



FINAL
REPORT ON
COMPOSITION OF PLASTIC WASTE AND MARKET
ASSESSMENT OF THE PLASTIC RECYCLING
SECTOR IN DHAKA CITY

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Executive Summary

This study has been commissioned by KATALYST- a project of European Donors for Bangladesh with a goal to improve competitiveness of business within sectors having ample opportunities. Plastic is one of the sector where KATALYST is working. The potentials of recycling of plastic waste have made it a growing business worldwide, both from economic and environmental point of view. In Bangladesh, especially in Dhaka, plastic waste recycling is based on rudimentary technology and dominated by informal sector. However, there is a dearth of information about composition of plastic waste and demand-supply scenario of recycled granules/ pellets.

In order to obtain in depth information about plastic waste composition as well as plastic waste recycling scenario in Dhaka, this study was launched and contracted out to Waste Concern Consultants- a specialized organization working in waste and environmental sector in Bangladesh for more than a decade.

In view of the above facts, this may be considered as a baseline study on plastic waste recycling in Dhaka city in particular and Bangladesh in general. This study is mainly based on primary data, as there was an acute lack of secondary data. The key findings of this study are as follows:

1. In DCC area 3315 tons of solid waste has been generated per day during 2005, of which 4.15% is composed of plastic materials. As such, 50,214 tons of plastic waste is disposed in the city at the rate of 137.57 tons/day.
2. Comparing the previous available date of 1992, with 2005 survey results, it indicates an increase of 10.43% per year in the amount of plastic waste. This also signifies that with the growth of economy of the country, the amount of plastic waste is also increasing. This trend in the growth of plastic waste is expected to continue in near future also.
3. This study also reveals that per capita plastic consumption in Dhaka city is 9 kg/year while the national average stands at 3.6 kg/cap/year, which is lower than the global average of 20 kg/cap/year.
4. From the field survey it has been found that 40.76 tons of unsoiled plastic is collected per day by *feriwallas* before it is disposed, while 50.24 tons/day of soiled plastic is retrieved by different actors (van collectors, waste bin *tokais*, DCC collectors and dumpsite *tokais*) from the disposed waste of 137.57 tons/day. Thus the total amount of plastic waste recycled per day in DCC area stands at 91 tons/day.
5. Price of plastic waste depends upon whether it is soiled or unsoiled. The more it becomes soiled the more its value falls sharply, rendering it difficult to recycle.
6. In terms of employment generation from plastic waste recycling in DCC area, this study has found that 22,792 persons are working in this trade, of which 13% is female. In terms of employed labor force of DCC area, it is 1% while it is 1.6% in terms of informal sector labor force.
7. Recycling of plastic waste in DCC area is saving Tk. 30.8 million per year by just avoiding waste transportation cost.
8. In terms of foreign currency savings, recycling of 33,215 tons/year of plastic waste is saving US \$ 51.1 million per year by avoiding import of virgin resin. With the increase in oil price globally, price of virgin resin is also going up.
9. Analyzing the plastic waste recycling sector from country perspective, this study has found that there is a demand for 540,000 tons of resin per year as raw material. However, total

resin used in the country in 2005 was 438,000 tons of which virgin resin (imported) was 40%, while the remaining 60% i.e., 263,000 tons was recycled resin. Use of recycled resin of 263,000 tons has saved import cost of US \$ 405 million, which is quite a substantial amount of foreign currency saving from Bangladesh's interest point of view.

10. Bangladesh does not have any polymer industry. Despite having abundant natural gas it is deficient in raw materials for polymer production. All virgin polymers are imported. As such, there is a rapidly growing incentive to recycle plastic waste, which is vital from environmentally sustainable perspective.
11. Although 51% of total plastic waste is recycled in DCC area, health safety and environmental issues are not properly looked after. This needs an urgent attention.
12. At least in the near future plastic waste recycling in Bangladesh will remain quite cost-effective due to our cheap and available labor force. Therefore, there is ample scope of improving standards without endangering the financial viability of plastic recycling industry.
13. The importance of plastic waste recycling industry to the economy of the country, by saving US \$ 400 million (with 51% recycling rate) without any sort of government support indicates that some measures need to be urgently taken to encourage and streamline this industry so that it does not fall into disrepute and lend itself to severe criticism from environmental activists.
14. Some recommendations have also been made to promote plastic waste recycling in the country so that higher plastic waste recycling efficiency can be attained from baseline scenario of 51%, while health, safety and related environmental issues are also properly addressed.
15. By increasing plastic waste recycling rate from 51 to 100 percent, and exporting this additional 49 percent recycled plastic granules foreign exchange of US \$ 29.42 million can be earned in DCC area alone. This is based on the assumption that local market is not able to absorb the additional 49 percent of the recycled granule by increasing the recycling rate from 51 to 100 percent. Similarly, in the country context increasing the plastic waste recycling rate from 60 to 100 percent can generate a revenue of US \$ 162 million by exporting the additional 40 percent of the plastic waste which is not being utilized at present.
16. It is recommended that more study should be carried out to identify potential markets for the export of recycled granules from Bangladesh.