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Solution Foreword

Sustainable packaging plays an important role in our redemption journey to save the environment. Year on year, the exponential growth in the market size of packaging has led to the accumulation of large amounts of waste globally.

A major concern to the environment has been the use of non-biodegradable and non-recyclable raw materials by several companies. However, organisations around the world have made several ground-breaking and unconventional innovations in their efforts to create a better tomorrow.

Enlightening more on this context, this research paper allows readers to get a comprehensive understanding of the current scenario of packaging from both Indian and global perspective. Further, the paper dwells into alternatives of plastic packaging and the initiatives taken by the Indian government to curb waste pollution.

Together, let us explore the transformative potential of sustainable packaging and the promising avenues for a greener, more sustainable tomorrow.

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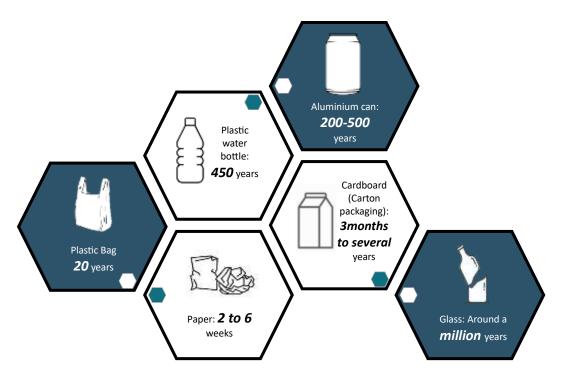


INTRODUCTION

Has the sustainability agenda today, reached the stage where the focus is also on the packaging of the products, something that is otherwise mostly overlooked?

Plastic, in its various forms, is the most widely used packaging material by several companies. Paper, glass, jute, and metals are a few other commonly used packaging materials globally. Each of these packaging materials have different impact on the ecology based on their time to decay.

RAW MATERIALS USED IN PACKAGING AND THEIR ESTIMATED TIME TO DEGRADE



Source: Forge waste and recycling

The long-lasting nature of glass and aluminium, also means that they can be recycled indefinitely when used individually. Old bottles and jars can be continuously remanufactured into new glass containers since the raw material never wears out. Recycling glass and aluminium saves other resources in addition to landfill space.



DID YOU KNOW?

The volume of paper produced globally is very high. Greenpeace estimates that **4 billion** trees are felled for paper production every year, which is equal to **1%** of the Amazon Rainforest.

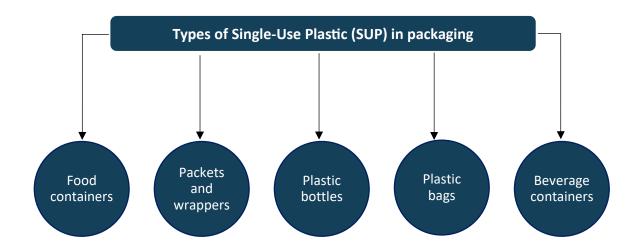
Generally, packaging materials are found in garbage

and even materials like paper which are not directly harmful to the environment, take up more space than plastics in landfills. Paper-based packaging is also often coated with plastic materials, resin or aluminium which makes it non-recyclable.



SINGLE-USE PLASTIC

Even though packaging plays a minor role in a products life cycle, the damages of anti-environmental packaging are quite detrimental. India generates approximately **3.4 million tonnes of plastic waste** annually and **70 percent** of it is for single-use only.¹



Plastic is a non-biodegradable material which takes several years to decompose. As a by-product of petroleum, it affects the climate through carbon emissions and microplastic pollution. Food packaging industry, among others, also makes use of this toxic material which affects the human health adversely, with microplastics being found in human blood recently. The increasing use of this material can possibly lead to the amount of plastic in the ocean outnumbering the amount of fish in the ocean. Only **14%** of the global plastic packaging material is recycled.²

According to a study by Wood Mackenzie, it is estimated that in **2019** the market size of **converter-supplied flexible packaging** was **\$93 billion**, of which plastic accounts for roughly 93% and paper accounts for only 5%. In 2022, the market size of flexible packaging has grown exponentially, now being valued at **\$261 billion**.³

Increasing focus on sustainable solutions and matters reaching the legislative level has forced companies in the plastic industry to convert to sustainable packaging and increase the percentage of recycled materials all the way from raw materials to designing.

Therefore, rather than producing more, it is encouraged to recycle and reuse. This method will serve as a first step towards sustainable living.

 $^{^1\,}india-recycles-only-30-per-cent-of-3-4-mt-plastic-waste-generated-annually-reported and the property of the contract of the property of t$

² https://e360.yale.edu/features/plastic-waste-atmosphere-climate-weather

³ https://www.forbes.com/sites/woodmackenzie/2020/08/24/is-paper-a-more-sustainable-flexible-packaging-material-than-plastic/?sh=d60add812d44



ALTERNATIVES TO NON-BIODEGRADABLE MATERIALS

Companies are seen to adopt non-biodegradable materials for packaging. A few green and unique alternatives adopted by firms are:



Corn-starch which is derived from corn or maize plant is said to have plastic like properties and hence serves as the perfect eco-friendly substitute for bottles and loose-film packaging.



With increasing use of plant-based recyclable material, **Ikea** adopted **mushroom packaging**, a mixture of agricultural waste and mushroom roots-mycelium, for few of its products.



Indian startups such as *Envigreen and Greendiamz Biotech* are working towards organic and biodegradable alternatives to plastic for packaging. *Mend packaging* is another such company which offers sustainable packaging products using materials such as bioplastics, organic cotton among others.



Another green solution which has gained traction recently is **seaweed packaging**. **Zerocircle**, a firm which makes bio-based alternatives has produced a **packaging film** by extracting **agar from seaweed and algae**. This material can be used in food packaging, textiles, courier packaging and other industries.



Edible films have gained a lot of traction in the food packaging industry. Such packaging not only helps the environment but also proves to be a marketing technique due to consumer curiosity. Generally edible coating is made up of different biopolymers and additives.



Hemp Juice a polish-based company which sells Cannabidiol products and uses **recyclable cardboard** as part of its packaging.

COMPANIES STEPPING UP THE GREENER LADDER

Realising the consequences of anti-environmental packaging, many firms are shifting towards sustainable alternatives. For instance –

- Unilever promised to cut its usage of non-recycled plastic to half by 2025.
- British grocery giant Tesco started a sustainable packaging programme to cut its yearly packaging footprint by 1.5 billion pieces of plastic.
- ❖ Algramo, a South America-based company has come up with an innovative solution to completely avoid packaging. The refill revolution initiated by the company aims at consumers to get their old bottles and storage items so that they can fill them with the respective household product such as detergents, dog food, etc as per their necessity. In 2021 the company reused over 230,000 plastic



Mars Wrigley, a chocolate manufacturer has shifted to recyclable paper wrappers from plastic packaging.



- packages, equivalent to over 30 tonnes of plastic.⁴ Further, they have partnered with Unilever and Walmart in their journey to make the world more sustainable.
- In FY22, P&G group was able to achieve 'plastic packaging waste neutrality' by collecting, processing, and recycling more than 19,000 MT of post-consumer plastic packaging waste from all over India.⁵

THE INDIAN TALE OF SUSTAINABLE PACKAGING

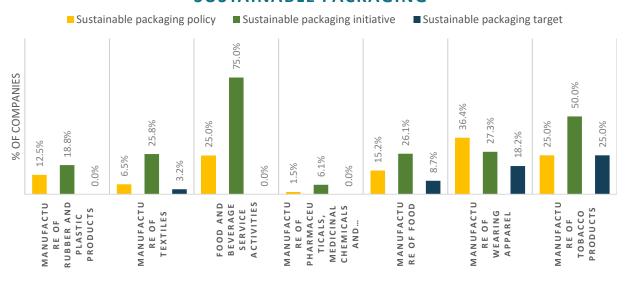
Companies listed in India are required to disclose their environmental, social, and corporate governance (ESG) information under the SEBI-approved framework, Business Responsibility and Sustainability Report (BRSR).

BRSR includes indicators such as Extended Producer Responsibility (EPR) and Life Cycle Assessment (LCA), which checks the applicability of EPR and if the entity has conducted LCA. LCA is a methodology for assessing environmental impacts associated with all the stages of the life cycle of a commercial product, process, or service. BRSR also encourages companies to report what amount of their waste (including packaging) is reused, recycled, and disposed of. These indicators hold utmost prominence while evaluating a company from the ESG perspective and ESGRisk.ai incorporates these in its ESG rating taxonomy.

ESGRisk.ai, India's first ESG Rating provider, has the largest coverage of ESG Ratings of 1100 Indian companies and the most comprehensive taxonomy consisting of 1000 indicators with each indicator having industry-specific materiality to factor in the industry realities.

To better understand the momentum towards sustainable packing, ESGRisk.ai conducted extensive research on companies across packaging heavy industries. To create a long-lasting impact, one cannot simply undertake measures in a random fashion, it must be carefully put in place through a policy, converting it to initiatives, measuring progress and finally setting targets.

SUSTAINABLE PACKAGING



Source: ESG Risk Assessments & Insights

⁴ https://www.weforum.org/impact/smart-shopping-consumers-fight-plastic-waste/

⁵ https://in.pg.com/annual report 2022.pdf



According to research conducted by ESGRisk.ai, only 6% of the companies who manufacture pharmaceuticals, have taken initiatives to minimise the environmental impact of its product packaging, with no companies having set a target to reduce non-biodegradable packaging. With such large quantities of medicinal drugs available in the market, lack of policies and initiatives might lead to accumulation of packaging waste in abundance.

Conversely, a substantial number of companies involved in food & beverage service activities have initiatives in place for eco-friendly packaging thereby showcasing the changes undergone by firms in this industry. On average, very few businesses have created sustainable packaging policies, and even fewer yet have established goals to encourage the use of sustainable packaging for their products.

FY 19 ■ FY 20 ■ FY 21 ■ FY 22 29% %09 58% 21% **ENVIRONMENT SCORE** 33% BALKRISHNA TRIDENT LIMITED PROCTER & ADITYA BIRLA NESTLE INDIA DEVYANI INDUSTRIES INTERNATIONAL GAMBLE HEALTH FASHION AND LIMITED LIMITED LIMITED RETAIL LIMITED LIMITED

TRANSITION IN ENVIRONMENT SCORE

Source: ESG Risk Assessments & Insights

It is evident that over the years the ESG performance of companies improves with structured measures being undertaken for various environmental metrices, one of them being packaging.

Companies depicted in the graph have adopted both policies and initiatives to promote the use of sustainable packaging. Balkrishna Industries Limited (BKT) sells the raw materials packaging that it receives from vendors to resellers. As part of their outbound operations, the plastic scrap which is used to cover components is also sold to resellers who then turn it into plastic granules for recycling. Additionally, the company dispatches its products in a 'naked condition' to avoid product packaging.

Devyani International Limited which is one of the largest quick-service restaurants in India has stopped using single-use plastic across all its stores and utilises only paper-based packaging from responsibly managed forests and recycled sources. Such initiatives and policies have helped in improving the y-o-y environment performance of the company by 30%.

Aditya Birla has converted 86.3% of its packaging sustainable by utilising biodegradable polybags and improving alternate packaging strategies in accordance with EPR guidelines. Our research indicates that the company recycled 130 tonnes of plastic (including packaging) in FY 22.

Similarly, P&G group has managed more than 19,000 MT of post-consumer plastic packaging waste in India and achieved the tag of 'plastic packaging waste neutrality'. This is one of the reasons for a 10%



y-o-y increase in its environment performance score in FY 22. Nestle India on the other hand under its brand KITKAT, has used recycled plastic packaging to build benches across popular youth hangout locations.

In conclusion, adopting policies, setting targets, and taking initiatives have helped in improving the environmental performance score of companies.



DID YOU KNOW?

ITC's Paperboards and Specialty Papers business segment as part of its sustainable packaging innovations has recently introduced the Filo series — FiloBev, FiloServe and Filopack paperboards. Filobev makes use of 100% recyclable food grade board. It is made from wood fibres which is sustainably sourced from pulpwood plantations.

In FY 23, ITC has been plastic neutral for the second consecutive year as it sustainably managed 60,000 MT of plastic waste, which is more than the amount utilised in packaging.

REGULATORY CHANGES

In our efforts to protect biodiversity, reduce accumulation of waste and save the environment, several alternatives and initiatives have been taken by organisations and the government.

Karnataka was the first Indian state to ban the use of single-use plastic in 2016. The Ministry of environment, forest and climate change banned the sale and use of single-use plastic items in July 2022 all over the country. The authorities have also set new guidelines on 16th February 2022 for EPR, which will further dwell into plastic packaging waste, promote the use of alternatives, and move further in terms of sustainable packaging. Penalties and fines will also be charged by the government to the respective offender found using plastic. Sustainability will pose a challenge for all product line firms when it comes to sourcing packaging materials. Government is also planning to add eco-tax as part of its guideline for EPR so that firms are incentivised to adopt sustainable packaging.

Hindustan Coca Cola Beverages, Bisleri and PepsiCo India holdings have been fined INR 50.66 crore, INR 10.75 crore and INR 8.7 crore respectively by the Central Pollution Control Board (CPCB) for not adhering to the said rules regarding plastic collection and disposal. Further, even Patanjali and Nourishco Beverages Limited were fined for the same violations.⁶

Additionally, sustainable packaging has a huge impact on the MSME sector and after the ban on single-use plastic, the Indian government has planned to provide support through capacity-building workshops and assistance in manufacturing substitutes.



DID YOU KNOW?

One of the worst punishments, globally, for plastic bags use is enforced by **Kenya**. Fines go up to US\$ 40,000 and even jailtime on case-to-case basis.

⁶ disposal-of-plastic-waste-coke-pepsi-bisleri-fined/articleshow/80775475.cms



WAY FORWARD

According to Invest India, the packaging industry is estimated to reach a market value of \$1.05 trillion by 2024.⁷ The very fact that the industry is involved with each, and every product being produced in the economy makes it a significant sector to focus on for a sustainable tomorrow. Innovative solutions that are being developed constantly makes it evident that packaging is an emerging science and influences major industries such as pharmaceuticals, FMCG, rubber and plastics, among others. To begin with, firms should introduce better recycling systems, less use of non-biodegradable materials as substrate in packaging, stringent measures towards the use of plastic and lastly adopt green packaging solutions. Single-use packaging should be abolished irrespective of the substrate used. Additionally, organisations are encouraged to be more transparent in disclosing the weight of packaging materials consumed in the financial year.

Much of the problem can be resolved if the already-produced plastic is somehow recycled back in the production cycle. Collaboration between production companies, recycling firms and converters is essential in our journey to make packaging more sustainable eventually.

⁷ https://www.investindia.gov.in/team-india-blogs/indian-packaging-sector-outlook-industry



CONTRIBUTORS

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ABOUT ESGRISK.AI

ESG Risk Assessments & Insights (ESGRisk.ai) is India's first ESG Rating provider and a wholly owned subsidiary of Acuitè Ratings and Research. ESGRisk.ai has developed a detailed methodology and India focused taxonomy and has the largest coverage of ESG ratings on Indian companies. The company provides ESG analysis, ESG ratings and scores on top Indian listed companies via its ESG India 360 Subscription to investors, corporates, educational institutions, and government bodies.

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