States but also an industrial accomplishment in terms of plastic advancement.

2. Definition

Plastic was discovered by the Belgian chemist Leo Baekeland. He pioneered the first fully synthetic plastic in 1907. He called it Bakelite, which combined two chemicals, formaldehyde and phenol, under heat and pressure. Some say that the history of plastic dates to 1862 when Parksine used man-made plastic derived from organic cellulose. This opened Pandora's box at that time, with plastic replacing almost every item that man used. The word plastic essentially means pliable and easily shaped. It has only recently changed to the word ‘polymer’, which means that they are made up of a long chain of molecules. Polymers are also found in nature. Cellulose, which makes up the cell walls of plants, is a common natural polymer.

Over the last century and a half, humans have learned how to make synthetic polymers, which are made from fossil fuels. This is a hazardous component that contributes to air pollution. Synthetic polymers are composed of long chains of atoms that are continuously repeated. The length of these chains is what gives polymers their lightweight and strong properties.

The optimism with respect to the use of plastic did not remain for long as there was a shift in the perception of this material, and it was no longer all positive. It started with plastic debris in the oceans in the 1960s, and the word ‘plastic’ signified what was cheap and flimsy or fake, so anti-plastic sentiments had already started by the 1960s. But because it was so cheap and had a huge number of uses, moving towards this material reduced the cost of the product.

2.1. Sustainability and environmental protection

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ISSN: 2455-8834

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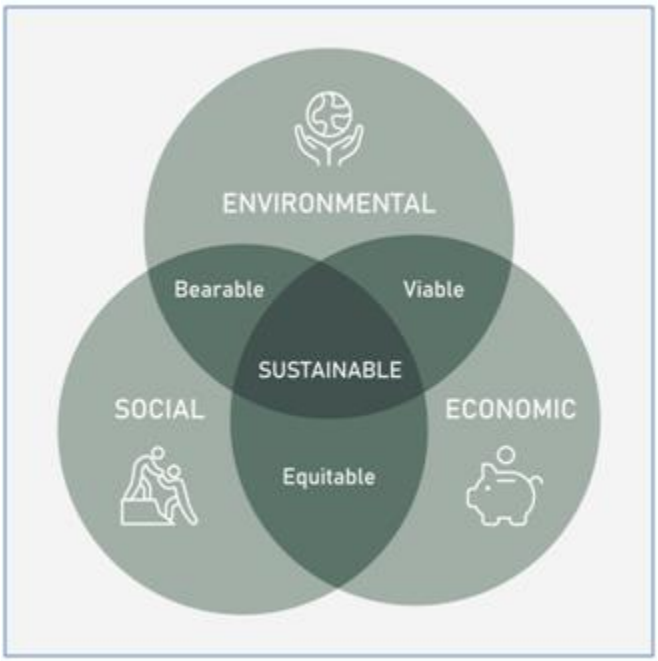
For a product or material to be described as sustainable, it needs to be environmentally, economically, and socially sustainable. These are also known as the three pillars of sustainability. Environment protection essentially means the maintenance of a healthy natural environment. Sustainable development would achieve long-term equitable growth benefiting current and future generations.

Many businesses and governments are committed to sustainable growth, which includes reducing environmental footprints and conserving resources. It also aims at reducing risks that arise from hazardous materials and wastes, such as fuel and oil. It is critical to meet the demands of current generations, but this should not deplete the resources available for future generations in terms of natural, social, and economic resources. Conservation of biodiversity and ecological integrity are also key considerations. All economies have committed to following best practices and preventing the loss of human and natural capital.

Figure 3: Three Pillars of Sustainability



Source: snclavalin.com

2.2 The Circular Flow

A sustainable circular economy is a system of resource utilisation in which elements are reduced, reused, and recycled. The circular economy encourages the use of as many biodegradable materials as possible in the production of products that are essentially made up of biological

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ISSN: 2455-8834

Volume:08, Issue:06 "June 2023"

nutrients so that they can be returned to nature without causing any harm to the environment at the end of their useful life.

This is not possible for all products, for example, in the case of technical nutrients, electronics, hardware, batteries, etc. The idea here is to uncouple them and give them a new life by reintroducing them into the production cycle. But when this is still not possible, then an attempt should be made to respectfully recycle them with the environment.

Normally, in most economic models, there is a continuous trade-off between economics, society, and the environment, but in the case of the circular economy, it is a substantial improvement that is common to both businesses and consumers. Economically, it makes sense to reuse resources, as they are more cost-effective than if they were started from scratch. As a result, production costs are reduced, and thus the sale price is reduced, benefiting the consumer while also being environmentally benign.

Figure 4: Circular flow of the economy

Source: futurerecycling.com.au

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ISSN: 2455-8834

Volume:08, Issue:06 "June 2023"

There are ten principles that define the way the circular economy works. These can basically be listed as the following:

1. Waste becomes a resource, which essentially implies that all biodegradable materials are returned to nature and non-biodegradable materials are utilized.
2. The second use, what is not required might be reintroduced into the production circle in such a way that it becomes an integral part of the final product.
3. Reuse certain products that can still work in the production of new ones.
4. Reparation, in this stage, one needs to give the damaged product a second life.
5. Recycle, which means making use of materials that have been found in the waste pile.
6. Valorization means harnessing energy from waste that can be recycled.
7. Functionality economy, this talks of a hypothetical economy where there is no sale of the product, and the mantra is to establish a system of rental property. This means that when the product has completed its main function, it is returned to the company. The dismantled products are then reused.
8. Reusing and recycling a product- results in a deduction of energy, especially from fossil fuels.
9. Eco-design requires integration at the conception stage and consideration of the environmental impact throughout the product's life cycle.
10. Industrial and territorial ecology refers to the establishment of an industrial-organizational method whereby there is an optimization of stocks and flows with respect to materials, energy, and services.

Essentially, a circular economy reduces material use and redesigns materials, products, and services so that they use the waste to manufacture new materials and products. All of this would help build a sustainable society. Such a system is concerned with mass urbanisation, as it would be detrimental to the environment. Policy measures need to be harnessed towards finding adequate employment within the areas where the people reside rather than them migrating to the urban areas in search of employment.

It reduces the threat to nature, and doing so is beneficial to the citizens. As most investors respond by encouraging nature-positive strategies, which in turn will create new opportunities that are sustainable for all.

3. Reasons for banning plastics by the Government of India

India has taken an extremely important step and imposed a ban on single-use plastics so that they can control ‘plastic pollution’. The items range from straws to earbuds to cigarette packets. India is the second-most populous country in the world, and plastic waste has become a huge source of

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ISSN: 2455-8834

Volume:08, Issue:06 "June 2023"

pollution. As the economy moves on the path of growth, it has led to increasing use of plastic products, most of them single-use plastic. It has been claimed that India uses 14 million tonnes of plastic every year.

Streets in every city are littered with used plastic goods, which are choking drains, rivers, and oceans as well as killing animals. The United Nations has indicated that plastic waste has reached epidemic proportions in the world's oceans and has in fact found a large amount of microplastic in the intestines of deep-dwelling ocean mammals like whales.

Figure 5: Impact of plastic consumption on animals and marine life

Source:seagoinggreen.org

The reason that India has taken this step, despite protests by various businesses and industrial houses, is to preserve the socio-economic environment. This was introduced in the middle of 2022, indicating that the government was moving towards more progressive plastic waste legislation.

Though it has been passed as a law by the Centre, the state governments have a huge role in its implementation. The other most important fact is whether the alternatives to plastics are going to be friendly to the environment.

Plastic pollution poses major threats to:

- Environment
- Human health
- Sustainable development

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ISSN: 2455-8834

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The adverse impact of plastic pollution lasts throughout the life cycle of plastic in terms of livelihood, human well-being, and the ecosystem. The main problem is that as the economies of the world develop, production and consumption increase, as do international trade and diversified sources, which contribute to plastic pollution.

Pollution from plastic from land-based sources has been increasing as urbanisation increases. It is the developing economies of the world, like India, that are, in fact, the largest sources of this type of pollution. The reason is that emerging market economies have extremely poor waste management infrastructure. Industrialised countries are also considered to be major contributors to plastic consumption and pollution. As the economies of the world have moved towards globalisation, trade has increased tremendously. Along with this increase in trade, plastic consumption has gone up significantly. Developed economies have a good waste management system in place, but underdeveloped economies are still working out an efficient system.

What it indicates is that with increasing trade and a higher growth rate, the consumption of plastics has grown manifold, but what has lagged is an efficient waste management system.

The sudden knowledge about plastic pollution is not only an important area for India but has now become an international concern. It has taken on an international character resulting in many countries of the world introducing national policy initiatives and regulatory measures, targeting initially the manufacture and use of that type of plastic, which is extremely problematic. 'Extremely problematic' is defined as the time period that plastic takes to disintegrate and become one with the environment. What has been discovered is that single-use plastic products are the ones that need to be addressed at the earliest. This is also important with respect to sustainability.

The fundamental reason for the ban in India is the problem of littering. The key points of attention are the promotion of cleanliness, aesthetics, and plastic waste management. This refers to waste collection coverage and reducing hazardous chemical releases, waste burning, and the extensive use of fossil fuels.

4. Analysis of the type of plastics which have been banned

The figure below clearly shows how long it takes for plastic to decompose. India has begun by outlawing single-use plastics, which include plates, cups, cutlery, straws, packaging, films, and cigarettes. The initial idea behind single-use plastic is that it is only used once and then discarded. Plastics not only pollute the environment, but they also cause water pollution. The single-use ones are not biodegradable, and the majority of them end up in a landfill, where they are buried and ultimately enter the soil and water bodies, but they never decompose; instead, they break down into smaller and smaller pieces. Not only are single-use plastics disastrous for

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ISSN: 2455-8834

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human beings but also for aquatic animals. They have been discovered in seabird and turtle abdomens, where they have entered their digestive system, eventually causing death.

Figure 6: Time taken for plastic to decompose

Source: wwf.org.au

Aside from simply prohibiting the product, the government has made an effort to raise awareness about its use by instituting design and labelling requirements, informing consumers about the product's plastic content, providing instructions on how to dispose of it in a way that has the least impact on the environment, and working on effective waste management systems in order to reduce the environmental harm caused by this product.

The government of India has passed the banning of single-use plastic as a law that is punishable. It depends on the various states as to how it is enforced.

5. Impact of the above on the profitability of Micro, Small and Medium Enterprises:

A plastic ban raises the cost of goods and services while decreasing the manufacturer's profits. According to the All-India Plastic Manufacturers Association, as many as 88,000 units that manufacture single-use plastic could go bankrupt, with 30% of them being part of the MSME (Ministry of Micro, Small, and Medium Enterprises). This takes into account the businesses that make the goods as well as the cost of replacing single-use plastic with another material. Most of the companies have indicated that tackling plastic waste will eat into their profits. Coca-Cola, for example, produces 38250 metric tonnes of plastic packaging in the United Kingdom each year. The corporation has pledged to increase the proportion of recycled material while also indicating that these efforts would result in a cost increase.

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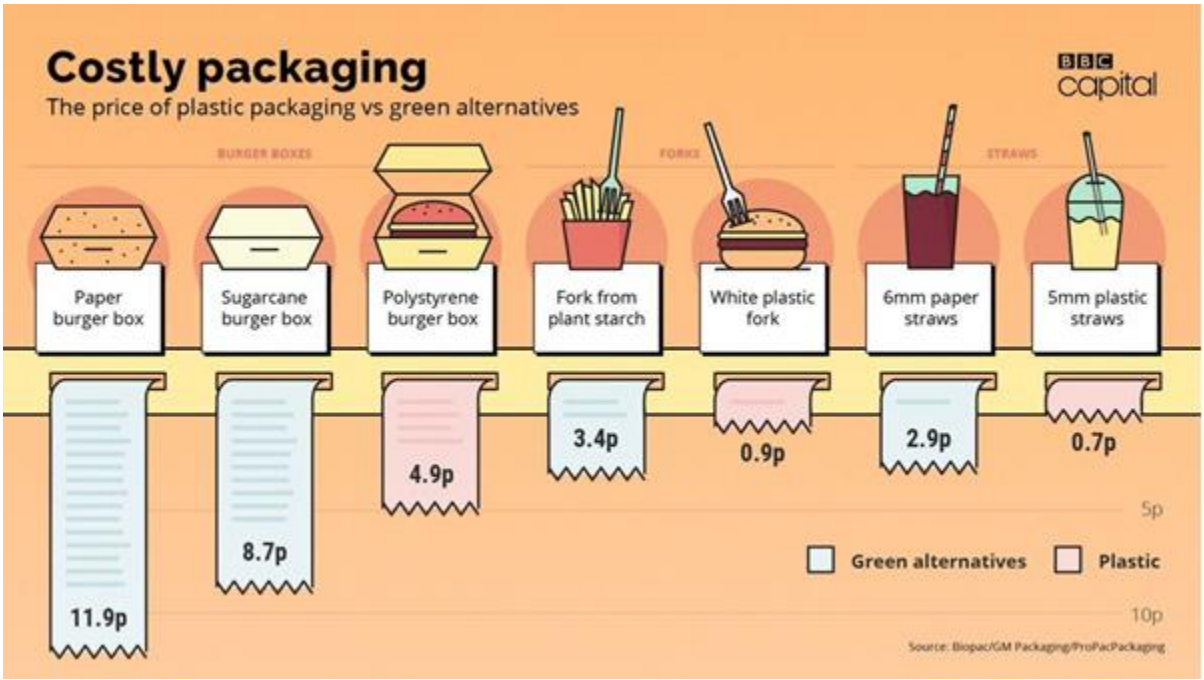
ISSN: 2455-8834

Volume:08, Issue:06 "June 2023"

Many businesses in many countries across the world have used the legal path to fight the prohibition because the costs are prohibitively expensive. Plastics have always been the less expensive, lighter, and more adaptable material. Cold drinks, for example, were formerly prepared in glass bottles; the switch to plastic bottles was somewhat more expensive than glass, but the amount of loss that glass bottles encountered in transportation outweighed the cost increase in shifting to plastic bottles.

Figure 7: A glance at the increasing cost involved in moving to plastic alternatives



Source:bbc.com

The manufacturer is most likely to pass on the increased cost to the consumer, leading to an increase in the price of the product, adding to inflation in the economy.

5. Conclusion

Banning plastic is a forgone conclusion. The question that arises is how the economies of the world handle this extremely useful, cheap product that has made its way into almost every sphere of our lives. The situation is worse in populous countries due to the numbers that must be taken into consideration. This is not to say that other countries have not harmed the environment with the rampant use of plastic leading to what is commonly called 'plastic pollution'. India has passed a law banning single-use plastic to begin with, the final aim would be to ban all plastic usage. The producers are not willing to go along with this as the cost of their product increase

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ISSN: 2455-8834

Volume:08, Issue:06 "June 2023"

manifold. But eventually, there is no escape from banning a product that is the main source of environmental degradation. In the interest of both present as well as future generations, it is important that this step though painful must be undertaken, otherwise it will lead to disastrous consequences.

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