TRANSBOUNDARY MOVEMENT OF HAZARDOUS PLASTIC WASTE:

BANGLADESH SITUATION 2021

A COUNTRY SITUATION REPORT BY

Environment and Social Development Organization - ESDO

IN ASSOCIATION WITH

Global Alliance for Incinerator Alternatives (GAIA)

Transboundary Movement of Plastic Waste: Bangladesh Situation 2021

Published By:
Environment and Social Development Organization

Publication Year:
March, 2021

Team Leader
Shahriar Hossain, Ph.D

Editorial Team
Prof. Abu Jafor Mahmud, Siddika Sultana

Researcher
Hridita Ferdous

Support Team
Khalilur Rahman, Mamun ul Hasan, Tuni Ahmed

Contact Address:
Level: 5, House: 8/1, Block: C, Lalmatia, Dhaka-1207, Bangladesh
Phone: +88029122729
Fax: +88029130017
E-mail: info@esdo.org

CONTENTS

There was a time when the natural environment of Bangladesh has been rich with water resources, ready land, crop wealth, and extravagant greenness. Remarkably, the natural degradation in present Bangladesh is exemplified by the dark shade of the Buriganga river that has been the life-line of Dhaka inhabitants for quite a long time. One of the prime reasons for this severe degradation is the careless way of waste disposal and mismanagement of waste; particularly solid waste.

Bangladesh, a small South Asian country located on the eastern flank of India, Bangladesh produces around 87,000 tons of single-use plastics waste annually and 86% of the waste is dumped in landfills (2019). Bangladesh is already facing severe challenges in managing waste, which is one of the prime reasons for the environmental pollution of this country. Bangladesh has been named the world's most polluted country for PM2.5 exposure while Dhaka has emerged as the second most polluted city in the 2019 World Air Quality Report. Bangladesh ranked 10th for producing the largest amount of plastic waste. Emphasizing the trans-boundary movement of plastic waste, it is high time we assess the sources by which trans-boundary movement is occurring like whether the waste source is solely organic or most of the wastages are imposed in our ways by surrounding nations and to be more precise what is the reason behind this.

Scientific studies are scarce for assessing the possible reasons for the transboundary movement of hazardous plastic waste in Bangladesh and addressing consequent issues relating to this. As hazardous wastes pose such a potential threat to human health and the environment, one of the guiding principles of the Basel Convention is that to minimize the threat, hazardous wastes (ex: plastic waste, chemical waste, etc.) should be dealt with as close to where they are produced as possible. Therefore, under the Convention, trans-boundary movements of hazardous wastes or other wastes can take place only upon prior written notification by the State of export to the competent authorities of the States of import and transit (where appropriate). Each shipment of hazardous waste or other waste must be accompanied by a movement document from the point at which a transboundary movement begins to the point of disposal. Hazardous waste shipments made without such documents are illegal. Also, there are outright bans on the export of these wastes to certain countries. Trans-boundary movements can take place, however, if the state of export does not have the capability of managing or disposing of the hazardous waste in an environmentally sound manner. This report is an attempt to assess the current country situation to advocate policy for implementing Basel Amendment to stop trans-boundary movement of hazardous plastic waste.

The southern boundary of Bangladesh is the Bay of Bengal and it shares more than 4000 km of border with India[1], which is naturally our largest trade partner. In the extreme southeast Bangladesh's neighbor is Myanmar. Bangladesh has 5150-8046 Km of navigable waterways including 2575-3058 km cargo routes[2]. To assess the possible ways of trans-boundary movement of plastic waste all the aspects through which movement is occurring needs to be considered and for that, we need a full understanding of plastic, plastic products, and their lifecycle.

Developed countries have strict rules and regulations to manage their plastic waste. On the other hand, a developing country like Bangladesh doesn't have such kind of adequate rules and policies for the management of regular and imported plastic waste. However, Bangladesh has already developed a legal framework for controlling the transboundary movement of plastic waste. The Import Policy 2015-2018 has prohibited the importation of any kind of waste into Bangladesh. Bangladesh is also a signatory to the Basel Convention that

[1] https://www.env.go.jp/en/recycle/asian_net/Annual_Workshops/2007_PDF/Presentations/S2.03_Bangladesh_Country_paper-.pdf

[2] https://www.nationsencyclopedia.com/Asia-and-Oceania/Bangladesh-TRANSPORTATION.html

has restricted the export of waste, and hazardous and plastic waste. However, illegal trading of plastic waste is occurring and mainly due to avoiding external costs raised from the management of plastic waste in developed countries, and also to gain economic benefit by the importer of developing countries.

This study is an exclusive desk assessment done by Environment and Social Development Organization (ESDO) in light of GAIA- ESDO partnership under the GAIA Plastic Waste Policy which have the primary objective to raise public voice to stop transboundary movement of hazardous plastic waste and convene advocacy with government agencies and regulators to push forward policy decisions.

BACKGROUND

WHAT IS PLASTIC?

Plastic waste means the accumulation of plastic items (e.g.: plastic containers and significantly more) in the Earth's environment. Plastic is made from synthetic and semi-synthetic materials. The term “plastic” includes materials composed of various elements such as carbon, hydrogen, oxygen, nitrogen, chlorine, and sulfur. Plastics have a high molecular weight which means in a plastic product some polymers have molecules that contain thousands of atom bonds together (Plastics Industry Producer Statistics Group). Polymers can be constructed by one or several different types of monomers, and different types of polymers can also be blended, to obtain the desired material properties. At present, the vast majority of monomers are produced from petroleum (crude oil/mineral oil) and are therefore non-renewable. Around 4% of the world’s oil consumption is used as raw material in plastic production, and a similar amount is used as energy manufacturing process (Markus Klar, 2014).

Plastics are usually categorized into *thermoplastics* - which can be reshaped as they soften up without damaging the polymers when heated and *thermosetting plastics (thermosets)* - which do not soften and cannot be remolded when heated. The basic structural difference between the two types is that thermosetting plastics have cross-linked polymers, via strong so-called covalent bindings, whereas the polymers of thermoplastic are held together by weaker molecular bonds. The weak molecular bonds make thermoplastics recyclable, but at the same timeless stable when exposed to heat, oxygen, and UV light. The effects of UV light, however, can be counteracted by the addition of various additives.

WHAT IS PLASTIC POLLUTION?

Plastic contamination is the aggregation of plastic items and particles (for example plastic containers, packs, and microbeads) in the environment that antagonistically influences natural life, wildlife habitat, and people. Plastics that go about as toxins and hazardous are classified into micro-, meso, or macro debris, based on the size.

Such an extensive amount of what we consume is made of plastic, (for example, plastic bottles and food containers) as it's economical, yet long-lasting. A significant measure of plastic that isn't recycled winds up in landfills or, in developing countries like us, tossed into unregulated dump locales. Nonetheless, plastic is delayed to degrade (taking more than 400 years or more) because of its chemical structure, which imposing an enormous challenge. Plastic enters our environment, contaminating our seas and harming our ecosystem and antagonistically influencing wildlife, wildlife territory, and people in less-developed nations like Bangladesh, most plastic waste, in the long run, ends up in the sea, implying that marine creatures are particularly in danger. The truth of the matter is, we essentially can't adapt to the measure of plastic on our planet— or the sum that keeps on being produced. Therefore, our mentalities and practices towards produced plastic, plastic waste management along with its trans-boundary movement should change to guarantee a protected and sustainable future for our planet.

Treatment plants for natural waste, for example, in-vessel composters or anaerobic absorption facilities can't treat the plastics, since they either upset the treatment cycle or take too long to even biodegrading. The plastics likewise need a specific steady temperature range for a delayed period in time to breakdown. In actuality, there is significant variation in water temperatures at sea, which will influence the rate at which the plastic biodegrades. Biodegradable or compostable plastics do not adequately or fully break down at sea, or forestall unsafe micro-plastics from being delivered. Once in the sea, UV radiation and wave activity assists with fragmenting plastic into micro and nano-plastics. Nonetheless, when the plastic is lowered in profound water, where it can get canvassed in biofilm or covered in dregs (just 4%-5% of sea plastics are found on sea shores and shorelines), and the speed at which the plastic can fragment falls altogether. The term 'biodegradable plastic' is unmistakably deceptive, and positively not fasts answer for handling plastic contamination. So, it underlines that the most ideal approach to decrease plastic waste and contamination is to just cut down. All the more explicitly, we should emphasize on dispensing with the utilization of single use, unrecyclable, and not recycled plastic.

Primary Reason for Plastic Waste Pollution

- Inexpensiveness, availability and widespread uses of plastic
- Rapid Increasing urbanization and population
- Disposable mind set up of users in terms of plastic Waste
- Very low decomposition rate of plastic
- Marine Shipping and Fishing industries contribution towards plastic waste

Plastic waste Facts

- Over two million tonnes of plastic waste have been dumped in our oceans globally this year so far.
- In the North Pacific Ocean, there are six times more items of plastic debris than plankton
- Since the 1950s, 8.3 billion tonnes of plastic have been produced worldwide and of that 8.3 billion tonnes, only 9% has been recycled
- In 2017, Kenya banned the use and sale of plastic bags altogether — and many other countries are now following suit
- Worldwide, 2 million plastic bags are still being used every minute and the average time that a plastic bag is used for is only 12 minutes
- Plastic kills over 1.1 million seabirds and animals each year
- 73% of beach litter worldwide is plastic
- The average person eats 70,000 microplastics each year.
- In 2014, an estimated 15 to 51 trillion microplastic particles were floating in the world's oceans, weighing between 93,000 and 236,000 tonnes.
- 80% of the microplastics are from the land-based sources, i.e., plastic bottles and bags
- Each year, 6,40,000 tonnes of lost and abandoned fishing equipment threaten the sea life.
- 90% of the trash floating in our oceans is made of plastic, around 46,000 pieces per square mile.
- There is an island in the middle of the North Pacific Gyre, the Great Pacific Garbage Patch – which is mostly composed of plastic. It's the size of India, Europe and Mexico combined.
- World plastic production has increased exponentially from 2.1 million tonnes in 1950 to 147 million in 1993 to 406 million by 2015.
- More than 40 percent of plastic is used just once, then tossed.

Source: (Pla2) , (Pla3) *;* (10F21)*;* (How21)*;* (Wha)*;* (10S21)

CURRENT SCENARIO OF GLOBAL PLASTIC POLLUTION

In the course of recent many years, plastic creation has taken off around the world. An astonishing 1 million plastic bottles are bought each moment around the globe. If all the plastic bottles sold in 2018 were accumulated in a pile, it would be higher than the world's tallest structure, the Burj Khalifa in Dubai. A plastic bottle accompanies numerous accommodations yet the developing utilization of plastic is devastatingly affecting our current circumstance.

***Table 1: Countries with the highest mismanaged plastic waste generated by coastal populations in 2016 {Source:** (Kara Lavender Law, 2020)}*

Country	Mismanaged Plastic Waste (Mt)	Income Status	Coastal Population (million)	Per capita plastic waste generation (kg/day)	Percentage of Plastic in solid waste
Indonesia	4.28	LMC	202.49	0.68	14.0
India	3.16	LMC	201.20	0.57	9.5
United States, upper bound	1.45	HIC	117.94	2.72	13.1
Thailand	1.16	UMC	26.73	1.08	17.6
China	1.07	UMC	270.94	0.44	9.8
Philippines	1.01	LMC	92.06	0.39	10.6
Egypt, Arab Rep.	0.71	LMC	24.82	0.68	13.0
Russian Federation	0.62	UMC	10.93	1.13	14.2
United States, lower bound	0.51	HIC	117.94	2.72	13.1
Bangladesh	0.36	LMC	75.87	0.28	4.7
Oman	0.35	HIC	3.83	1.18	21.0
Malaysia	0.33	UMC	24.90	1.23	15.0
Mexico	0.27	UMC	24.48	1.20	10.9
Argentina	0.26	HIC	17.58	1.14	14.6
Peru	0.25	UMC	14.67	0.77	10.5

Mt - million metric tons
HIC - high income
UMC - upper middle income
LMC - lower middle income

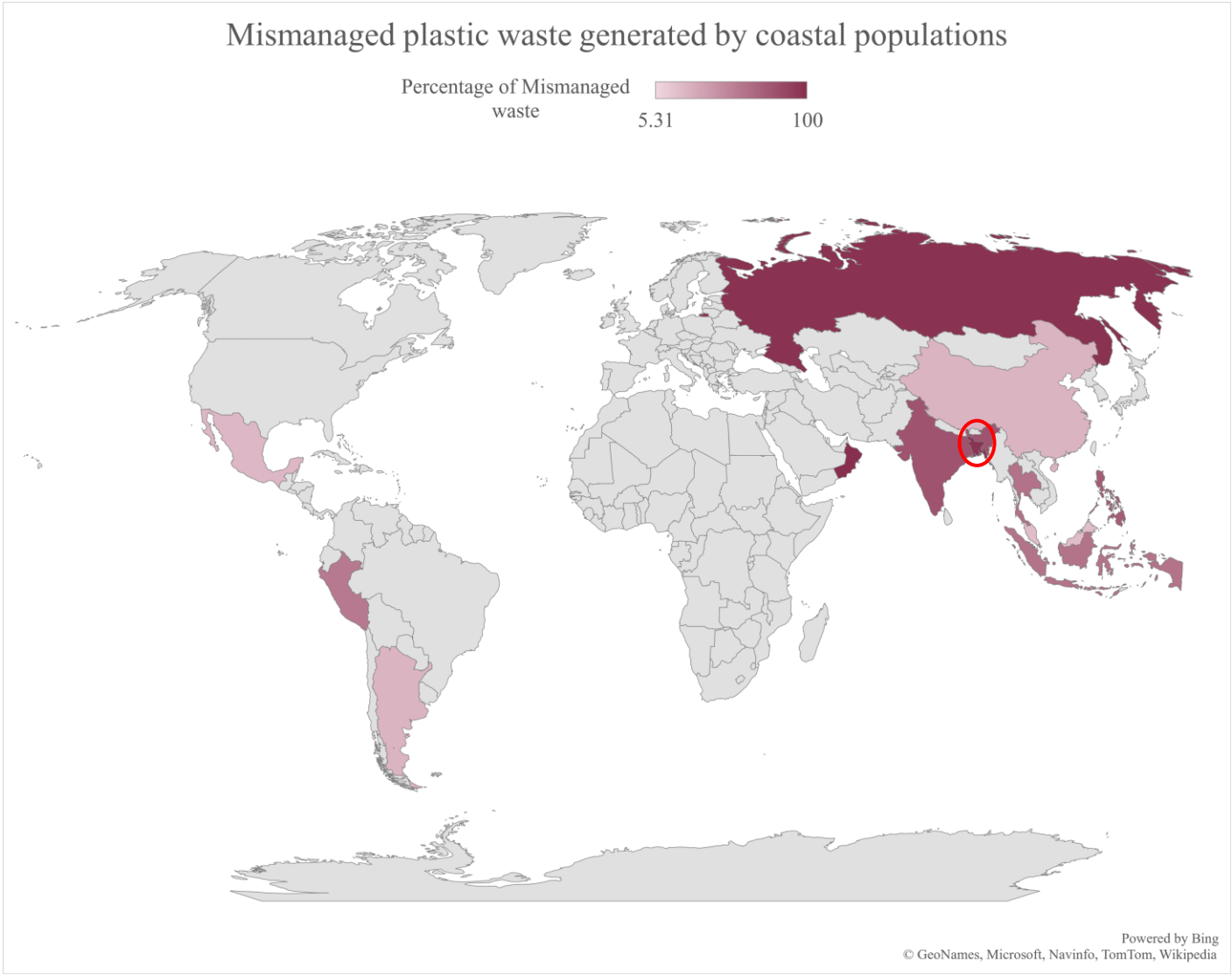


***Figure 1: Countries with the highest mismanaged plastic waste generated by coastal populations in 2016 {Source:** (Kara Lavender Law, 2020)}*

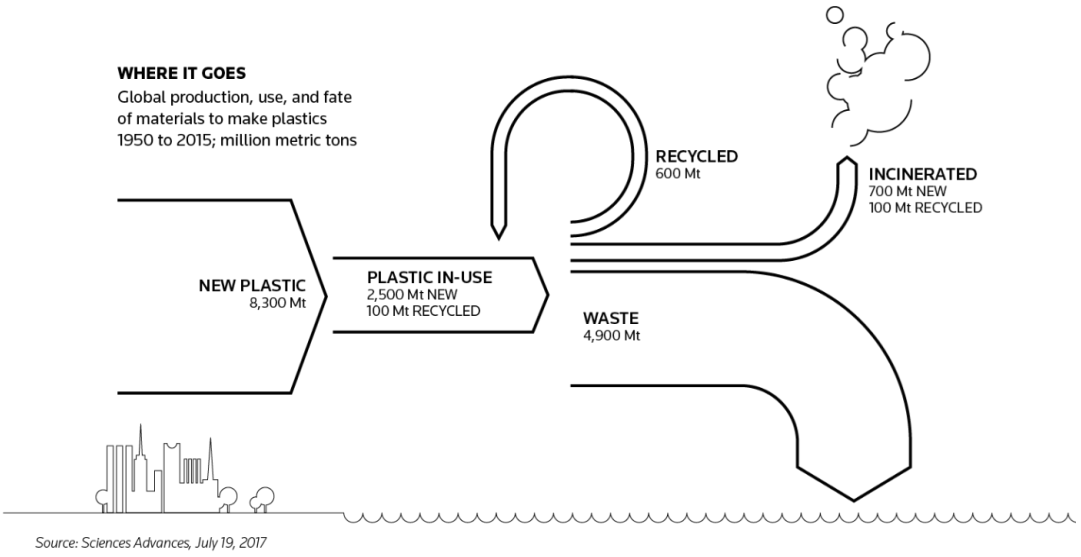


Figure 2: Global Plastic Scenario

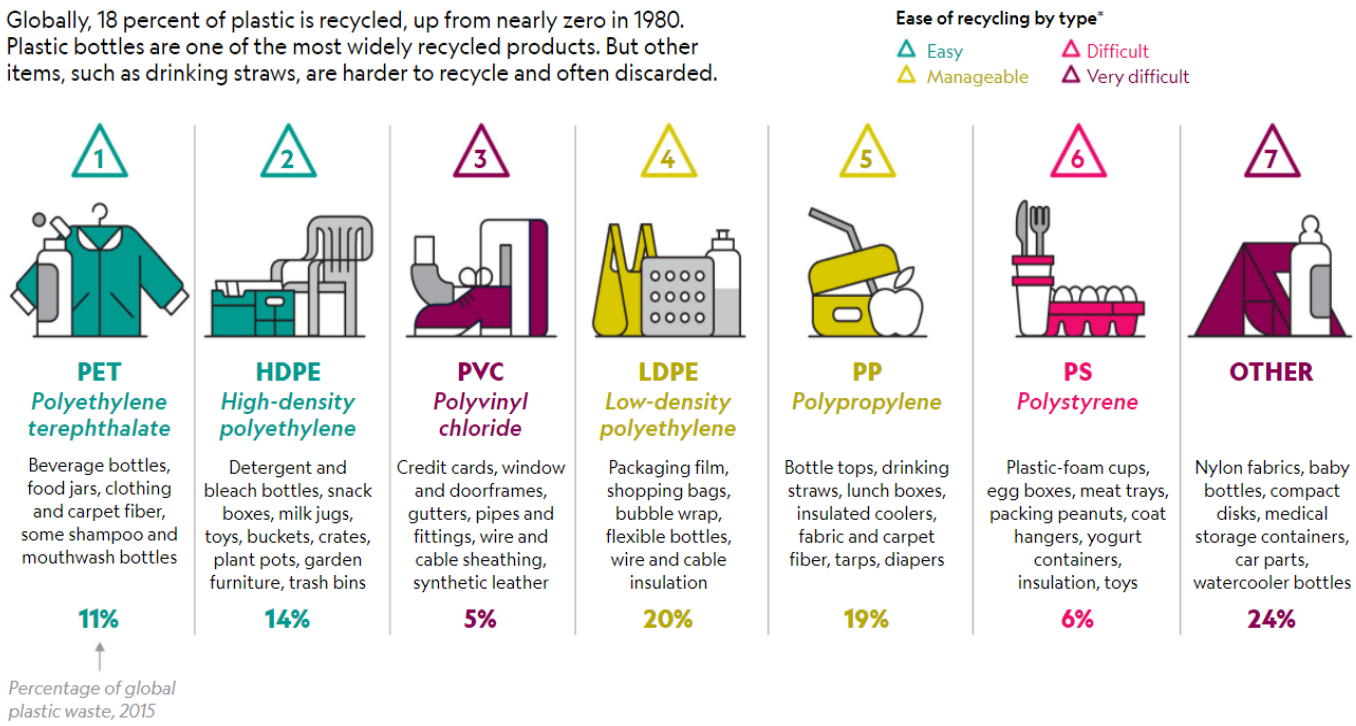


Figure 3: Plastic Recycling Scenario

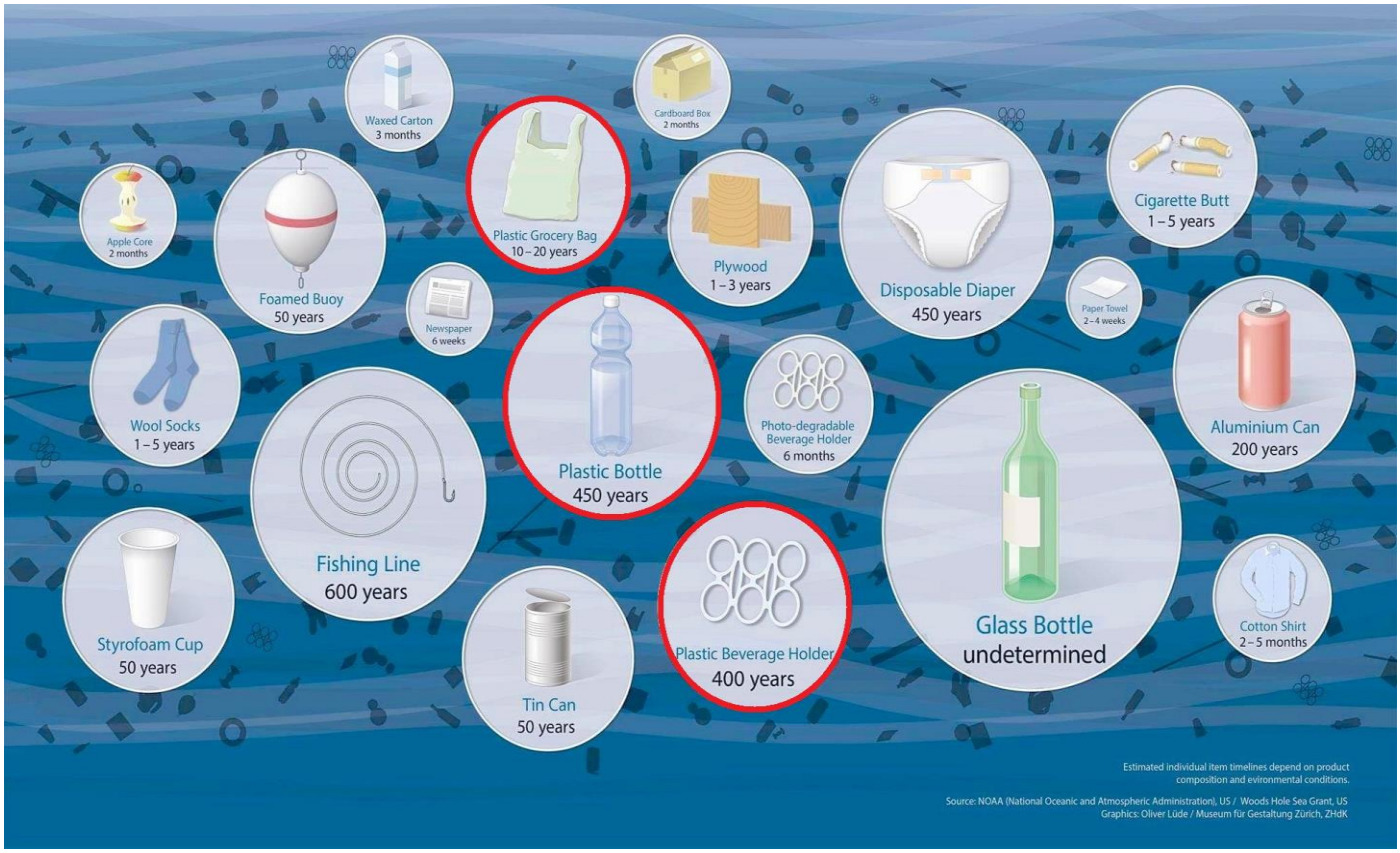


Figure 4: Estimated decomposition rates of common marine debris item

Bangladesh, formally the People's Republic of Bangladesh, is a country located in South Asia. It is the eighth-most populated country on the planet, with a populace surpassing 164 million people. As far as landmass, Bangladesh positions 92nd, spreading over 148,460 square kilometers (57,320 sq mi)[3], making it quite possibly the most thickly populated nations on the planet. Bangladesh shares land borders with India toward the west, north, and east, Myanmar toward the southeast, and the Bay of Bengal toward the south. It is barely isolated from Nepal and Bhutan by the Siliguri Corridor, and from China by Sikkim, in the north, individually. Dhaka, the capital and biggest city, is the country's financial, political and social center (Ban).

Demographic, economic, market factors, urbanization and powers of globalization all have impact in waste generation rate and furthermore how are they managed – from practice of segregation at source, by any means, to sorting, assortment, transportation and disposal. The waste generation volume relies upon demographic and economic factors significantly. Population size and waste generation rate is firmly connected with level of financial turn of events, estimated by per capita income.

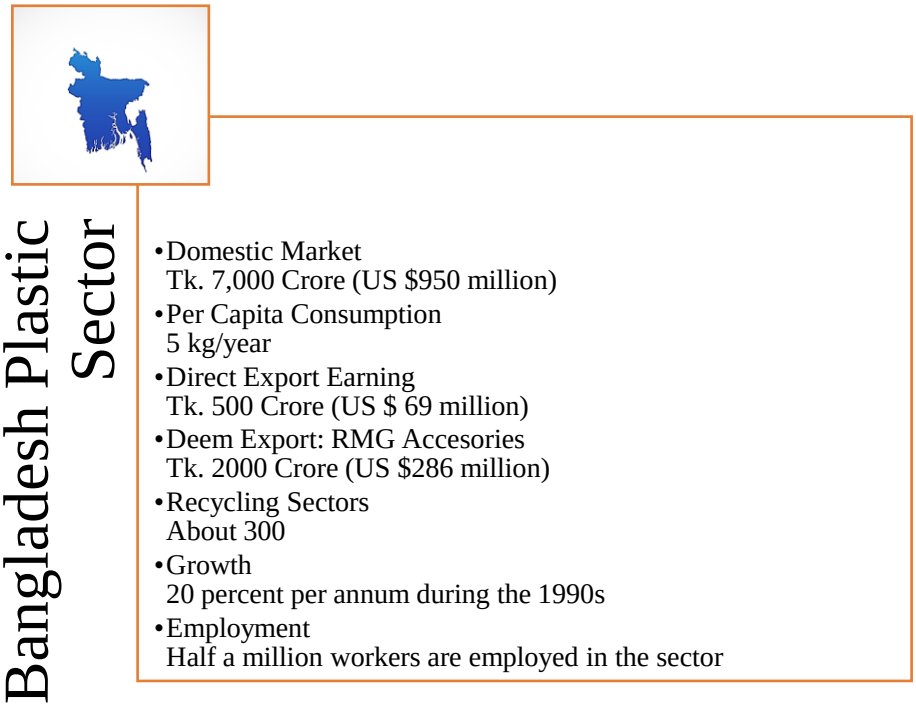
As a country at beginning phase of development, Bangladesh, being one of the populated nations of Asia and the Pacific, throughout quick financial development that is changing its well established provincial rural agricultural economy into an urban-industrial economy, is assailed with overwhelming nature of the environmental problems of all kinds. Of these issues most noticeable one is waste, especially in its metropolitan environment.

Figure 5: Map of Bangladesh

[3] https://en.wikipedia.org/wiki/Bangladesh

Bangladesh isn't safe from plastic peril. In light of the steadily expanding utilization of plastic in various businesses, particularly bundling, Bangladesh stays one of the top plastic-contaminated nations. Pictures of clogged up waterways because of the erratic removal of plastic bottles mostly portray the gravity of the issue.

In Bangladesh, 3,000 tonnes of plastic waste is generated every day. In total generated waste plastic comprises 8% which is numerical, that is 800,000 tonnes. Some 14 million pieces of polythene bags are used every day in Dhaka city. Those often end up in rivers and the ocean, posing a hazard to sea life. About 73,000 tonnes of plastic waste end up in the sea every day through the Padma, Jamuna, and Meghna rivers. In Old Dhaka alone, around 250 tonnes of non-recyclable products, such as straws and plastic cutlery, are sold every month. The growth in bio-waste production is 5.2% while that in plastic waste is 7.5% (Islam, 2019). In 2017, a study was reported by Environment and Social Development Organization-ESDO, showing that most of the used plastic and polythene end up in landfills and water bodies across the country. There is no process to collect or recycle them. However, despite being aware of the detrimental effects of plastic, 61% of the people in the country use polythene bags. There are over 100 factories in different areas of Dhaka, including Lalbagh, Hazaribagh and Sadarghat, and Chattogram that produce polythene bags (Islam, 2019).



*Source: UN-ESCAP Report-2009

According to a recent study conducted by ESDO, it was found that at the end of the very first month of the official lockdown to prevent COVID-19 spread in Bangladesh, about 14500 tons of hazardous plastic waste has emerged from the dramatically increased use of single-use surgical face masks, hand gloves, hand sanitizers and polythene bags in communities and health care facilities. About 11.2% of this waste comes from the use of surgical face masks, 21.5% from polythene made normal hand gloves, 20% from surgical hand gloves, and 40.9% from the single-use polythene shopping bags used for carrying food items, and 6.4% from empty containers of hand sanitizers (Study, 2020).

Overall Discarded Single Used Plastic

- Total discarded single-use plastic (82,824 tons annually) comes solely from food and personal care packaging (food wrappers and sachets)
- In 2014, the number of consumed plastic polybags were recorded as 10 million
- 14 million pieces of polythene bags are used every day in Dhaka city
- 33% of the total generated single-use plastic wastes are sachets

Discarded Plastic During COVID-19 Situation

- About 11.2% of plastic waste apparently coming from the use of surgical face masks
- 21.5% from polythene made normal hand gloves
- 20% from surgical hand gloves
- 40.9% from the single use polythene shopping bags used for carrying food items
- 6.4% from empty containers of hand sanitizers

Source: (KG, 2016); (Markus Klar, 2014); (ESDO, 2020); (Islam, 2019)

In Bangladesh, food and personal care packaging are the largest contributor to single-use plastic waste. Sachets are also an emerging source of single-use plastic waste, which are used mostly for packaging food items and personal care products in small quantities such as – ketchup, coffee sachet, mini packs, and tetra packs of shampoo, conditioner, toothpaste, etc. The sachet is because of its growing popularity in both urban and rural areas. Sachets are completely non–recyclable and hence are considered as major sources of single-use plastic pollution around the globe.

Annual Generation of Major Single Use Plastic Product in Bangladesh (in tonnes)

Source: (ESDO, 2019)

It can also be deduced that plastic wastes are mostly generated in urban areas of the country with a certain portion from rural usage. Our previous study reveals that, of the total generated annual plastic waste, around 78% (68136 tons) is generated from urban areas whereas the rest of the 22% (18,571 tons) emerges from usage in rural areas.

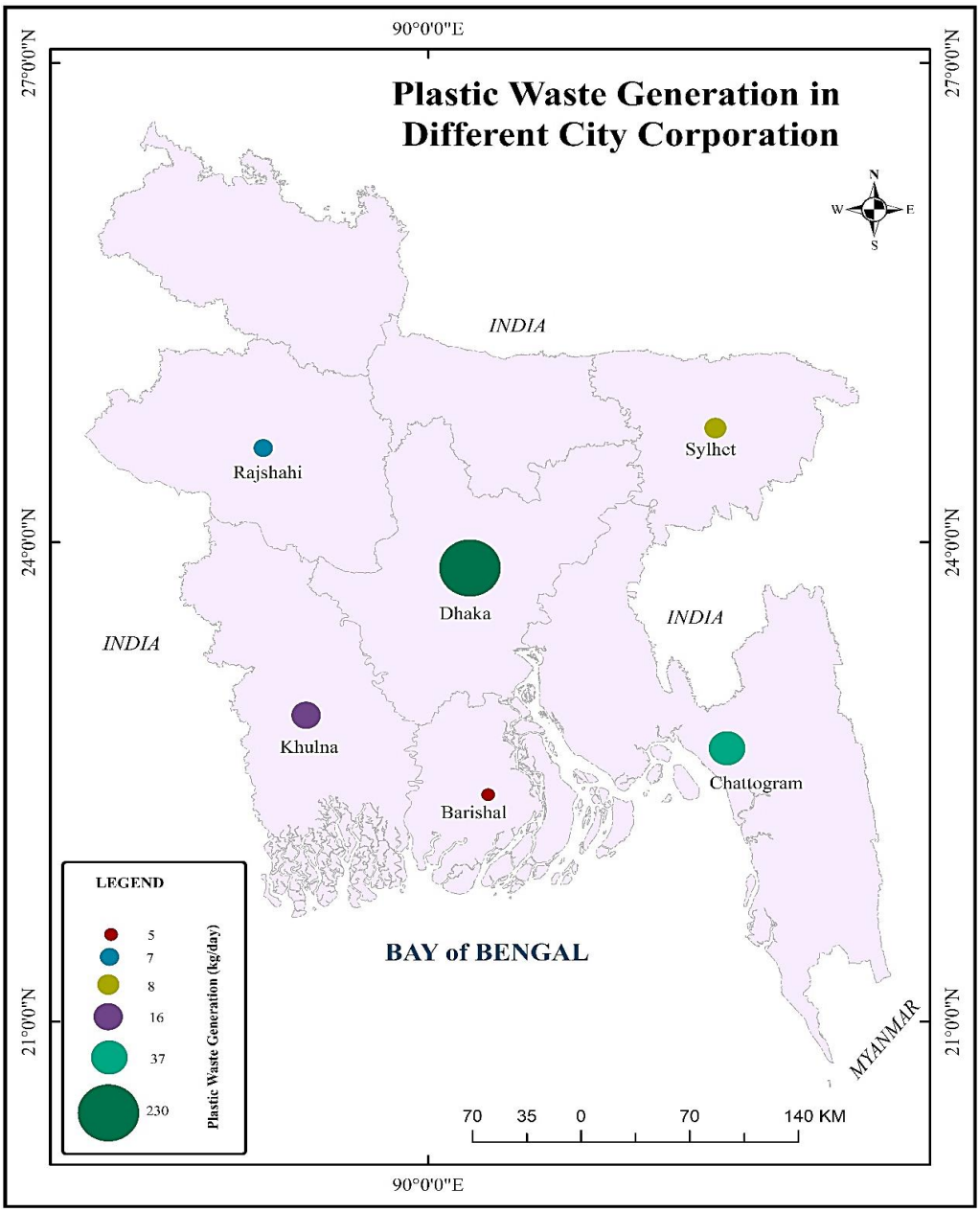


Figure 6: Plastic Waste Generation in Different City Corporations (kg/day) ***[Source:*** *(M. Alamgir, 2007)* ***]***

Table 2: Plastic Products and its Applications in Bangladesh

Plastic Products and its Applications in Bangladesh	
Application	**Products**
Accessories for RMG	Packaging material, bags, hanger etc.
Household, Tableware & Kitchenware	Bucket, jug, plate, glass, containers etc.
Furniture ware	Chair, Table etc.
Packaging	All kinds of food and non-food packaging
Healthcare	Toiletries (Soap case, tooth brush), Medical Accessories (blood bag, saline bag, injection, medicine container)
Building and construction	Plastic pipe, door, toilet flush etc.
Electrical and Electronic Equipment	Electrical cables and wires, switches, regulator, computer accessories, telecommunication equipment etc.
Agricultural products	Plastic pipes for irrigation, and plastic films for shedding crops
Industrial Applications	Engineering parts

Sadly, in Bangladesh, no different method exists for plastic waste collection and management. Plastic waste management is blended with solid waste administration here as there is no current practice of waste segregation at initial stage. Moreover, to make the circumstance troublesome, not all the created waste gets collected. Among two systems, in the conventional 'Formal System', the municipalities/city corporations are responsible for Solid Waste Management (SWM) whereas the 'Informal System' are represented by huge informal labor force involved in the solid waste recycling trade chain. In recycling sector, there are two groups known as formal and informal. Where the formal sector is industrialized and financially backed by government agencies, the informal groups, which act as front-line service provider and predominantly managed by the poor and less privileged people, stay out of the state control along with maintaining active links with the formal ones.

Bangladesh Plastic Waste Disposal Scenario

- 0.79 MMT plastics are openly dumped per year in the land without further processing
- 0.12–0.31 MMT per year finds their way in the sea
- 50% of the plastics is collected through the waste pickers
- 37% of Plastic waste in Dhaka city remains sprinkled at the open places, in drains or in the roadsides
- 36% of plastic waste is recycled in informal sector
- 39% of plastic waste dumped in landfills
- 25% of plastic waste is leaked to environment

*Source: (Castaldi, 2014); (Jenna R. Jambeck, 2015); (Tania, 2014)

Table 3:List of Some Plastic Product Manufacturing Companies in Dhaka, Bangladesh

Plastic Product Manufacturing Companies in Dhaka, Bangladesh		
Company Name	**Company Type**	**Products**
RFL plastic	Private Limited Company Independent	Plastic Housewares, Plastic Furniture Plastic Crate, Plastic Packaging
Aziz Pipes Limited	Public Limited Company Independent	PVC Pipes
Durable Plastic Ltd.	Private Limited Company Independent	Plastic Household products, Cloth Hanger,
National Polymer Industries Ltd.	Private Limited Company Independent	uPVC, PP-R, CPVC pipes and fittings, PVC Doors, Sheet, Ceiling also Plastic Household and Furniture products
Premiaflex Plastics Limited	Private Limited Company Independent	Packaging Materials
Sinobangla Industries Limited	Public Limited Company Independent	Plastic (resins, pellets, etc.)
Bengal Polymer Wares Limited	Private Limited Company Independent	Plastic Furniture, Plastic Metal Frame Furniture, Plastic House Wares, Plastic Pallet (Material Storage, Handling & Transportation), Plastic Crates (Material Carrying, Transportation & Storage), Paint Container & Pail.
A-One Polymer Limited	Private Limited Company Independent	PVC Pipes
Banga Plastic International Limited	Private Limited Company Independent	Plastic Cloth Hanger
Gazi Tanks	Sole Proprietorship Independent	Tank, Bucket, Bin, Plastic pallet
Hatim Polymer Limited	Private Limited Company Independent	uPVC, PP-R, CPVC pipes and fittings
Silkways Card and Printing Ltd.	Private Limited Company Independent	Debit/Credit Cards, SIM card, scratch cards, Health card etc.
Akij Plastics Limited	Private Limited Company Independent	Plastic Furniture, Plastic Home ware, Plastic Kitchenware
Charming Trim & Packaging (Bd) Ltd.	Private Limited Company Independent	Brand Labels, tags, packaging
Meghna Pvc Limited	Private Limited Company Independent	Packaging
Associate Tubes Limited	Private Limited Company Independent	Plastic Tube
Sun Yad Poly Vinyl Industries Ltd.	Private Limited Company Independent	Packaging & Container
Jmi Hospital Requite Manufacturing Ltd.	Private Limited Company Independent	Plastic Component for medical Application
Gazi Pipes	Independent	uPVC pipes
Polycon Limited	Independent	Packaging
Bengal Group of Industries	Private Limited Company Independent	Plastic garment hangers, Plastic Furnitures, Plastic Homeware, Plastic Kitchenware, Plastic Industrial Organizer, Packaging, uPVC pipes & fittings

Rexine View	Sole Proprietorship Independent	pu rexine, pvc rexine

Plastic packaging contains many different chemicals with endocrine-disrupting properties, including solvents, UV stabilizers, phthalates, antimicrobials, and industrial additives—which harm human health and the environment. In Bangladesh, sachets are mainly used to package small amounts of liquid, jelly, cosmetics, pharmaceuticals, food, household chemicals, salt, sugar, grain, seeds, spices, gels, lotions, creams, shampoos, toothpaste, conditioners, among other items. According to a recent ESDO study report, prime SUP generating Products and their firms has been identified and stated that among the national and multinational companies, PRAN Food Limited, Abdul Monem Limited, and Bombay Sweets Company Limited produce 67% of the total plastics. This study found that PRAN Food produces 27% of total single-use plastic waste while Abdul Monem, with its Igloo brand ice cream 20%; Bombay Sweets with its Potato Crackers 10%; while multinational company Nomad Foods Limited, with its brand iglo, produces 9% of the total waste.

Table 4: Prime SUP generating Products and their firms in Bangladesh

Firm Name	*Brand Name*	*Weight (Kg)*
PRAN Food Limited	Packed food products	27.5
Abdul Monem Limited	Igloo	20.8
Bombay Sweets Company Limited	Potato Crackers	10.5
Nomad Food Limited	Iglo	9.5
Dhaka Ice Cream Industries Limited	Polar Ice-cream	7
Olympic Industries Ltd	Energy Plus	5
Acme	Acme Tea	3
British American Tobacco	Benson & Hedges	2.5
Perfetti Van Melle Bangladesh	Centrefruit	2.2
Bashundhara Paper Mills Ltd	Bashundhara Paper Mills Ltd	2.1
Coca-Cola Company	Kinley	1.9
Uniliver	Sunsilk	1.5
Quasem Food Products Limited	Sun Chips	1.2
Ifad Multi Products Limited	IFAD	1.2
Other		1.6
Total		97.5

The proper way of managing plastic waste from the current perspective would be recycling. Plastic Recycling is the process of recovering scrap, waste, or used plastic and reprocessing the material into useful commodities following a distinct procedure. According to ESDO study report, based upon the type of activities they perform, four major types of plastic recycling factories are currently operational in Bangladesh, and from the other districts; plastics reach Dhaka mainly by riverways. In sadrghat, the scrap agents collect plastic that comes from different places of Bangladesh.

Table 5: Categories of Plastic Recycling Factories in Bangladesh

Types of Plastic Recycling Factories in Bangladesh	
Collection and Sorting factories	Street children and "tokai"s are primary waste collectors and Dhaka City Corporation (DCC) is the secondary waste collector of plastic waste. In Bangladesh sorting/gradation process is done manually by the types and color without using any machine.
Cutting and Shredding factories	The sorted plastic wastes are sent to the shredder to cut into flakes.
Washing and Drying factories	After sorting, recyclable plastic chips are washed and dried.
Recycling factories	Recycling is the last phase. The plastic flakes are put into an extruder where it (extruder) melts the flakes. The melted flakes then extruded through a small die hole. After melting the reprocessed plastics, the liquid mixture is shot into molds or extruded to make a new plastic product.

BASEL CONVENTION

The Basel Convention is the broadest and most significant international treaty on hazardous and other wastes. It regulates the international trade in hazardous waste and aims to minimize their generation and trans-boundary movement. Between 1970 and 1980, worldwide concern was the trans-boundary movement of waste and hazardous waste. There was civil society worry that many developed nations were unloading their wastage in the least developed nations and generally this was "harmful" waste. It was harming human wellbeing and individuals were suffering from numerous infections. A few nations exploited the absence of international law and guidelines. To control the development of waste and perilous waste, delegates from various nations and common society agents had a few meetings in Basel, Rotterdam, and Stockholm to define laws and guidelines regarding the matter. At last, on March 22, 1989, they adopted a guideline named 'BASEL Convention' which came into power in May 1992. As of not long ago, around 170 nations/parties including Bangladesh have ratified the convention. On May 10, 2019, following fourteen days of dealings, about 1400 delegates consented to incorporate plastic waste into Basel Convention and consented to build up a legitimate system. Under the system they concurred that any bringing in nation accepting waste reserve the right to refuse whenever discovered mis-announcement and resistance and exporting nation would be bound to reclaim the waste back (Ahmed, 2020).

Bangladesh, being a signatory, needs to implement Basel Amendments to manage the movements of hazardous plastic waste. The Basel Convention is the broadest and most noteworthy universal settlement on hazardous and other wastes. It regulates the universal exchange of dangerous waste and aims to minimize their generation and Trans-boundary development. Bangladesh has joined the Basel convention on April 01, 1993. Under the system they concurred that any bringing in nation accepting waste reserve the right to refuse whenever discovered mis-announcement and resistance and exporting nation would be bound to reclaim the waste back (Ahmed, 2020).

METHODOLOGY

The current study was carried out as a desk study. The literature review was designed primarily as a descriptive study to provide baseline information on the existing status of transboundary movement of hazardous plastic waste. This desk review was carried out to assess possible reasons of this transboundary movement within the study area and exclusively studied the current scenario from various surveys and study reports done by ESDO and also acknowledges input from secondary sources cited in the reference.

The initial review was expanded relevant terms and included the following websites and sources - Department of Environment, Ministry of Environment, Forest, and Climate Change, National Geographic, The Guardian, Goggle Scholar, United Nations Environment Programme and local media releases - using an advanced search by country, with key words and filters for the evaluations, most relevant to least relevant, special evaluations, and other ESDO supported study/documents.

OBJECTIVE OF THE STUDY

The primary objective of the study were the followings:

- Assess the current situation of transboundary movement of hazardous plastic waste
- Assess the possible ways in which transboundary movement may occur
- Review country's existing laws to signify the proper importance of implementing the Basel Amendment

Bangladesh, formally the People's Republic of Bangladesh, is the eighth-most populated country on the planet. As far as landmass, Bangladesh is positions 92nd. As a country at the beginning phase of development, Bangladesh, being one of the populated nations of Asia and the Pacific, throughout quick financial development that is changing its well established provincial rural agricultural economy into an urban-industrial economy, is assailed with overwhelming nature of the environmental problems of all kinds. Of these issues, the most noticeable one is waste, especially in its metropolitan environment.

Figure 7: Bangladesh Plastic Scenario at a Glance

*Source: (KG, 2016); (Markus Klar, 2014); (ESDO, 2020); (Islam, 2019)

It can be deduced that Plastic waste production per day is 3000 tonnes but around 73000 tonnes of plastic waste is ending up in sea/day through the Padma, Jamuna and Meghna rivers. In addition to our domestic waste, plastic waste from India, Nepal and China flowing down the Ganges, Yamuna and Brahmaputra end up in our waterbodies, including rivers and canals. Waste is also depositing to Bay of Bengal From Mayanmar through Naf River. So, there is a huge amount of transboundary movement happening through the waterways which can be both intentional and unintentional (illegal waste trading).

To assess the practicable process of transboundary movement of plastic waste around Bangladesh, we need to consider all possible ways by which plastics are getting into water bodies and air in the first place. Hence, to assess the process of transboundary movement of plastic waste, let us consider the lifecycle of plastic product.

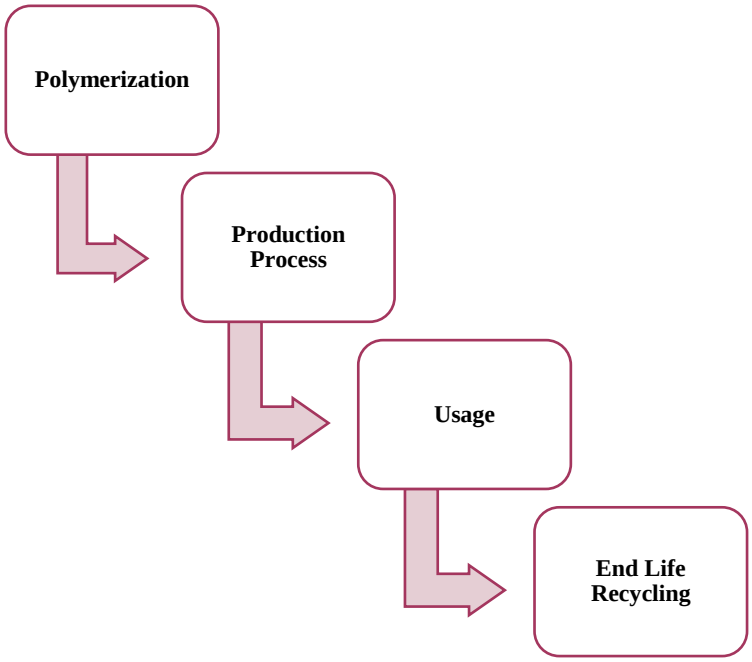


Figure 8: Life Cycle of Plastic Products

Table 6: Possible ways of trans-boundary movement of Plastic Waste throughout its life Cycle

Process	Probable Plastic waste	Possible Reasons of Trans-boundary Movement	Possible Mode of Movement
Polymerization			
Production process			
– *Extrusion* – *Calendaring* – *Film Blowing*	Plastic Pellets, Granules, powder	Mismanagement, Trading	Land, Air & Water
– *Molding* – *Casting* – *Thermoforming*	Faulty Plastic products	Mismanagement, Waste Trading	Mostly Water & Land
Usage	Used Plastic products	Improper Dumping, Mismanagement, Waste Trading (Both legal and illegal)	Mostly Water, Air (microbeads)
Recycling	Plastic Flakes	Mismanagement, Trading	Land, Air & Water

LITTERING

Littering is one of the biggest ways that plastic ends up in the ocean. When one person does it, it may not seem like a big deal. However, just one piece of plastic can harm sea life and disrupt ecosystems. On our beaches in Bangladesh, which is one of the most common places for initiating transboundary movement of plastic waste, littering is a common practice. It all sums up and causes marine pollution and clogging drain ways. Littering along the street, in the city, or by the bins, poisonous materials or synthetic substances in the litter can be blown or washed into streams, forest, lakes, and seas, and, gradually leading to polluting streams, soil, or aquatic conditions. Based on recent data, 7 billion tons of debris enter the world's oceans annually and most of it is long-lasting plastic (2014).

In 2015, Jenna Jambeck, a University of Georgia engineering professor, caught everyone's attention with a rough estimate: between 5.3 million and 14 million tons each year just from coastal regions. Most of it isn't thrown off ships, according to her, but is dumped carelessly on land or in rivers, mostly in Asia (PARKER, 2018). Inconsiderateness has bred a culture of constant littering. Carelessness has made individuals toss the junk in anyplace without considering the consequences of their activities. Numerous individuals don't understand or disparage the negative effects of littering on the climate. Individuals accept that their activities won't hurt society all in all. Thus, it is entirely expected to see individuals tossing wrappers, cigarette butts, and other junk in open zones. Littering in open space is causing plastic waste to washed ways through rains and winds towards our drainage and water bodies which is finally settling the ocean via streams. Millions of carelessly discarded plastic bags choke the sewers of Bangladesh's capital, while the canals that once provided natural drainage have been encroached upon.

Marine litter reaches the ocean from the land through river runoff, drainage system, wind action, and intentional or unintentional discharge of materials in the sea due to human activities. A total of 6,705 pieces of waste products were found on an 18.5km stretch of the four sea beaches – Laboni and Inani in Cox's Bazar, and Ananda Bazar and Patenga in Chittagong – in Bangladesh during the survey. Among the litter, 63% were found to be plastic, 13% foamed plastic, 2% cloth, 1% glass and ceramic, 1% metal, 9% paper and cardboard, 3% rubber, 1% wood, and 7% other materials. (South Asian Seas Program (SASP)).

Figure 9: Plastic Littering

IMPROPER MANAGEMENT OF PLASTIC WASTE

Bangladesh is considered as a densely populated nation where, according to the Bangladesh Bureau of Statistics (2018), 162.7 million individuals live in a zone of 147570 square kilometers and 1,115.62 individuals live in per square kilometer (Tapos Kormoker, 2017). The metropolitan population of the nation has an upward trending growth rate. This speedy headway in urbanization, industrialization, and accordingly improved ways of living produce the bulk number of solid wastes as well as plastic wastes. Indeed, even in Dhaka, the capital city of Bangladesh practically 40% of total waste goes uncollected (Kabir, 2015) which does to dispose of more safely. Even among the collected waste, the plastic recycling industry in Bangladesh claims to be recovering about 70% of the plastic waste that is being generated in the country. Unfortunately, the remaining 30% still amounts to about 17,000 tonnes annually (Molla, 2018). A bulk of this waste gets trapped in the sewers of the major cities. Trapped in the pipes and drains, especially of densely populated capital Dhaka and the second-largest city Chittagong, this plastic waste has caused the sewerage systems to break down repeatedly. Also, to mention that Bangladesh has an annual rainfall of up to 5 meters and holds the world record for the highest rainfall in a single day (Wor) which wash away improperly manage plastic waste into streams and drain ways inducing transboundary movement of plastic wastes.

Figure 10: Current Improper Waste Management System

Due to this improper management of solid waste as well as plastic waste, our waterways are choking in plastics. Bangladesh has produced 300 million tonnes of plastic wastes between 1950 and 2015, mostly comprised of single-use plastic items. Unfortunately, at times it ends up in the river and eventually gets carried into the ocean. The once-mighty Buriganga river, which flows by Dhaka, is now one of the most polluted rivers in Bangladesh because of the rampant dumping of industrial and human waste including plastic waste. A recent study estimates that more than a quarter of all that wastes could be pouring into oceans from just 10 rivers, eight of them in Asia. The Meghna and the Brahmaputra flowing across India and Bangladesh are on the list. The Ganges, the Meghna, and the Brahmaputra produce 72,845 tonnes of plastic every year. The riverbed of Karnaphuli is covered by polythene and plastic materials and dredging is hampered due to plastic and polythene waste layers. The research conducted by BUET (Bangladesh University of Engineering and Technology) revealed that Karnaphuly's riverbed from 2 to 7 meters is covered by polythene and plastic materials. The Karnaphuli river is linked by 37 canals that dump wastes including polythene materials (Aktar, 2020). Transportation in waterways is also causing plastic pollution in the aquatic system which is one of the reasons for Trans-boundary Movements of Hazardous Plastic Wastes.

Microplastics have been found everywhere in the ocean that people have looked, from sediments on the deepest seafloor to ice floating in the Arctic—which, as it melts over the next decade, could release more than a trillion bits of plastic into the water, according to one estimate (PARKER, 2018). Additionally, many pieces of clothing made of polyester contain tiny plastic components that are added during production. When the surface of polyester clothing is rubbed, thousands of tiny fibers are released into the air as well as water prompting transboundary movement of plastic wastes.

Another reason for transboundary movement of plastic waste in Bangladesh is the transboundary river system. Bangladesh is a great delta formed by the three mighty Himalayan Rivers: the Ganges, the Brahmaputra and the Meghna. There are more than 400 rivers in Bangladesh, most of which are tributaries/distributaries of these three mighty rivers. Out of 400 rivers, 57 are trans-boundary rivers; 54 rivers enter from India and 3 rivers from Myanmar. The Ganges, the Brahmaputra and the Meghna River systems drain a total catchment area of about 1.72 million sq km through Bangladesh into the Bay of Bengal. Out of this large catchment area, only 7% lies within Bangladesh. The other co-riparian countries are India, Nepal, Bhutan and China (Jahangir, 2013). Being the lowest riparian of the Major Himalayan Rivers, Bangladesh has no control over the huge cross boundary flows of plastic waste via this water ways.

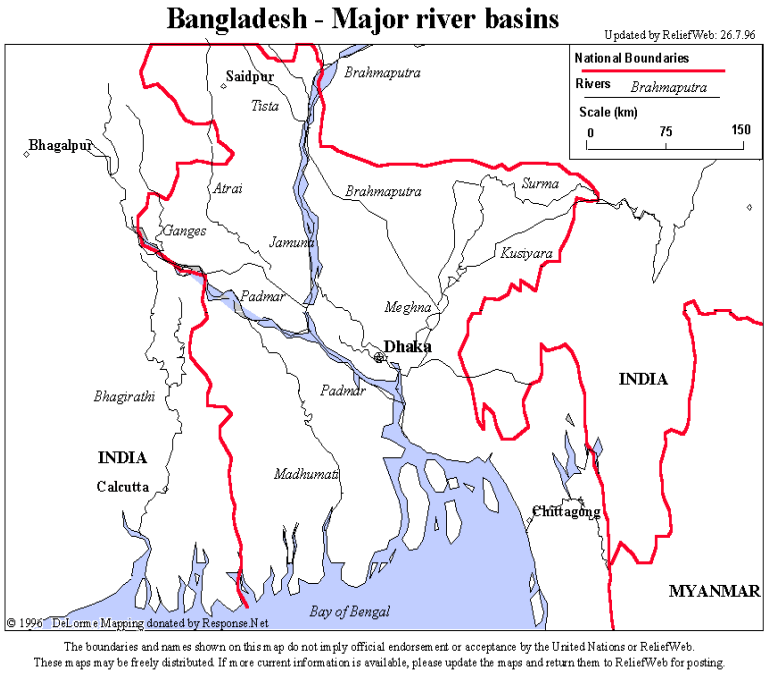


Figure 11: Major River Basins in Bangladesh

The Ganges rises from the Gangotri glacier in the Himalayan. The rivers from Nepal contribute about 71% of the dry season flows and 41% of the total annual flows of the Ganges. The Ganges Basin has an area of 1087300 sq.km. spread over India (860000 sq.km), Nepal (147480 sq.km.), China (33520 sq.km) and Bangladesh (46300 sq.km) (Jahangir, 2013).

The Brahmaputra river originates in the northern slopes of the Himalayan range and the catchment lying in China, Bhutan, India and Bangladesh. Among the total catchment area of 552,000 sq. km, Bangladesh shares only 39,100 sq. km (Jahangir, 2013).

The Barak, headstream of the Meghna rises in the hills of Manipur in India. Near the Indo-Bangladesh border, the Barak bifurcates into two: the Surma and the Kushiyara. The Surma and Kushiyara again join together near Ajmiriganj in Bangladesh. The combined flow takes the name of Meghna at this point and then flows in a south-westerly direction to meet the Padma at Chandpur. It drains the hills of Assam, Meghalaya and Tripura States in India and the north-eastern part of Bangladesh. Among the total catchment area of 82,000 sq. km, Bangladesh shares only 35,000 sq. km (Jahangir, 2013).

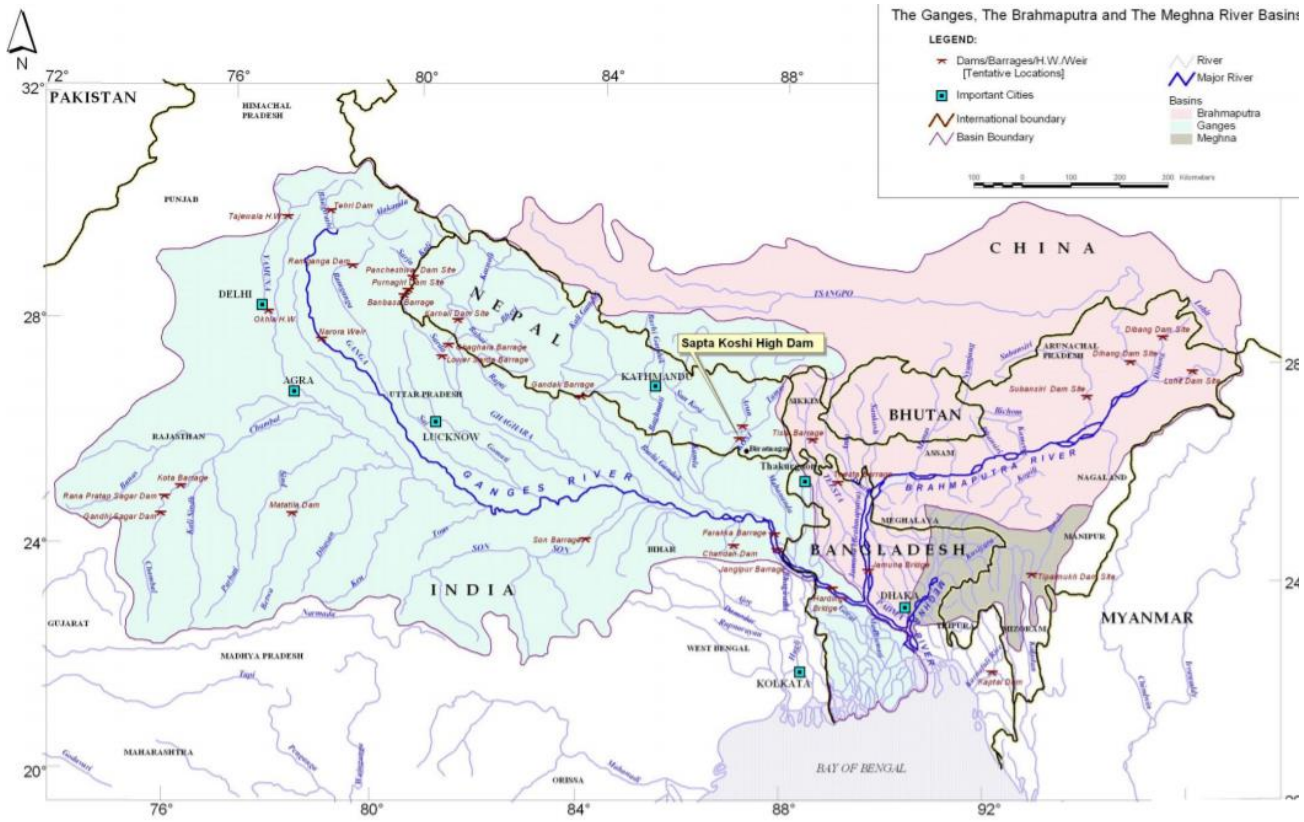


Figure 12: Transboundary River System in Bangladesh

Among the total 17,21,300 sq. km of catchment area of the three transboundary rivers, Bangladesh shares 1,20,400 sq. km of catchment area which is only 7% of the total. Therefore, it can be concluded that India, Nepal, Bhutan, Myanmar and China play a vital role in transboundary movements of hazardous plastic waste in our water system.

PLASTIC IN SEWAGE

Due to improper management and lack of reasonable consideration of people, the plastics goes down the drain and eventually it goes into our oceans which is the reason of transboundary movement of plastic wastes via waterways. Plastics from things like wet wipes, microbeads in cosmetic products and all manner of tiny plastic fragments escape to the ocean this way. If the Kalsi canal in Mirpur is visited, undoubtedly the trench will be confused with a landfill inferable from it being chock-a-block with a thick layer of plastic waste. Where the water can be seen, it gives off an impression of being dark in shading and defiled with waste. The malodor penetrates around the region making it difficult for a person to stroll without a face cover.

Figure 13: Plastic Bottles, bags, cans in sewage

POORLY REGULATED INDUSTRY

There are more than 3,000 plastic manufacturing companies in Bangladesh and 89% cent of them are small and medium enterprises creating plastic flakes, pellets and other plastic wastes while manufacturing. A World Bank study said four major rivers near Dhaka -- the Buriganga, Shitalakhya, Turag and Balu - receive 1.5 million cubic metres of waste water every day from 7,000 industrial units in surrounding areas and another 0.5 million cubic meters from other sources.

There are several plastic recycling industries located near sea port of Bay of Bengal (i.e., Chittagong, mongla, jhinaidah, shatkhira etc.) and river areas. As chips and flakes would be mandatory while recycling and crushing, a large number of debris will eventually go into the water bodies while recycling and exporting, making prominent transboundary movement of plastic waste.

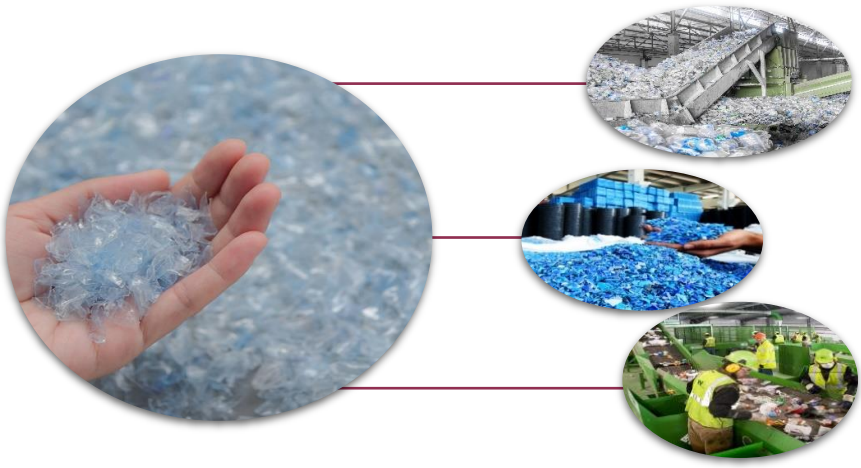


Figure 14: Recycled Plastic Flakes

Table 7: Few Plastic Recycling Industries near River making its way to Bay of Bengal

Plastic Recycling Industries Near River Area (Bay of Bengal)			
Firm Name	**Location**	**Affecting River/Sea**	**Remarks**
Dolphin Packaging	Jalpaiguri, India	Teesta	Plastic Waste Recycler
Deepak Poly Pipes	Jalpaiguri, India	Teesta	Plastic Waste Recycler
K.D Plastic Industries	Jalpaiguri, India	Teesta	Plastic Waste Recycler
Plastic Waste Management Center	Assam, India	Brahmaputra	Plastic Waste Recycler
Ammex Recycler	Mahimaganj, Bangladesh	Brahmaputra	Plastic Waste Recycler
RM PET & Plastic Recycles	Chor Shahpur, Pabna	Padma	Plastic Recycling Centre
Al Arafah Plastic Recycling	Munshiganj, Bangladesh	Meghna	Plastic Waste Recycler
Polytech Recycling Co	Khulna, Bangladesh	Padma Tributeries	Recycled Plastic Flakes Manufacturers & Exporter
N&N Plastic Recycle Industries	Khulna, Bangladesh	Padma Tributeries	Plastic Flakes Chips Producer
Polytech Recycling Co	Khulna, Bangladesh	Padma Tributeries	Recycled Plastic Flakes Manufacturers & Exporter
Faa Plastic Industry Limited (FPIL)	Chittagong, Bangladesh	Bay of Bangal	PET bottle Flakes & recycled pallet exporter
Kabir International	Chittagong, Bangladesh	Bay of Bangal	Recycled PET Flakes Manufacturers & Exporter
M/S Bismillah Trading	Chittagong, Bangladesh	Bay of Bangal	PET Bottle flakes Manufacturer
R.S.L Enterprise	Chittagong, Bangladesh	Bay of Bangal	Recycled Plastic Flakes Manufacturers
AC enterprise	Chittagong, Bangladesh	Bay of Bangal	All sort of Plastic Scrap exporter
Mars International, Inc	Kolkata, India	Hooghly River	Recycled Plastic Flakes Manufacturers
Shadab Plastic	Kolkata, India	Hooghly River	Recycled Plastic Flakes Manufacturers
Bengal Polychem Industries	Kolkata, India	Hooghly River	Recycled Plastic Flakes Manufacturers
Jas Plastic	Kolkata, India	Hooghly River	Plastic Waste Recycler
Smack Film	Kolkata, India	Hooghly River	Plastic Waste Recycler
Recyglo	Yangoon, Mayanmar	Yangoon River	Recycled Plastic Flakes Manufacturers
Mayanmar Recycles	Yangoon, Mayanmar	Yangoon River	Recycled Plastic Flakes Manufacturers

Even if plastic waste import ban is highly effective, recycling the waste within our country along with our surrounding countries can still cause significant pollution from wastewater from poorly regulated recycling operations that can be highly contaminated with chemicals and Micro and Nano plastics.

China's 2018 import ban on mixed 'recyclable' plastics snatched the veil off the global recycling system to uncover the wasteful and harmful nature of the recycling trade. Repercussions have been global. At present, plastic has no proper place to go. Two core trends emerged from China's ban:

- The majority of the plastics redirected to less-regulated countries/regions -- especially Southeast Asia, but also other areas that lack adequate restrictions to stop outsized imports, or any real capacity to manage the waste.
- Globally, total plastics exports dropped by about half from 2016 to 2018 (Anon., 2019).

Many countries around the world are currently facing huge problems with plastic waste. The developing countries in particular are thought to be in a lot of trouble with this waste. In addition to the huge amount of plastic waste they throw away, they also have to take the pressure of plastic waste from the developed world. Additionally, there has been continuous re-routing of illegal waste shipments to emerging import countries, primarily located in South and South-East Asia. With several requests from South and South East Asian countries to repatriate illegal containers of plastic waste have increased since 2018, but remain a long and challenging process. As a consequence, containers have been piling up in South-East Asian ports and sometimes re-exported illegally to neighbors in the region, transferring the burden of dealing with the illegal waste. (INTERPOL, 2020)

United States can be taken as an example which is known as the most developed country in the world. Plastic waste dumped by the Americans is shipped to various poor countries of the world including Bangladesh. A recent investigative report in Britain's influential Guardian newspaper revealed this information. Investigations by The Guardian journalists in 11 countries around the world have uncovered various secret news of this dirty trade in the United States[4].

According to The Guardian's investigation, thousands of tons of plastic waste are shipped from the United States to various poor and developing countries around the world each year. In these countries, American plastic is the destination for recycling because the cost of labor is incredibly cheap. Since the China ban, America's plastic waste has become a global hot potato, ping-ponging from country to country. The Guardian's analysis of shipping records and US Census Bureau export data has found that America is still shipping more than 1m tons a year of its plastic waste overseas, much of it to places that are already virtually drowning in it.

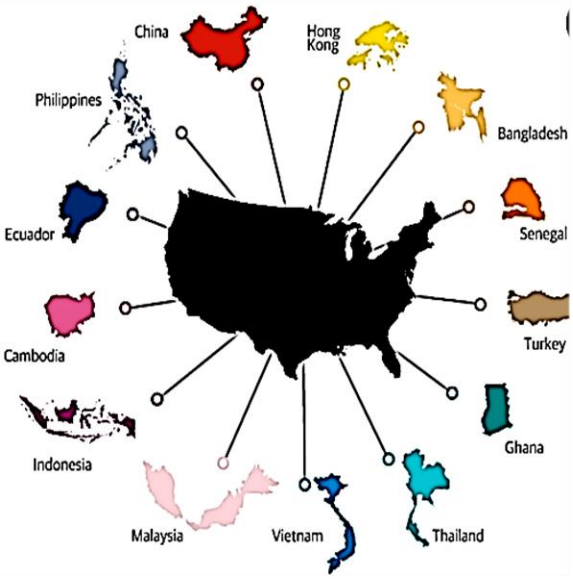
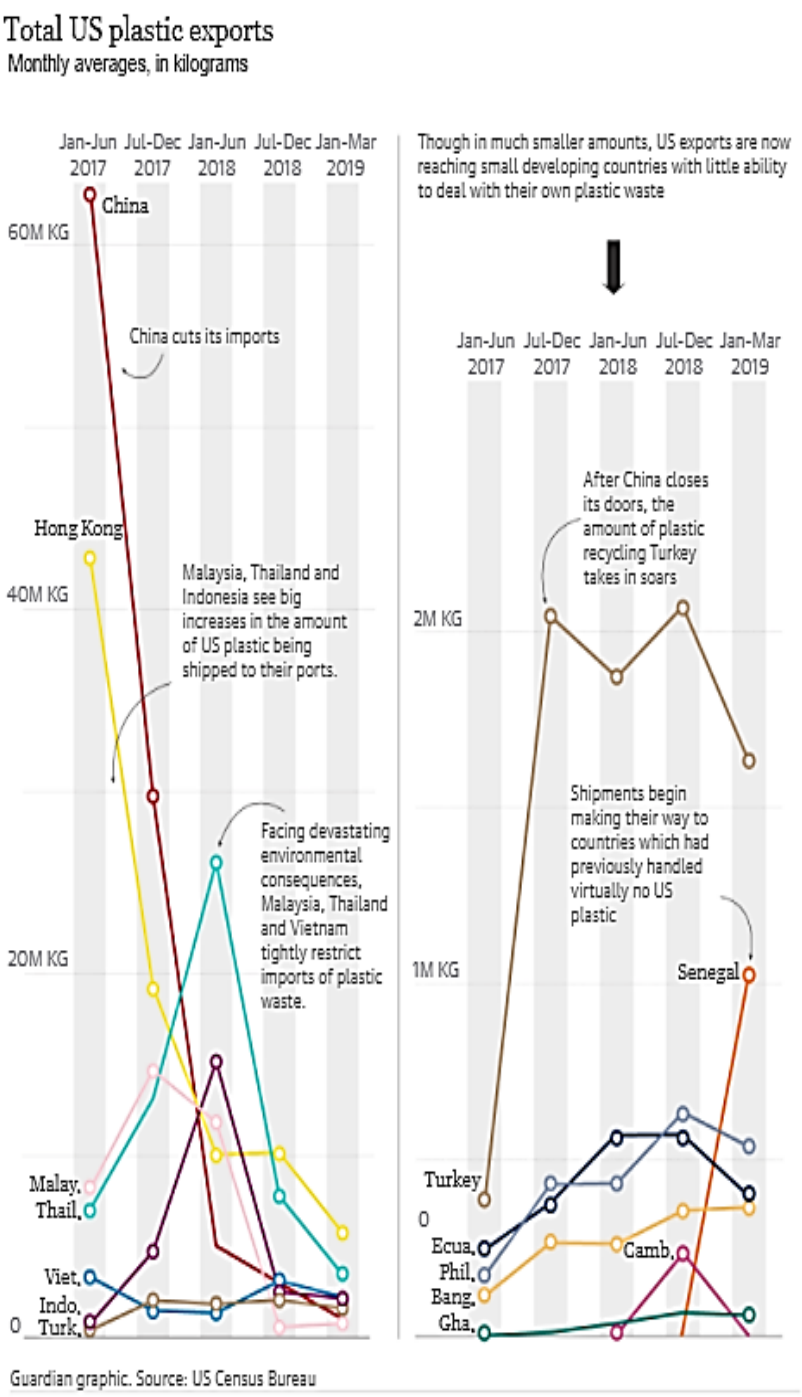


Figure 15: America Sending Plastic Waste to developing Countries (Source: The Guardian)

In 2018, an equivalent amount of 68,000 shipping containers of American plastic recycling were exported from the US to some developing countries that mismanage more than 70% of their own plastic waste. The newest hotspots for handling US plastic recycling

[4] https://www.theguardian.com/us-news/2019/jun/17/recycled-plastic-america-global-crisis#:~:text=A%20Guardian%20investigation%20has%20found,and%20the%20environment%20are%20grim.

are some of the poorest countries of this planet, including Bangladesh, Laos, Ethiopia and Senegal, offering cheap labor and limited environmental regulation (McCormick, et al., 2019).



Britain is exporting plastic waste to Bangladesh for recycling. These wastes are being collected in Kamrangirchar, Matuail and other parts of the capital. Children and adolescents are being engaged in all kinds of activities ranging from sorting and processing of collected plastic waste. In the first four months of 2018 (January-April), Britain sent 110,000 tons of plastic waste to Bangladesh[5]. Earlier, China accounted for two-thirds of Britain's plastic waste exports. But since China imposed import bans, Britain has increased exports to Bangladesh, Vietnam, Thailand and Malaysia. However, Poland and Vietnam are also going to impose restrictions on imports. A recent study found that Bangladesh, Vietnam, Thailand and Malaysia are among the worst sources of plastic pollution in the sea (Desk, 2018).

The Malaysian authorities sent back a total of 150 containers imported from 13 countries including Bangladesh as the consignment had non-recyclable plastic. Authorities discovered that compact discs (CDs) were hidden inside a container with clean recyclable scraps at the front[6]. Their press release stated that they were sending back those containers as they had been sent to Malaysia in violation of the Basel Convention on Trans-boundary Movements of Hazardous Wastes and their Disposal (Desk, 2020). The plastic waste smuggled in was falsely declared as recyclable and the 450 tonnes of the illegal plastic waste was placed in 60 containers behind legal waste (2019).

5 https://www.news24bd.tv/details/9257/%E0%A6%AC%E0%A7%8D%E0%A6%B0%E0%A6%BF%E0%A6%9F%E0%A7%87%E0%A6%A8%E0%A7%87%E0%A6%B0-%E0%A6%AA%E0%A7%8D%E0%A6%B2%E0%A6%BE%E0%A6%B8%E0%A7%8D%E0%A6%9F%E0%A6%BF%E0%A6%95-%E0%A6%AC%E0%A6%B0%E0%A7%8D%E0%A6%9C%E0%A7%8D%E0%A6%AF-%E0%A6%86%E0%A6%B8%E0%A6%9B%E0%A7%87-%E0%A6%AC%E0%A6%BE%E0%A6%82%E0%A6%B2%E0%A6%BE%E0%A6%A6%E0%A7%87%E0%A6%B6%E0%A7%87

6 https://www.thedailystar.net/environment/news/malaysia-sending-back-plastic-waste-bangladesh-1857142#:~:text=Malaysia%20is%20sending%20back%20a,consignment%20had%20non%2Drecyclable%20plastic.

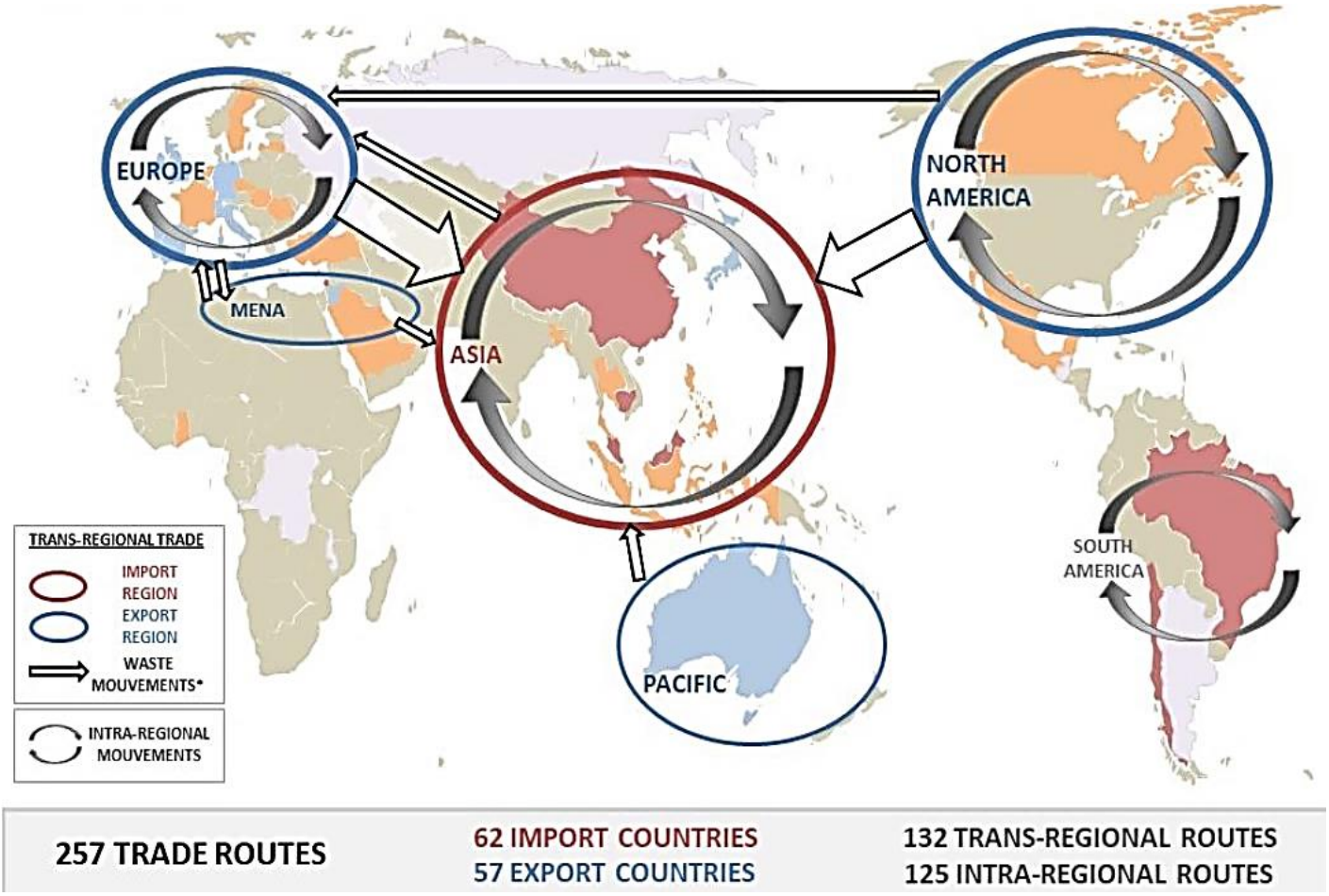


Figure 16: The global plastic waste market emerging from INTERPOL data collection on legal and illegal trade routes

[Source: (INTERPOL, 2020)**]**

By and large, explicitly in more developed nations, plastic waste is discarded responsibly and shipped off to facilities to be sorted, recycled or recovered. Nevertheless, plastic waste produced in developing countries like ours commonly winds up in open unregulated dump destinations, or is tossed into waterways and streams. Plastics from dump destinations can be passed up by winds into waterways, for example, close by streams, prior to being carried to the ocean. Another issue is the volume of plastic that is sent out to developing countries from nearby and developed countries. Recycling norms in developing nations don't come close to guidelines conveyed in the developed countries and, accordingly, releasing toxic substances of plastic material into our environment, is causing critical natural harm. Minimum 800 species overall are influenced by marine trash, and as much as 80% of that litter is plastic (UN news, 2016).

Marine creatures can either get trapped in plastic objects, (for example, the plastic rings that hold drinks jars together), ingest the plastic, or potentially be presented to plastic synthetics, which can change their physiology over the long haul. A new report found that ocean turtles that ingest only 14 bits of plastic have an expanded danger of death. Specifically, young turtles are at a higher danger since they will in general float with the very flows that pull in plastic waste, and they are less particular than their older folks about what they eat (Chris Wilcox, 2018). Plastic waste also kills up to a million seabirds a year. As with sea turtles, when seabirds ingest plastic, it takes up room in their stomachs, sometimes causing starvation. Many seabirds are found dead with their stomachs full of this waste. Scientists estimate that 60 percent of all seabird species have eaten pieces of plastic, a figure they predict will rise to 99 percent by 2050 (2018). The key microorganism affected by plastic pollution is the picoplankton Prochlorococcus, the most abundant photosynthetic organism on earth (Sasha G. Tetu, 2019). It produces 10% of the oxygen on the planet (Schafferarchive, 2015). When these microbes die, they stop producing oxygen, creating dead zones and suffocating sea life. They also stop absorbing carbon dioxide, worsening global warming.

Plastic micro-beads, which are frequently, found in toiletries, for example, facial cleansers particularly scrubs, toothpastes, and shower gels can likewise unleash destruction on marine life. Most sewage treatment facilities can't catch these beads from approaching sewage thus they are released straightforwardly into water courses. These micro-beads do not degrade over time and can transport toxic chemicals into marine organisms (McGrath, 2018). Some countries and states have loopholes that allow micro-beads made from biodegradable plastic to continue to be used (McGrath, 2018). Hence, there’s still a lot of work to be done.

Human eat plastic-contaminated seafood. Scientists have found microplastics in 114 marine species, and around one-third of these end up on our plates. Also, we consume plastic via packaging. BPAs present in many plastic objects that come in direct contact with food is metabolized in the liver to form Bisphenol A, and it remains in our body. Microplastics is being drunk via bottled water. The WHO published shocking research in 2018 that exposed the presence of microplastics in 90% of bottled water, the test of which revealed only 17 were free of plastics out of 259. We absorb plastic through our clothes, 70% of which are synthetic and worst fabric for the skin. We even breathe plastic when due to poor waste management as we incinerate unsegregated plastic waste.

Since versatile products are created each second by using different kinds of plastic raw materials, the waste generated through these products as well as their management is likely to be different. Lack of waste management of these different kinds of plastic waste may cause different kinds of adverse impacts on the environment and public health. Unfortunately, the law of Bangladesh has not yet been structurally implemented in this regard.

Under Bangladesh Environmental Conservation Act (BECA) 1994, section 6(A) has a section entailing a ban on polythene bags, which only curtails polythene bags which are less than 55micron in thickness. The High Court recently directed the authorities concerned to ban single-use plastic products in coastal areas, hotels, motels and restaurants across the country as they are health and environmental hazards. Effective implementation of this law could not be implemented fully due to lack of manpower in the Department of Environment (DOE).

Waste-related issues have been mentioned in the 'Environment Law 1995' which indicates types of industrial waste generated by industries that cause environmental pollution. In recent years, a number of initiatives have been taken in order to improve the waste management in urban areas. A national initiative called 3R (reduce, reuse and recycling) has been launched in 2010. Under this concept, a pilot project is currently being implemented in Dhaka and Chittagong cities. Besides, Bangladesh Bank has included plastic waste recycling plants under its green banking refinancing scheme. Development partners, particularly JICA and UNICEF, have been providing financial support for municipal solid waste management. Those initiatives are only starting point of a huge number of activities required to be taken over time.

According to Environmental Conservation Rules 1997, section 7, there is a procedure for issuing Environmental Clearance Certificate. For issuing certificate the industrial units and projects shall be classified into the following four categories: - (a) Green; (b) Orange – A; (c) Orange – B; and (d) Red. The concerned category units have to provide certain documents for issuing the certificate. Implementation of this law may come with solutions to the problems associated with poorly regulated industries. However, Schedule 10 of the mentioned Act deals with Standards for Waste from Industrial Units or Projects waste. Therefore, the Bangladesh govt has ample scope for implementing Basel Ban Amendment.

Bangladesh is a signatory of the Basel Convention but has not yet in the succession to sign the amendment to the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal. The Basel Ban Amendment does not create a ban of any kind for trade between Annex VII Parties. between non-Annex VII Parties (mostly developing and transition countries), or from non-Annex VII Parties to Annex VII Parties. So, according To Basel Amendments Any hazardous waste need to be managed within the country of its origin and any bringing in nation accepting waste reserve the right to refuse whenever discovered mis-announcement and resistance and exporting nation would be bound to reclaim the waste back.

Bangladesh has a Constitutional Mandate to protect the environment under **Article 18A** of the constitution which is to 'Protection and improvement of environment and biodiversity'. Also, **Article 25** of the Constitution mentioned that 'State should have respect for all international laws and legal principles.' Furthermore, **Article 32** of the constitution established the 'Right to protection of life' includes environmental protection. Therefore Bangladesh Govt. should incorporate Basel Ban Amendment within their national jurisdiction.

According to Bangladesh Import Policy Order 2015-2018; Chapter 2-Section 3; Sub Section 1 (a) “unless or otherwise specified in this order, all kinds of waste” is in list of Prohibited goods for import in annexure 1 (Part B).

Compared to neighboring countries, Bangladesh lags far behind in waste administration. Most of these nations have a well-developed legitimate framework, organization structure and mechanical base for recycling to handle solid waste produced in civil regions. Bangladesh has just begun to comprehend the antagonistic results of plastic waste but has yet to set up proper legal system and organization structure in order to manage waste. There is a total absence of a holistic approach, particularly from the sustainable waste management point of view. In contrast to other developing countries, there are no specific laws, rules and guidelines for municipal solid waste management in Bangladesh.

Bangladesh has wide experience of shared collaboration among different environmental agencies to address relevant issues. We can signify broader partnership among Asian countries to address our common problems.

According to Bangladesh National Report to the Basel Convention[7], Bangladesh has adopted legislation to implement the provisions of the Basel Convention and the legislation make provision to prevent illegal traffic of hazardous and other wastes. Restrictions have also been imposed by the Hazardous Waste and Ship Breaking Waste Management Rules 2011, promulgated under Bangladesh Environment Conservation Act, 1995 (Amendment in 2010). The legislation provides that illegal traffic is a criminal offence. Any hazardous waste or other waste seems to be illegal It will return to origin county by 30 days (Hazardous Waste and Ship Breaking Waste Management Rules 2011, rule 18; pp-15438).

There is also a national definition of waste used for the purpose of transboundary movements of waste. According to Bangladesh Environmental Conservation Act (BECA) 1995 (Amendment in 2010), "Waste" means any solid, liquid, gaseous, radioactive substance, the discharge, disposal and dumping of which may cause harmful change to the environment (Sec-2. Definitions PP 29). Bangladesh also has a national definition of hazardous wastes. According to Bangladesh Environmental Conservation Act (BECA) 1995 (Amendment in 2010), "Hazardous Waste" means any kind of waste which have own physical or chemical characteristics or waste which come contact with any other substances and capable of destroy environment by way of poisoning, microscopic organism infection, inflammation, explode, radioactive or by any detrimental activities (Sec-2. Definitions PP 28). According to Hazardous waste and Ship breaking waste management rules 2011, "Hazardous Waste" means any kind of waste which have own natural, physical, chemical, reactive, toxic, flammable, explosive or corrosive characteristics which can damage health or the environment by contacting it alone or any other waste or substance (Sec-2. Definitions (30), PP 15430).

There is partial restrictions on the export of hazardous wastes and other wastes for final disposal, and the restriction is implied on all countries, and all kind of waste is covered by the restriction.

There is total restriction on the import of hazardous wastes and other wastes for final disposal, and the restriction is implied on all countries, and all kind of waste is covered by the restriction.

There is total restriction on the import of hazardous wastes and other wastes for recovery, and the restriction is implied on all countries, and all kind of waste is covered by the restriction.

In Hazardous waste and Ship breaking waste management rules, 2011 of Bangladesh have referred to the waste list and article 6 of the Basel Convention.

Import Policy Order 2015-2018 has permitted import for six kinds (i. iron and steel waste and scrape; ii. aluminum waste and scrape; iii. callet scrape of glass; iv. copper waste and scrape; v) recovered paper and paper board waste and scrape; vi) break acrylic.) of scrape and waste (Chapter five: General Provisions for Industrial Import; clause-35, 36 & 37 pp-1352-53). According to section-6C (Restriction regarding

[7] http://ers.basel.int/ERS-Extended/FeedbackServer/fsadmin.aspx?fscontrol=respondentReport&surveyid=75&voterid=49412&readonly=1&nomenu=1

manufacture, import, stock, loading, transport of hazardous waste) of Bangladesh Environment Conservation Act, 1995 (Amendment in 2010) subject to the provision of this Act, The Government shall, for the purpose of preventing environment pollution, as per rules, control the manufacture, process, stock, loading, transport, delivery, export-import, disposal, dumping etc. of hazardous waste. It would obtain clearance from the Director General (DG), Department of Environment (DOE) prior to shipment for export. As Bangladesh has no facility/does not have the skill to dispose of Hazardous waste (final disposal), the provision of exemptions is in place in special cases (Clause-14 pp 15437).

However, the amendment to the Basel Convention (Decision III/1) has not yet been implemented in our country. Though, the ratification process has not been completed but the restrictions under decision III/1 are being implemented.

There are no restrictions on the transit of hazardous wastes and other wastes through your country. Our country has not yet decided not to require prior written consent, either generally or under specific conditions, for transit transboundary movements of hazardous wastes or other wastes. Our country's legislation includes a definition of "State of transit".

Notification and Movement document forms of the Basel Convention are accepted in the control of transboundary movement of hazardous wastes and other wastes as English as the acceptable language.

Measures been undertaken for the reduction of the number of hazardous wastes and other wastes subject to the transboundary movement. Environment Policy 1992 (updated 2018) encourages reuse and recycle of various substances in the industrial sector in order to reduce the amount of waste/hazardous waste generated inside the country.

Initially, plastic came to people as a wonderful object. It is used to make common items ranging from toothbrushes to space helmets. But in the course of time, this plastic has now become the cause of extreme destruction of people and the environment. Since plastic is not a biodegradable material, it is causing environmental catastrophe. Plastic waste is now found everywhere. Even the ocean is not getting rid of plastic. The horrors of this plastic are so intense, that a recent study says that, every week every person in the world receives at least one credit card-equivalent amount of plastic.

Our primary focus should be on banning single used plastic items countrywide. Bangladesh must follow the example of India and other Asian nations in banning single-use plastics and act accordingly. It needs to impose a ban on the import of SUP on an urgent basis. Otherwise, plastic scraps from the neighboring nations will find their way to Bangladesh through trans-boundary movement worsening the situation even more.

Our Government may start implementing fines for littering plastic waste. The vehicle companies should provide trash containers in key points of the and should make announcement for the passengers not to throw trash of any kind in the river and to use trash containers. Extended Producer Responsibility schemes must also be promoted and practiced. Also, our government needs to promote cost-effective alternatives to single-use plastics available in Bangladesh. Straws made up of bamboo sticks are being used and manufactured in hilly regions of the country. In Kushtia district, compostable ice cream cups are being produced from leaves. Moreover, local production of plant-based alternatives can provide rich opportunities to increase local sustainable manufacturing and create jobs throughout Bangladesh while ensuring environmental and health protection. Developed countries sometimes in the name of technical support provides used accessories (including plastic materials) to institutions in the developing countries as a way of getting rid of their wastes. Bangladesh may strongly oppose this kind of waste transfer from developed to developing countries. Rather Bangladesh should request to make available the cheaper version of products specifically, developed for the developing countries.

Additionally, Basel amendment framework regarding trans-boundary movement of hazardous waste need to be implemented for proper management right away. Bangladesh should strictly follow the UNEA resolution adopted regarding Trans-boundary movement. We must update ourselves with waste trade policy framework to identify waste coming from within the country, make specific intervention of strategies, collaborate with originating countries (if exported to Bangladesh), give training to custom officers to identify waste, update knowledge of global waste movement, and cooperate with the environment ministry. Finally, plastic waste must be handled by the authorities who handle cargo at the port of entry. Accede to the protocol on liability and Compensation for damage resulting from transboundary movements of Hazardous wastes and their disposal according to Basel Convention is also required.

To imply with all these, introduction of zero waste concept and building our communities a zero waste one is the only solution to upgrade current waste management situation. It is high time we understand the gravity of the situation and start living by zero waste concept to reduce the pressure of this huge waste and all the mismanagements associated with it. We should feel accountable personally for the waste we generate and take the responsibility on our own rather than to solely feel depended on the authority. According to Zero Waste principle, we need to segregate our waste at initial level; refuse what cannot be reused or recycled and single use plastic items are in top of them. If we start composting our household organic waste a huge portion of waste will already get reduced and shall be converted into a resource (i.e.: organic fertilizer) which is the prime motto of building zero waste community.

This is also to state that there is a lack of knowledge on trading of hazardous wastes. So technical assistance is needed for strict control of TBM of hazardous plastic waste. So far, there is no space for disposal of hazardous waste and we lack logistic facilities for disposing.

Nonetheless, combined efforts need to be taken by all countries to face the situation and minimize wastage. Most of the developed countries must find ways to bring back a circular economy - reuse of wealth. More responsible for CO_2 emissions, than countries like Bangladesh, the developed countries should take liability and stop trans-boundary movement of plastic waste. However, most importantly, the first need to resolve the present situation and uplift it from polluting the environment is to create public consciousness which is highly needed.

Research and Survey

To sum up the genuine scenario, proper research and survey need to be done to evaluate the waste trade situation

Assessments

Based on research data, amount and source of plastic waste trading can be identified along with feasible ways of managing the transboundary movement.

Implementing Regulations

Regulation need to be revised and created as per requirment along with implementation for:

- Plastic Waste Treatment
- Unauthorized trading of plastic waste
- Ratifying Basel Amendments

Technical Advancement

Technical Advancement is highly needed to:

- Manage plastic waste
- Uplift current plastic pollution scenario
- Manufacture alternatives of single use plastic
- Monitor and control plastic waste trade

Public Awarness

Educating mass people about the adverse effect of plastic and its proper disposal method is highly required

Figure 17: Recommended Guideline for Managing Trans-Boundary Movement of Plastic Waste and Surveillance Plastic Waste Trade

CONCLUSION

After Malaysia Airlines Flight 370 vanished from radar separates March 2014 while on its way from Kuala Lumpur to Beijing, the quest for it reached out from Indonesia toward the southern Indian Ocean. It enthralled a worldwide crowd for quite a long time. No indication of the destruction showed up. On a few events, when satellite pictures uncovered assortments of items skimming on the ocean surface, trusts took off that they would end up being airplane parts. However, they weren't. It was all junk—bits of broken steel trailers, deserted fishing gear, and obviously, plastic shopping sacks. It was the very first occasion when so many people were watching the effects of their improper garbage dump. However, the concern didn't sustain as the way it should have been.

However, the plastic trash in the ocean and landfills in Bangladesh is far more than an aesthetic problem. The waste generated by plastic every second is surpassing the previous benchmark. Considering the global pandemic, the usages of plastic- mostly the single-use ones, have taken a toll, which, in turn, making a huge amount of waste to be dumped into landfills and mostly in water bodies. Bangladesh, being a waterborne country, carries this waste to the Bay of Bengal and contaminating the marine environment. The marine plastic contamination in Bangladesh is of great concern as we are navigated by the three major waterway frameworks of Asia, to be specific- the Ganges, the Brahmaputra, and the Meghna waterway framework. Since we are at the lower part and are the lower riparian of both China and India, the most noteworthy contributors to marine contamination, the nation is confronting trans-boundary stream contamination counting plastic waste contamination. Bangladesh bears much of the marine contamination radiating from these two nations.

Notwithstanding, the huge amount of hazardous plastic waste is not a problem where we do not know what the solution is. Straightly, all we have to do is to learn how to segregate and pick up our garbage and how to recycle it and refuse it on every possible occasion. It is a matter of building the necessary institutions and systems ideally before our ocean turns, irretrievably and for centuries to come, into a thin soup of plastic. The chemicals added to plastics to give them desirable properties, such as malleability, and the even tinier Nano-plastics that micro-plastics presumably degrade into are also a matter of great concern as those might pass into the tissues of fish and humans.

To imply with these, implementation of the Basel Amendment is a prerequisite as the prime objectives of the Basel Convention is to reduce transboundary movements of certain wastes to a minimum consistent with the environmentally sound and efficient management of such wastes. This convention also manifests to minimize the amount and toxicity of hazardous wastes generated and ensure their environmentally sound management as close as possible to the source of generation and assist developing countries in the environmentally sound management of the hazardous and other wastes they generate.

Additionally, we need to initiate building zero waste communities and start living a waste-free lifestyle as the zero-waste concept is the ultimate solution for all waste-related problems. Because an individual can make a huge difference in the vision for creating a circular economy to keep all the plastics in the required loop.

Nevertheless, no matter how developed or underdeveloped our country is, we are all connected in broader aspect by our seas. We must stop pollution in our seas to protect our oceans. Hence, we need to act regionally, as well as globally to stop the trans-boundary movement of hazardous plastic waste.

REFERENCES

- **"National Status including Database, Proposed Recycling Enterprise and Interventions on Marine Litter** [Report] / auth. South Asian Seas Program (SASP). - [s.l.] : The Department of Environment under the Ministry of Environment, Forest and Climate Change.
- **10 Facts About Plastic Pollution You Need To Know** [Online] // givingcompass. - 2021. - https://givingcompass.org/article/10-facts-about-plastic-pollution-you-absolutely-need-to-know/?gclid=Cj0KCQiAs5eCBhCBARIsAEhk4r6TQjDpHPJuRH5PBmB4rdbE99GEiVEBezSJrl8mVnxwfZzfCT4qbh8aAtenEALw_wcB.
- **10 SHOCKING FACTS ABOUT PLASTIC** [Online] // National Geographic. - 2021. - https://www.nationalgeographic.co.uk/10-shocking-facts-about-plastic.
- **A quantitative analysis linking sea turtle mortality and plastic debris ingestion** [Journal] / auth. Chris Wilcox Melody Puckridge, Qamar A Schuyler, Kathy Townsend & Britta Denise Hardest // Scientific Reports. - 2018.
- **Americal Chemistry Council** [Online] / auth. Plastics Industry Producer Statistics Group 2005. - https://plastics.americanchemistry.com/Education-Resources/Plastics-101/How-Plastics-Are-Made.html.
- **Analysis of Water Quality in Urban Water Supply System of Bangladesh** [Journal] / auth. Tapos Kormoker Ram Proshad, Mohammad Mahmud Khan // Journal of Environmental & Analytical Toxicology. - 2017.
- **Bangladesh Country Position on Basel Convention** [Report] / auth. Abdullah Mohammad Moinuddin. - [s.l.] : Ministry of Environment and Forest; Government of the People's Republic of Bangladesh, 2007.
- **Bangladesh drowns in 8 lakh tonnes of plastic waste a year** [Report] / auth. Islam Mahmudul. - [s.l.] : The Business Standard, 2019.
- **Bangladesh Transportation** [Online] // National Encyclopedia. - 2021. - https://www.nationsencyclopedia.com/Asia-and-Oceania/Bangladesh-TRANSPORTATION.html.
- **BANGLADESH: TRANSBOUNDARY RIVERS PROBLEMS AND PROSPECTS** [Conference] / auth. Jahangir Md. Jahid Hossain // Expert Scoping Workshop on quantifying the benefits of transboundary water cooperation. - Amsterdam, the Netherlands : [s.n.], 2013.
- **Biodegradable plastic and Marine litter: Misconception, concerns and impacts on marine environment** [Report] / auth. Kershaw Dr. Peter John. - Nairobi : United Nations Environment Programme, 2015.
- **'Biodegradable' plastic bags survive three years in soil and sea** [Online] // The Guardian. - 2019. - 2020. - https://www.theguardian.com/environment/2019/apr/29/biodegradable-plastic-bags-survive-three-years-in-soil-and-sea.
- **Compostable Products** [Online] // UN Composting Council. - https://www.compostingcouncil.org/page/CompostableProducts#:~:text=Compostable%20products%20include%20items%20such,%2C%20cups%2C%20plates%20and%20serviceware..
- **COVID-19 Pandemic Pushes Single Use Plastic Waste Outbreak: No Management, No Protection: High Health and Environmental Risk Unveil** [Report] / auth. ESDO. - Dhaka : Environment and Social Development Organization, 2020.
- **Everything you (don't) want to know about plastics** [Report] / auth. Markus Klar David Gunnarsson, Andreas Prevodnik, Cecilia Hedfors, Ulrika Dahl. - [s.l.] : Naturskyddsforeningen, 2014.
- **Holistic approach seen vital for sustainable waste management** [Report] / auth. KG Moazzem. - Dhaka : The Financial Express, 2016.

- **How plastic pollution is affecting seals and other marine life** [Online] // World Animal Protection. - 2021. - https://www.worldanimalprotection.org/news/how-plastic-pollution-affecting-seals-and-other-marine-life?gclid=Cj0KCQiAs5eCBhCBARIsAEhk4r78vpkLTYsymVzfHkTHhD6IajZVmQQ_rTBcHP2eSZaUzLzTD3H99YQaAjEmEALw_wcB.
- **Malaysia sending back plastic waste to Bangladesh** [Report] / auth. Desk News. - Dhaka : The Daily Star, 2020.
- **Managing toxic plastic waste** [Online] / auth. Ahmed Shamim // The Financial Express. - September 2020. - https://www.thefinancialexpress.com.bd/views/views/managing-toxic-plastic-waste-1599229539.
- **MUNICIPAL SOLID WASTE AND RECOVERY POTENTIAL:Bangladesh Perspective** [Journal] / auth. M. Alamgir A. Ahsan // Iran Journal of Environmental Health Science & Engineering. - 2007.
- **Municipal solid waste management system: A study on Dhaka North and South city corporations** [Journal] / auth. Kabir Mohammad Rasel // Journal of Bangladesh Institute of Planners. - 2015.
- **New UN report finds marine debris harming more than 800 species, costing countries millions** [Report] / auth. UN news. - [s.l.] : United Nation, 2016.
- **Perspectives on Sustainable Waste Management** [Journal] / auth. Castaldi Marco J. // Annual Review of Chemical and Biomolecular Engineering. - 2014.
- **PLANET OR PLASTIC?** [Report] / auth. PARKER LAURA. - https://www.nationalgeographic.com/magazine/2018/06/plastic-planet-waste-pollution-trash-crisis/ : National Geographic, 2018.
- **Plastic chokes Dhaka's drainage** [Report] / auth. Molla Mohammad Al-Masum. - [s.l.] : thethirdpole.net, 2018.
- **Plastic leachates impair growth and oxygen production in Prochlorococcus, the ocean's most abundant photosynthetic bacteria** [Journal] / auth. Sasha G. Tetu Indrani Sarker, Verena Schrameyer, Russell Pickford, Liam D. H. Elbourne, Lisa R. Moore & Ian T. Paulsen. - [s.l.] : Communications Biology, 2019.
- **Plastic microbead ban: What impact will it have?** [Report] / auth. McGrath Matt. - [s.l.] : BBC News, 2018.
- **Plastic Pollution Affects Sea Life Throughout the Ocean** [Online] // PEW. - The PEW Charitable Trust, 2018. - https://www.pewtrusts.org/en/research-and-analysis/articles/2018/09/24/plastic-pollution-affects-sea-life-throughout-the-ocean.
- **Plastic Pollution Facts** [Online] // Global Citizen. - https://www.globalcitizen.org/en/content/plastic-pollution-facts/?gclid=EAIaIQobChMIysD_9pui4QIVDr7tCh2ViwSpEAAYAiAAEgIluvD_BwE.
- **Plastic waste – everything you need to know** [Online] // City of Westminister. - https://cleanstreets.westminster.gov.uk/plastic-waste-complete-guide/#8.
- **Plastic Waste Facts** [Online] // The world counts. - https://www.theworldcounts.com/stories/Plastic-Waste-Facts.
- **Plastic waste inputs from land into the ocean** [Journal] / auth. Jenna R. Jambeck Roland Geyer, Chris Wilcox, Theodore R. Siegler, Miriam Perryman, Anthony Andrady, Ramani Narayan, Kara Lavender Law // Science. - 2015. - pp. Vol 347, issue 6223.
- **Plastics Derived from Biological Sources: Present and Future: A Technical and Environmental Review** [Journal] / auth. Patel Guo-Qiang Chen and Martin K. // American Chemical Society Publication. - 2011.

- **Saving rivers from plastic pollution** [Report] / auth. Aktar Rahima. - [s.l.] : The Financial Express, 2020.
- **Shocking Statistics on Plastic in Bangladesh** [Online] / auth. Islam Mahmudul // TBC News. - 2019. - https://tbsnews.net/environment/bangladesh-drowns-8-lakh-tones-plastic-waste-year.
- **Single Use Plastic: Hidden Costs of Health and Environment in Bangladesh** [Report]. - Dhaka : Environment & Social Development Organization, 2019.
- **Solid Waste Management of Dhaka City: A Socio-economic analysis** [Report] / auth. Tania Fatema. - [s.l.] : Banglavision Foundation, 2014.
- **States with Littering Penalties** [Online] // National Conference of State Legislatures. - 2014.
- **Strategic Analysis Report on Emerging criminal trends in the global plastic waste market since January 2018** [Report] / auth. INTERPOL. - [s.l.] : Interpol, 2020.
- **The United States' contribution of plastic waste to land and ocean** [Journal] / auth. Kara Lavender Law Natalie Starr, , Theodore R. Siegler, Jenna R. Jambeck, Nicholas J. Mallos, George H. Leonard. - [s.l.] : SCIENCE ADVANCES, 2020.
- **Understanding the Ocean's Smallest Creatures** [Online] / auth. Schafferarchive Amanda // MIT Technology Review. - 2015.
- **WasteForce Waste Crime Alert #3** [Report]. - [s.l.] : WasteForce, 2019.
- **What happens to the Plastic you throw away?** [Online] // The World Counts. - 2021. - https://www.theworldcounts.com/stories/plastic-waste-facts.
- **Where does your plastic go? Global investigation reveals America's dirty secret** [Report] / auth. McCormick Erin [et al.]. - [s.l.] : The Guardian, 2019.
- **World Bank Climate Data** [Online]. - https://data.worldbank.org/country/bangladesh#cp_cc.
- **ব্রিটেনের প্লাস্টিক বর্জ্য আসছে বাংলাদেশে** [Report] / auth. Desk News. - Dhaka : News 24, 2018.