



A Report on Plastic Industry of Bangladesh

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Executive Summary

Plastic-based products currently represent a sizeable sector industry in Bangladesh. The current market size of plastic products is around \$1 billion with majority \$714 million in the domestic market and the rest in the global market. The plastic sector has around 3,000 manufacturing units that offer jobs to more than 2 million people directly and indirectly. The report highlights that Bangladesh is one of the lowest plastics consuming countries.

Plastic is an engineered material used to manufacture a wide variety of products to meet the domestic demand in Bangladesh as well as some products are exported. The plastic industry has emerged as an important industrial sector in the country during the last two decades. At present there are 3,000 plastic manufacturing units, 98% of which belong to the Small-Medium Enterprises (SMEs). Domestic market size is Tk 7,000 crore. Per capita consumption of plastics in Bangladesh is 5 kg per year. The plastic sector constitutes 1% of GDP and provides employment for half a million people. An in-depth study of the plastic sector reveals multi-dimensional constraints and an excellent prospect for future growth. Major constraint in the plastic sector is the lack of an institutional arrangement dedicated to this sector, in order to provide supporting services such as skilled manpower, testing facilities for quality control, innovative technology and consultancy services. The availability of cheap labor and the fast developing plastic wastes recycling industry due to rising cost of petroleum (raw material of polymers) provide Bangladesh potential advantage of competitiveness in the global market.

1. Introduction

Plastic has changed our everyday life. We are involved with plastic made products in various ways. Plastic plays an important part in our life from morning alarm clock to dinner food table, from coffee cup to desktop PC, from bus to airplane and so on. Plastics are used widely everywhere in our life. Plastic makes our life easier and better. Day by day people are becoming more and more dependent on the use of plastics because of the characteristics of plastic such as inert, durability, flexibility and versatility and so on. Below there are some main criteria of plastics:

- High heat combustion
- Plastics do not absorb much moisture
- Water content of the plastics is far lower than the water content in the biomass.
- Increasing availability in the local community.

The plastic industry in Bangladesh is relatively new compared with the textile and leather industries. The plastic industry began its journey as a small industry in 1960`s. Some of the milestones of the development of plastic industries are listed in Table-1. Since early 1990`s the plastic industry witnessed rapid growth due to introduction of free market economy.

Table: 1. Milestones of Development of Plastic Industries in Bangladesh

Year	Technology and Products
1960`s	Small products such as toys, bangles and photo frame where made using handmade molds. Plastic spare parts for jute mills.
1970`s	Automatic machines were installed to manufacture household utensils such as plastic jugs and plate.
1980`s	Film blowing machines to manufacture plastic bags.
1991`s	Plastic accessories especially hangers for exportable garments.
2000`s	Molded plastic chairs and tables. Water tank made by rotation molding. Locally developed machines (shredder, extruder, and pelletizer) for recycling plastic wastes.

2. Types of Plastic

There are two basic types of plastics

- ① Thermoplastic: Thermoplastic made of long side chains. The bond between thermoplastics molecules are weak so they can be soften and harden through heating and cooling process repeatedly. And these changes do not make any kind of changes in their chemical structure. Thermoplastic can be recycled after used. Most of the plastics products are made from thermoplastics.
- ② Thermoset: Thermoset plastics formed a cross-linked structure during processing so they cannot be reshaped or recycled. The bond between the molecules is very strong.

3. Locational Distribution

In recent times the number of plastic industry increasing as a mushroom growth in Bangladesh. Most of the plastic industries are in the capital city Dhaka. Now there are 2,997 plastic enterprises in Bangladesh. Among them 1,965 companies are small, 980 are medium companies and around 52 companies are big that deals internationally. Most of the industries are located in the Dhaka metropolitan city. About 65% of industries in Dhaka and 20% of companies are located in the port city Chittagong (EPB).

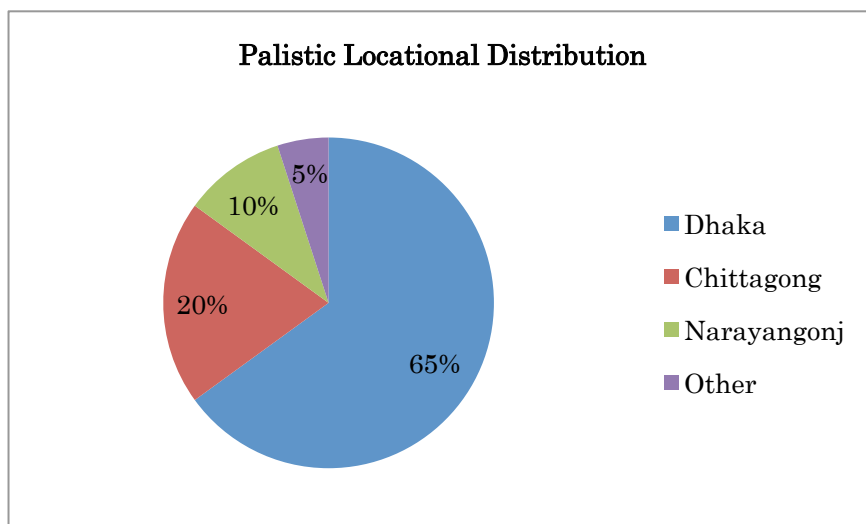


Figure: Plastic Industries in Bangladesh

4. Plastic Bag History of World

Imagine a world without plastic shopping bags. It could be the future. First introduced in the 1970s, plastic bags now account for four out of every five bags handed out at the grocery store. When one looks at it as a product, it is an unbelievable success story.

1957: The first baggies and sandwich bags on a roll are introduced.

1958: Poly dry cleaning bags compete with traditional brown paper.

1966: Plastic bag use in bread packaging takes over 25 to 30 percent of the market.

1966: Plastic produce bags on a roll are introduced in grocery stores.

1973: The first commercial system for manufacturing plastic grocery bags becomes operational

1977: The plastic grocery bag is introduced to the supermarket industry as an alternative to paper sacks.

1990: The first blue bag-recycling program begins with curb side collection.

1990: Consumer plastic bag recycling begins through a supermarket collection-site network.

1996: Four of five grocery bags used are plastic.

1996: Over 80% of all bags used are plastic. Plastic is multipurpose and therefore is seen almost everywhere. Whether we are aware of it or not, plastics play an important part in our life. Plastics' versatility allows it to be used in everything from car parts to doll parts, from soft drink bottles to the refrigerators they are stored in.

5. Utilities of Plastics

The utilization of plastics ranges from toys to aircrafts, from hosepipes to dolls, from soft drink bottles to refrigerators, from gramophone records to television sets. The highest users of plastics in Bangladesh are industries related to infrastructure, agriculture and water management and packaging. Plastics are indispensable materials used in variety of application. Such as:

- Building & Construction
- ✧ Insulation
- ✧ Plumbing
- ✧ Fixtures
- ✧ Siding
- ✧ Flooring

- ✧ Glazing
- ✧ Doors
- ✧ Bathroom units
- Packaging
- ✧ Rigid plastics are chosen when protection is needed and flexible plastics are chosen when convenience is paramount.
- Electronics
- ✧ Coffee makers
- ✧ Irons
- ✧ Mixers
- ✧ Microwave ovens
- ✧ Food processors
- ✧ In-house wiring
- ✧ Electric switches
- ✧ Connectors
- Household application
- ✧ Plastic pouches & wraps refrigerators dishwashers

6. Manufacture

The toxic chemicals that are most frequently released during the production of plastics include dichloromethane, acetone, methylene chloride, methyl ethyl ketone, styrene, toluene and benzene. Other major emissions include sulfur oxides, nitrous oxides, methanol, ethylene oxide and volatile organic compounds.

The production of a Polyethylene terephthalate (PET) bottle produces nearly 100 times the air pollutants than by the production of same quantity of glass bottles. The use of chemicals such as plasticizers, antioxidants, colorants, flame-retardants, heat stabilizers and barrier resins during plastic production cause toxicity of lead, cadmium, mercury and carcinogens.

7. Recycling

Recycling usually results in the down cycling of plastics into lower-quality products that have higher and more leachable levels of toxic additives. The incomplete combustion of PE (Polyethylene)

during recycling releases carbon monoxide. A recycling plant generates the largest amounts of effluents during washing and cleaning. The wastewater generally has high pollution load in terms of Biological Oxygen Demand (BOD), Chemical Oxygen Demand (COD) and Total Suspended Solids (TSS).

Interestingly, plastic recycling has also developed into a sizeable component of the plastic industry with major recycling centers operating in and around Dhaka, according to the UN report. Availability of river water and low transportation costs have made the recycling units in and around Dhaka economically attractive. About 300 small units are recycling around 138 metric tons of plastic wastes a day. The plastic industry logs more than 10 percent of their earnings from the garment sector.

8. Disposal

The pollution that occurs in the disposal stage is largely during incineration and when plastic wastes fail to reach landfills or incinerators. Burning of plastic containing chlorine substances releases toxic heavy metals and emits noxious gases like dioxins and furans. These can cause a variety of health problems including damage to the reproductive and immune system, respiratory difficulties and cancer.

9. Market Player

1.

Title	Anamul Hoque Sarker
Address	Rahman Chamber (9th floor), 12-13 Motijheel C/A
City	Dhaka – 1000
Country	Bangladesh
Telephone	+880-2-9568364, 01819-219110
Fax	+880-2-7161671
Description	Plastic Industries ltd in Bangladesh

2.

Title	Apon Plastic Industries
Address	8/2, Bakshi Bazar Lane, Lalbagh
City	Dhaka – 1211
Country	Bangladesh
Telephone	+880-2-7300459, 7318549
Fax	+880-2-7300736
Description	Plastic Industries ltd in bangladesh

3.

Title	Arman Poly Plastic Ind. Ltd.
Address	152, East Tejtori Bazar, Tejgaon
City	Dhaka
Country	Bangladesh
Telephone	+880-2-9131413
Description	Plastic Goods (industrial & Domestic) house in bangladesh

4.

Title	Asset Devop. & Holdings Ltd.
Address	91, Gulshan Avenue, Gulshan
City	Dhaka
Country	Bangladesh
Telephone	+880-2-9882245, 9886403, 9883136
Fax	+880-2-8828272
Description	Plastic Industries ltd in Bangladesh

5.

Title	Bengal Plastic Industries
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Address	Bengal House # 75, Gulshan Avenue, Gulshan-1,
City	Dhaka – 1208
Country	Bangladesh
Telephone	+880-2-9888248
Fax	+880-2-8827507
Description	Plastic Industries ltd in Bangladesh

6.

Title	Ghorashal Multilayer Plastic Packaging Ltd.
Address	House # 55, Road # 6/A, Dhanmjondi R/A
City	Dhaka – 1205
Country	Bangladesh
Telephone	+880-2-9116446, 9110893
Fax	+880-2-8113186, 8313060
Description	Plastic Industries ltd in Bangladesh

10. Remarkable Features of Plastic Industries

The plastic industry in Bangladesh uses imported polymer granules. During the period 1989 to 2007, the import of polymers increased from 10,000 tons to 289,000 tons per year. At present total consumption of polymers including imported polymers and recycled plastic wastes is 750,000 tons in FY 2010-2011. This corresponds to the per capita consumption of plastics in Bangladesh 5 kg per year against the world average 30 kg. Per capita consumption in India and ASEAN countries are 8kg and 17kg respectively (UN-ESCAPE, 2009).

There are about 3000 manufacturing units in the plastic sector of which 98% belongs to the Small and Medium Enterprises (SMEs). The plastic sector contributes 1.0 percent of GDP and provides employment for half a million people. Additional information on the plastic sector can be seen from Table-2.

Domestic Market	TK. 7,000 Crore (US\$ 950 million)
Per Capita Plastic Consumption	About 5 kg/ year
Direct Export earning	TK. 500 Crore (US\$ 69 million)
Deem Export: RMG Accessories	TK. 2000 Crore (US\$ 286 million)
Manufacturing Units	About 3,000 small, medium and large plastic manufacturing units operate across the country
Recycling Sector	There are 300 small units in Dhaka City which recycle about 138 tons /day.
Growth	20 percent per annum during the 1990`s
Employment	Half a million workers are employed in the sector.

Source: UN-ESCAP Report-2009

11. Plastic Products

Applications of plastic products include Packaging, Healthcare/Pharmaceutical, Construction, Consumer Products, Agriculture and other Industrial uses.

The plastic products are used in different purposes such as packaging, construction, pharmaceutical and consumer products. Garbage bags, toothbrushes, artificial flowers, ballpoint pens, PVC (polyvinyl chloride) pipes, polythene sheets, electric switches and computer accessories also use plastic products. Although the plastic industry in Bangladesh has made remarkable progress over the years, it still lacks a well-designed approach for achieving long-term and sustainable growth.

12. Raw Materials

There is no production of polymers in Bangladesh. The plastic industry uses imported raw materials of polymer granules. In a year, near about 0.75 million tons of plastic raw materials, mostly known as Resin, is needed for plastic industries in Bangladesh. Most of the raw materials are collected from India, Saudi Arabia, Malaysia and some other countries. So we have to be dependent on these countries for plastic raw materials.

13. Market Size Potential

If we look back, in 1990 the consumption of plastics in Bangladesh was 15,000 tons. It took 20 years to reach the 750,000 tons, an increase of 50 times. At present the per capita consumption of plastics in Bangladesh is 5 kg/year as compared to world average of 20 kg. Thus, there is a huge potential for the growth of plastic industry in the country.

14. Export

There is a great opportunity to export plastic products and earn foreign currency to strengthen Bangladesh economy. Bangladesh is doing well in export plastic products. Different types of plastic products such as chair, table, hanger, jug, glass, toys, basket, ball point pen body, electronic switch, tooth brush, wardrobe, sofa set, garments related oven, polypropylene plastics bag etc. are now export from Bangladesh. Moreover, bathroom fittings like bathroom flash, stop cock, PVC pipe, door, and window are exported from our country.

As per export Promotion Bureau (EPB), in 2010-11 Bangladesh earned around \$ 68 million by exporting plastics products. In 2009-2010 the amount was nearly \$ 50 million and in 2008-09 it was little over \$ 52 million.

The UK, USA, EU countries, and Malaysia are the main exporter of plastic products from Bangladesh. Besides these countries, plastic products are exported to SAARC member countries like India, Sri-Lanka, Nepal.

Financial Year	Million US\$	Growth Rate (%)
2004-2005	38.8	16.4
2005-2006	44.4	14.0
2006-2007	48.0	7.5
2007-2008	54.1	12.7
2008-2009	52.3	-3.0
2009-2010	50.6	-3.0
2010-2011	68.7	35.0
2011-2012	84.2	22.0

Source: Export Promotion Bureau, 2013.

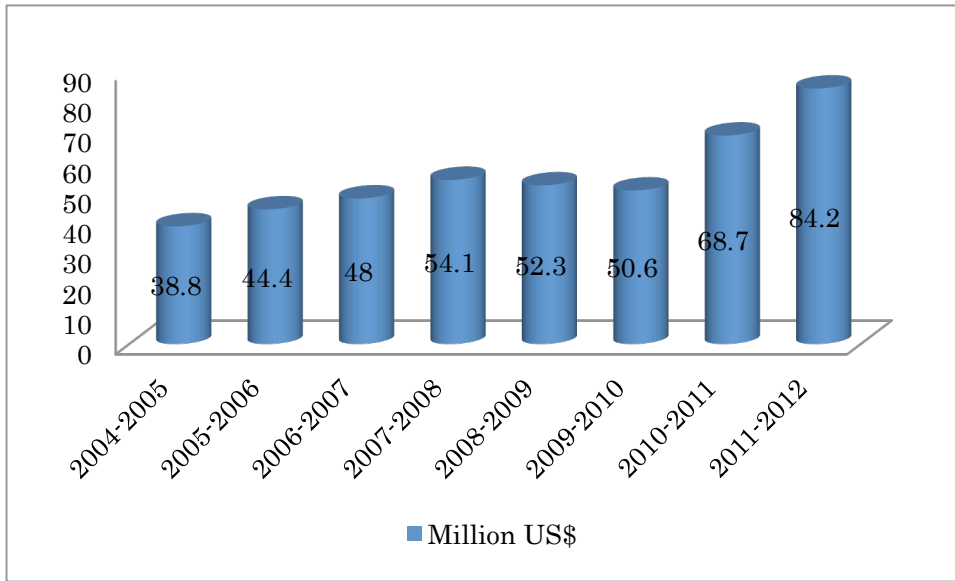


Figure: Plastic Export of Bangladesh

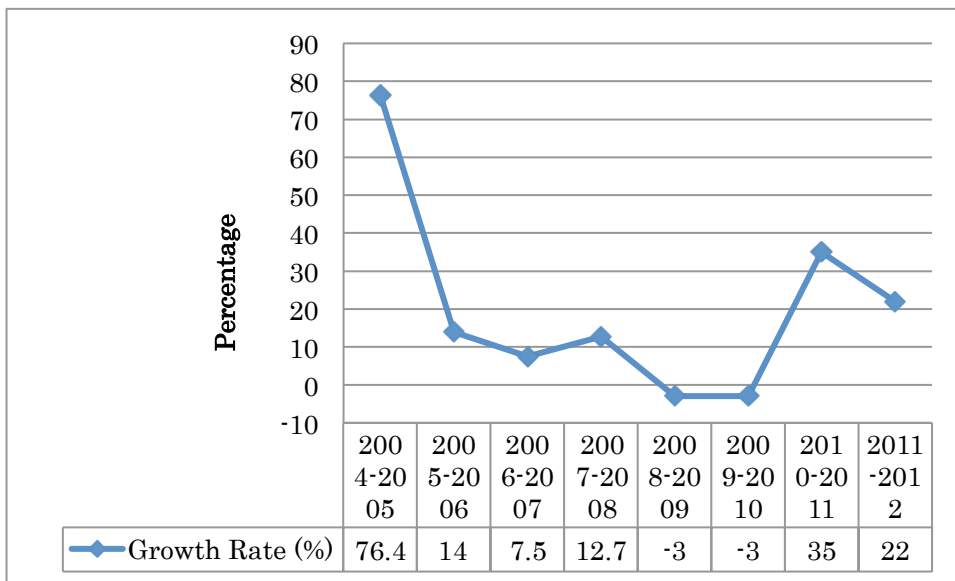


Figure: Growth rate of plastic export

15. Challenges

First and foremost challenge for the plastic industry in Bangladesh is to be competitive in the global market. Some of the large-scale plastic industries have demonstrated a capability to be world class in terms of technology, quality and costs. However, there are 3000 plastic manufacturing units of which 98% belong to the small-medium sector (SMEs). The major challenge facing this sector is to

make the SMEs competitive in the global market by upgrading them in terms of innovative technology, products diversity and operation costs. It is to be emphasized that technology is changing rapidly and the life cycle is short.

16. Prospect of Plastic Industries

Manufacturing is a sun set industry in the west. Plastic consumption there is the highest on a per capita basis. A shift in manufacturing from the west to Bangladesh with low labor cost, high knowledge and technology base can be expected (Ambani-1998). Bangladesh has a competitive advantage in the case of labor cost. Other qualities are to be acquired in order to be competitive in the international market. The main prospects are below:

- The availability of cheap labor and the fast developing recycling industry of postconsumer plastic wastes in Bangladesh are potential advantages to provide competitiveness in the global market.
- At present the per capita consumption of plastics in Bangladesh is 5 kg/year as compared to world average of 20 kg. Thus, there is a huge potential for the growth of plastic industry in the country.
- Bangladesh is growing economic country. Here middle class and upper middle class people have huge demand of plastic. For this reason, Japanese Plastic Company has huge opportunity to doing business in Bangladesh.
- At the present time the population of Bangladesh is increasing very alarming rate. The demand of plastic is very high, particularly in Dhaka city. So the prospect of plastic business is very high. Now if the plastic companies run their business according to the demand of middle class, lower middle class, and higher middle class people, the business must be profitable.
- Bangladesh's plastic sector is deemed competitive because a favorable business environment.

17. Conclusion

A silent revolution has taken place in the field of plastic products in Bangladesh. Almost all the families of Bangladesh are now using plastic household products in their daily life. People are using plastic products instead of aluminum, tin, copper wares as the former are less expensive and easy to use.



The plastic sector has opened a new era of manufacturing plastic goods which have an excellent export potential. Since most of the plastic industries are in the small and medium categories, the SME Foundation extending due support to this sector can improve its competitiveness in the global market.

The negative image of the plastic sector in Bangladesh can be changed through proper management of plastic wastes. Establishment of a Plastic Institute and strengthening of Plastic Foundation are appropriate institutional arrangements for sustainable development of the plastic industries.