



Plastic Recycling Industry of Bangladesh: An Overview



Plastic Recycling Industry of Bangladesh: An Overview

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Executive Summary

Plastic is essential to human lives and can also be harmful, creating pollution to the environment, rivers, and landfills. However, proper management and recycling can help to turn this harmfulness into a possibility which is the main issue of this study. This study mainly shows the import and export of plastic, its waste, and how it affects the environment. It also supports the idea that recycling is the next top export earning sector. It also discusses the factors which determine the potentiality of this plastic recycling sector and the process of recycling. Plastic can be recycled to form different industrial products like petroleum, yarn and even waste has demand in different countries. This study recommends increasing investment in this sector with government policies to support the investors. Moreover, it will also help to reduce the dependency on import for plastic raw materials which could be produced locally.

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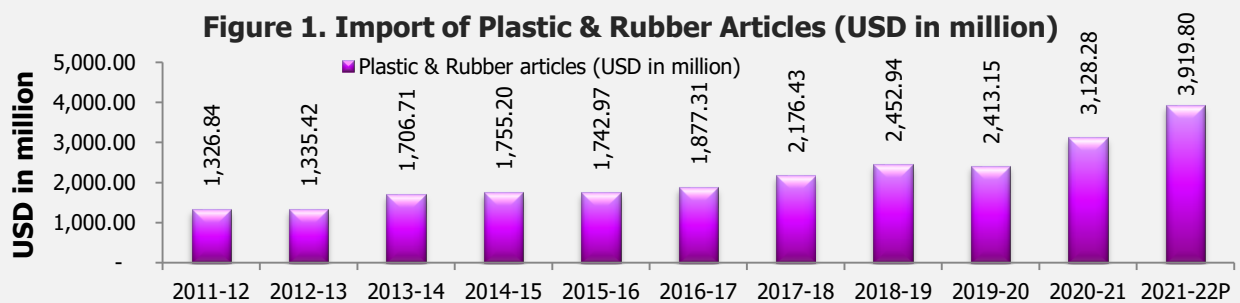
Introduction

This study aims to highlight the opportunities of plastic recycling in Bangladesh which can earn export earnings if investment increases in this sector with government support. Plastic poses such quality, which enables it to be reused multiple times and can be converted into another form to be used for different purposes. Plastic is one of the key industrial sectors in Bangladesh, contributing to the GDP of around 1% (Noyon & Ahmed, 2021), while the export of plastic goods contributes 0.30% (Export Promotion Bureau, 2021). Plastic is an essential product used for household and industry purposes, with a per capita consumption of 10.13 kg (Siddique et al., 2022), although it generates a waste of 7.90 kg (Siddique et al., 2022). It is a non-biodegradable product that can remain unaffected from 400 to 1,000 years in the soil, leaving its harmful properties (Gargi Das Chomok, 2022). Due to its non-biodegradable nature, plastic threatens the environment by creating pollution. Mismanaged plastic waste pollutes cities, the countryside, rivers, and canals. They clog drains, causing urban flooding. However, over time it also degrades but releases smaller particles called micro plastics which pose a significant risk to human life and ecosystems. Thus recycling plastic can bring a solution to this problem.

As plastic usage has increased with rapid economic growth and urbanization, waste generation has also increased in line with it. About 381 million tonnes of plastic waste is generated annually, rising and assumed to double by 2034, as per Condor Ferries – Marine & Ocean Pollution Statistics & Facts 2020-2021 (Plastic in the Ocean Statistics & Facts, 2021). Plastic recycling is a significant issue in nature conservation and a potential investment sector. There are existing plastic factories of more than 5,000 and recycling factories of 300 only in the Dhaka region (Bangladesh Investment Development Authority, 2020); National-Action-Plan-for-Plastic-Management, 2021). The plastic industry is proliferating after the use of one-time plastic increased when Covid-19 affected the global economy having a growth rate of 20% (Abbas Uddin Noyon & Foisal Ahmed, 2021), which also increased the waste generation to 7.50% (Plastic Packaging Products and Environmental Concerns, 2022). This sector is a potential opportunity as it can be used several times. Moreover, the waste can be used to make other forms that are used for other industrial purposes. It has a demand in the international market as well. The plastic waste recycling industry has a BDT 100 million market size and has enormous potential to grow and become an addition to the export basket. However, making an environment-friendly sector is a real challenge.

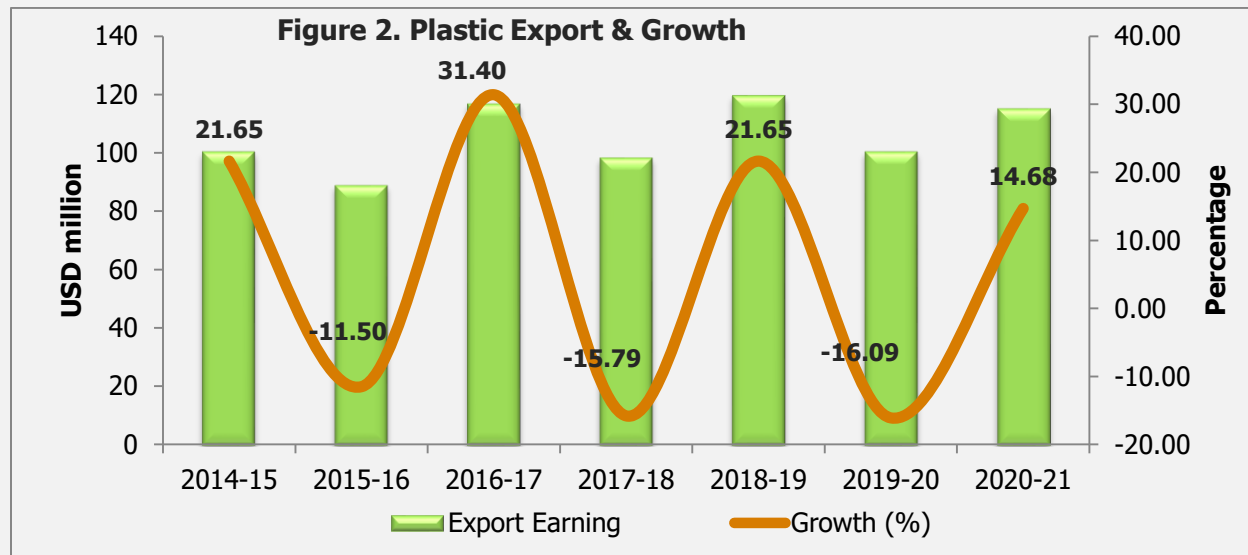
The Import & Export Statistics

Bangladesh is import-dependent on plastic raw materials like polymers, synthetic resins, polyethylene terephthalate (PET), polypropylene (PP), and polyvinyl chloride (PVC). Sometimes locally recycled raw materials are also used, but it comprises only around 10% of the raw materials required (Prospects of Plastics Waste Recycling in Bangladesh | Waste Concern, 2021). The raw materials are imported from different countries, which include China, India, etc. According to Bangladesh Bank data, plastic materials imports increased in 2021 and 2022 (Figure 1).

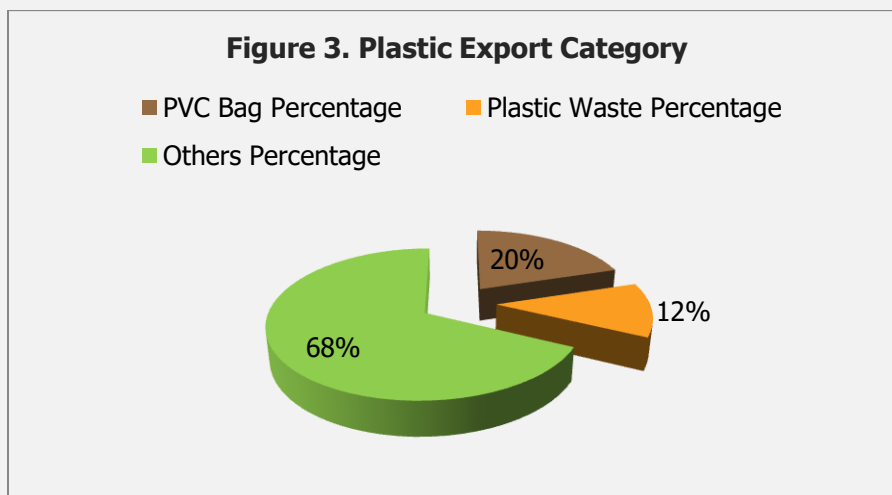


Source: Bangladesh Bank (2022)

Plastic has seen some fluctuation in the export trend. The growth declined significantly in FY2019-20 and then experienced a rise of 14.68% in FY2020-21 (Figure 2). The global market share of Bangladesh is only 0.5% which has the potential to grow in the future. Bangladesh mainly exports to the United States, Canada, India, China, and many other countries (Abbas Uddin Noyon & Foaisal Ahmed, 2021).



There are different categories of plastic exported to different countries. Around 20% comprises PVC bags, 12% from plastic waste, and 68% from others, including plastic toy products (Figure 3). There is significant demand for plastic waste and pet flakes. This sector will flourish if plastic waste is collected and recycled appropriately, creating employment opportunities and investment potential.



Environmental Impact of Plastic Waste

Around 4 million tonnes of plastic can produce up to 1 million tonnes of waste yearly, according to a survey report (Ahmed, 2022). Plastic elements are such that it does not decompose even for hundreds of years. Thus it is detrimental to the environment, for plants, animals, and human lives. Around 48% of plastic waste goes to landfills, 12% ends up in water bodies, and 3% is dumped in drains and unused areas. Only 37% of the waste is recycled (Bangladesh Aims at Reducing 30% Plastic Waste by 2030, 2021). The impacts of plastic waste are mentioned in the following:

- The waste blocks drain into rivers & lakes, causing water stagnation
- Destroys the fertility of the soil and causes disastrous environmental degradation
- It also damages aquatic and marine ecosystems
- Threatening food security
- Dissolving into micro plastic and affecting humans (Pekow, 2022)

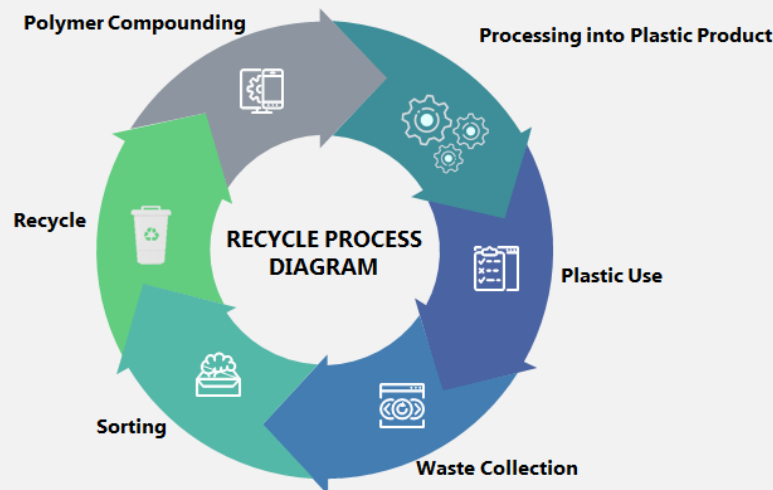
Among the misused plastic waste in the world, Bangladesh accounts for 2.4%. The recycling factories are set up in different locations in the country. There are over 1000 recycling plants in Bangladesh (Karmaker, 2022). However, they are not getting enough waste plastics as raw materials to make reusable products such as PET (polyethylene terephthalate) flakes, PSF (polyester staple fiber), polyester yarn, and polyester fabric (Not Enough Plastic Waste for Recyclers, 2021).

The government is working on sustainable waste management and following waste reduction, reuse, and recycling (Three R) management strategies formulated for environment-friendly waste management.

Opportunities in Plastic Recycle Industry

With proper support, facilities, and technology currently available in the country, 50% of the waste material could be recycled. If the resources can be appropriately utilized, the waste can be turned into a fresh product that can generate cash (Ahmed, 2022). Recycling is the best way to maximize the life expectancy of existing plastic materials and a potential sector of investment that can also save billions of foreign currency spent on importing these raw materials. This suggests that recycling and the growth of the plastic sector are mutually inclusive and supportive. There is a unique opportunity to invest in this labor-intensive and complex industry by incorporating solutions for collecting and recycling plastic (World Bank Contest Brings Creative Solutions to Combat Plastic Pollution in Bangladesh, 2021). The recycling process has been discussed below (Figure 4):

Figure 4. Recycling Process



In Europe and Asia, many countries recycle plastic, and Bangladesh uses plastic waste to recycle it to make products. Bangladesh can follow the waste management mechanism and recycle plastic with many uses. There are many uses for recycled plastic materials, such as nylon yarn, artificial cotton, resin, or

cloth yarns, and also exporting these plastic wastes (Figure 5). By setting up plants to produce fuel and gas from plastic waste (Recycling of Plastic Wastes, 2022).

Figure 5. Plastic Products after Recycling



Conclusion and Recommendation

The government actively reduces pollution and encourages environment-friendly processes in different industries. In partnership with the World Bank, Bangladesh has designed a "National Action Plan for Sustainable Plastic Management." Beginning from FY21, the plan is to reduce plastic use by 50% by 2025, remove single-use plastic by 90% by 2026, and abate plastic waste production by 30% by 2030. (World Bank, 2021).

However, this sector is yet to attract higher investment as recycling is appallingly low, although the government is providing tax exemption for recycling and reduced bank loans that some enterprises availed of. As the share of plastic waste is more than other waste collected daily in the country, it would be a significant sector to invest in recycling with support from the government. However, collecting and recycling waste is challenging; if that does not happen, a bulk of waste will be left to pollute the environment (Ahmed, 2022). PET bottle and polyester staple fiber have attracted investments as the government is providing a 10% subsidy against PET bottle and polyester staple fiber exports which are mainly exported to China, India, Vietnam, Indonesia, Russia, and a few European countries (Not Enough Plastic Waste for Recyclers, 2021). The recycling industry may generate profit from the initial year as the cost of collection and recycling is lower than sales. Moreover, it will add to GDP, attracting export and reducing dependency on imported raw materials.

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