RESEARCH MONOGRAPH
On
Sustainable Waste Management Policy in Bangladesh: A Critical Legal Analysis

A research monograph submitted to the Department of Law in partial fulfilment of the requirements for the degree of Master of Laws (LL.M.) from the Daffodil International University

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Letter of Submission

To,

S. M. Saiful Haque
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Subject: **Prayer for submission of dissertation**

Dear Sir,

I am writing to express my gratitude for your time and attention in reviewing my recently completed research on "**Sustainable Waste Management Policy in Bangladesh: A Critical Legal Analysis"**. Your valuable input has helped me better understand the topic and I also give my best effort to reach your expectations by collecting all relevant data from different sources for this study.

I hope that you find this submission acceptable and I also look forward to hearing from you, if you could let me know what your recommendations & feedback on my work. I am ready for any clarification as per your advice.

Sincerely Yours,

Sumit Sarker
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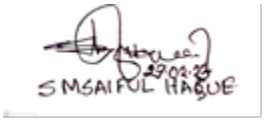
Letter of Approval

It is certifying that the work **"Sustainable Waste Management Policy in Bangladesh: A Critical Legal Analysis"** is done by Sumit Sarker, ID: 221-38-047, Department of Law, Daffodil International University, under my supervision in accordance with all requirements for the fulfillment of LL.M degree.



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Declaration

I, as a candidate for the degree of Master of Laws (LLM), am fully aware of the rules and regulations of the Daffodil International University relating to the preparation, submission, retention and use of a research monograph. I hereby declare that the thesis title **"Sustainable Waste Management Policy in Bangladesh: A Critical Legal Analysis"** submitted by me to fulfill the requirement for this degree.

I undertake that all material presented for examination is my work and has not been written for me, in whole or in part, by another person(s). I also undertake that any quotation or paraphrase from another person's published or unpublished work has been duly acknowledged in the work which I present for examination. I farther declare that the presented research work is original & has not been submitted either partly or wholly in any academic or unacademic platform.

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All praises are for Almighty God who has given me the opportunity and ability to conduct this research. His grace and blessing enabled me to complete this work within such a short time.

I would like to express my deepest gratitude & appreciation to my honorable research monograph supervisor Mr. S. M. Saiful Haque (Sir), (Assistant Professor, Department of Law, Daffodil International University) for his proper guidance, valuable suggestions and very useful comments on the earlier drafts and constant encouragement during the whole period to complete my research monograph.

I am also deeply indebted to my family who have supported me all the time with their best consultation, to fulfill my demands regarding this research paper.

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Table of Content

List of Abbreviation

Abbreviation	Meaning/ Explanation
WM	Waste Management
WG	Waste Generation
MSW	Municipal Solid Waste
SWM	Sustainable Waste Management
ESDO	Environment & Social Development Organization
CE	Circular Economy
CW	Commercial Waste
CDM	Clean Development Mechanism
OD	Open Dumping
DoE	Department of Environment
UN	United Nation
UNEP	UN Environment Program
UNDP	United Nations Development Programme
FAO	Food and Agriculture Organization
CDM	Clean Development Mechanism
GEF	Global Environment Facility
NCDM	National Clean Development Mechanism
UNFCCC	United Nations Framework Convention on Climate Change

Abstract :

Waste management has become a global concern nowadays. In developing countries, it's become more alarming, but it can be minimised through proper management policy. Developing countries like Bangladesh waste disposal in open place and burning of waste materials are the main implemented method and these are the final disposal systems of waste management. This paper will review the inadequacy of waste management policies and the main impacts of it in Bangladesh. This study will focused on the major problems and imminent risks caused by the uncontrolled waste disposal in Bangladesh. Reviews of the scientific literature on the dire effects of unsafe and inappropriate waste management to our environment and recommendations for appropriate management will provide. Waste can be recycled if it is collected and managed properly & this study will focus on that matter also, by showing a roadmap of appropriate waste recycling policy for Bangladesh. This research paper will compare the existing waste management policies of Bangladesh with the unerring and appropriate waste management policies of many developed & zero waste countries. Through this comparison some new ideas on necessary management policies and laws will be presented in the context of Bangladesh, some sustainable policies and management will be outlined to avoid inappropriate waste management policies and its potentially dire consequences.

Key Words: Sustainable waste management, Policy, current situation, law enforcement body, disposal mechanism & zero waste concept.

Chapter One
Introductory

1.1. Introduction:

In today's world people produce billion tons of waste in every year. It is estimated that 2.24 billion tons of consolidated waste was produced in 2020 and day by day it increasing towards destruction of living environment. According to the World Bank, Bangladesh is one of the top country in the world, which produce lots of waste and leads environment pollution due to its inadequate waste management (WM). Which is immense threat for this country and for the whole world. So, managing waste properly is essential for building sustainable livable places, but it remains a challenge for many countries like Bangladesh. WM is important because it protects our living environment from the harmful effects of waste materials. Improper WM can lead to destroy the living environment through water pollution, air pollution & soil erosion. Proper management can aids to reuse of waste if it collects and manage efficiently. Waste materials such as plastic, glass and paper etc can separate into different graft for processing to create new products that will also conserve natural resources. Furthermore, when this waste is not recycled, it usually ends up in open place which pose a threat to environment. Waste disposal is not done properly because of weak WM policy.

In Bangladesh numerous specified laws are made in operation to deal with environmental issues, which have been made in time to time for dealing with environment downfalls. These laws are largely focus on soil use, space above soil and water toxic waste, noxious chemicals, unyielding waste, forest preservation, flora and fauna protection, coastal region Management, industry, ecological wellbeing and hygiene etc. None of these laws specifically deal with WM but in 1995 the Environment Conservation Act provides a relatively precise meaning of waste, although it is not comprehensive for every purpose. However, there is no compatible legal framework related to WM in Bangladesh. There is no comprehensive data on the rate of waste generation (WG), collection, coverage, storage, transport & disposal measures. The large scale of WG and its management practice is not up to the mark. In attempts at the betterment of WM systems are mostly by borrowing western technologies which could not reach to full functionality, because of the

inappropriateness of such adopted technologies to the present conditions of the country. That's why Bangladesh should consider it's situation and circumstantial needs and make appropriate policies for WM & take it in action accordingly.

1.2. Literature Review:

In **'The Waste Crisis: Roadmap for Sustainable Waste Management in Developing Countries' (Hossain et all. 2022)**[1] enlightened with the statement of waste crisis and its modern solutions to this critical issues and design a roadmap for sustainable waste management (SWM) for developing countries through this book. It states an overview of current WM practices and policies like collection, processing, composting, recycling, and disposal of waste and provides a SWM approach for developing countries.

In **'Handbook for schools on organic waste management' (Jürgensen. 2016)**[2] enlightened us through this book with the framework of the climate and clean Air coalition municipal solid waste (MSW) initiative and with local coordination of a Brazilian WM Association in their country. In this book, the author presents some appropriate frameworks for organic WM considering Brazil's internal situation, from which other developing countries can adopt some appropriate frameworks according to their own circumstances.

In the book of **'Municipal Solid Waste Management in Developing Countries' (Kumar. 2016)**[3] enlightened with the analytical methods of Municipal solid WM through his book. It provides about the systematic management operation of MSW under the circumstance of developing country. The information of this book will improve and manage solid waste systems through the application of modern management techniques.

[1] Sahadat Hossain et all. (2022). The Waste Crisis: Roadmap for Sustainable Waste Management in Developing Countries, 1st Edition, published by John Wiley & Sons Ltd. Available at: https://b-ok.asia/book/22434470/d4ec8d
[2] Marco Ricci Jürgensen, Handbook for schools on organic waste management, published (2016) by Climate and Clean Air Coalition.
[3] Sunil Kumar, Municipal Solid Waste Management in Developing Countries, published (2016) by CRC Press. Available at: https://b-ok.asia/book/2871657/5a95b9

In **'Comparative analysis of solid waste management in 20 cities' (Wilson. 2012)**[4] enlightened through his book which provides the policy of many different countries for managing waste with the contribution of technologies and that policy edges can be implement in other countries through ever tighter environmental policies, legislation and standards they must develop or acquire the technology is needed to meet the new requirements.

In **'Sustainable Waste Management: Policies and Case Studies' (Ghosh. 2017)**[5] enlightened to finds the effect of water content fluctuation during the biodegradation process with the physical presence of waste plastics on the biodegradation of organic fraction of MSW which can enhance the biogas production rate. This present work therefore emphases on the optimization of nominated process constraints for the effective production of biogas by using response surface methodology and observes the effect of fluctuation on the biogas yield to decrease the waste and it crisis.

In '**Waste Management in Bangladesh' (Muntasir. 2021)** published a report in Daily Ittefaq a Bangladesh newspaper with the objective of the highlight the WM. It also provide a report by the Environment and Social Development Organization (ESDO) that shows the WM plan of Bangladesh is not modern and proper use of scientific system for waste disposal is rare.

In **'A Facilitating Framework for a Developing Country to Adopt Smart Waste Management in the Context of Circular Economy' (Khan et all. 2021)**[6] enlightened with the article in which Circular Economy (CE) principles are discussed to bring high levels of sustainability to the WM sector. Moreover, implementation of smart WM systems provides an enabling framework in the context of Pakistan. By digitalizing the collection, sharing and receiving of country's waste data and making necessary changes in its management, paves the way for the country to became to zero waste country.

[4] Wilson, D.C et all. Comparative analysis of solid waste management in 20 cities, (2012). Published by SEGA International Journal.
[5] Sadhan Kumar Ghosh, Sustainable Waste Management: Policies and Case Studies: 7th IconSWM—ISWMAW 2017, Volume 1, Published (2017) by Springer Publishing. Available at: https://link.springer.com/book/10.1007/978-981-13-7071-7
[6] Feroz Khan & Yousaf Ali, A facilitating framework for a developing country to adopt smart waste management in the context of circular economy, Published (01 December 2021), Springer Publishing.

In **'Waste Mismanagement in Developing Countries: A Review of Global Issues' (Ferronato et all. 2019)**[7] enlightened with the reviews of mismanagement of waste in developing countries which reported the result of its environmental impacts. Here he also reviews many scientific literature regarding waste streams. This study quantify the comprehensive impacts of waste exigence and made a planning for integrated solid waste collections and its systematic treatment for improving sustainability of WM for whole world.

In '**Understanding the role of informal sector for sustainable development of municipal solid waste management system: A case study in Vietnam' (Tong et all. 2021)**[8] enlightened with the information of waste collection and recycling approach, that can contribute an important role to our economic diversification. This study focus on the contribution of economical sector for waste collision by recycling it in systematic way. It shows the effective waste recycling system that can improve the condition of work and livelihoods of poor people.

In **'An integrated approach to establish e-waste management systems for developing countries' (Ikhlayel. 2018)**[9] enlightened with the discussion about the fastest growing rate of E-waste and its effect to the environment and Public health. Here he introduced a process called integrated E-waste management for managing the rapid growth of E-Waste. It shows that this systematic approach can improve the recycling method of E-waste and also improve the technical aspect of implementing the integrated approach for it.

In **'Solid waste management: Scope and the challenge of sustainability' (Das et all. 2019)**[10] enlightened through the introduction of 3R principles as - 'reduce ,reuse and recycle' to improve practical and effective approach to establish sustainability of solid waste management. Here the author shows the importance of economic status of nations to deal with waste juncture in circumstantial way. This paper also introduced some innovative solutions for SWM plan for many developing countries.

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[7] Navarro Ferronato & Vincenzo Torretta, Waste Mismanagement in Developing Countries: A Review of Global Issues. Published (2019), by International journal of environmental research and public health

[8] Yen Danb Tong, Thi Dan Xuan Huynh, Tien Dung Khong, Understanding the role of informal sector for sustainable development of municipal solid waste management system: A case study in Vietnam, Published (2021) by Elsevier.

[9] Mahdi Ikhlayel, An integrated approach to establish e-waste management systems for developing countries, (2018). Published by Journal of cleaner production.

[10] Subhasish Das et all, Solid waste management: Scope and the challenge of sustainability, (2019), Published by Journal of cleaner production.

1.3. Objectives of the Research:

The specific objectives of my research as follows-

I. To explain WM policies of Bangladesh and existing WM mechanism of the government.
II. To analyse the existing laws & policies regarding WM and determine some legal and practical additions on it.
III. To provide some useful suggestions for SWM and become a zero waste country.

1.4. Research Questions:

The research question of my study as follows-

I. Whether the people are aware of waste crisis, WM related laws & policies to manage this problem?
II. Whether the features of existing policy & enacted laws can ensure proper WM?
III. What are the major initiative that legal authorities can take to manage waste crisis with the collaboration of general people?

1.5. Statement of the Problem:

Bangladesh is one of the densely populated country in the world that's why it produce a huge amount of waste every day and it becoming a serious problem due to its poor WM system. Industrialization, urbanization and arrival of migrant citizens into cities is increasing day by day, which has become a cause of concern for huge waste generation in Bangladesh. It include solid waste, liquid contaminated with chemicals waste, food waste and ago-waste etc. generated from different sources. Which have been frequently dumped in open landfills, causing environmental degradation in Bangladesh. This indiscriminate dumping of waste in the open place reveals the poor WM policies of this country. Thus soil, air and water pollution is a common phenomenon in

most cities of Bangladesh. The main challenge is acute land scarcity. It has a dense population due to which 7000 metric tons of waste is generated every day from the capital Dhaka alone.[11]

In 2021, Bangladesh Environmental Protection Act, 1995 published the Solid Waste Management Regulations. This Regulations define the individual responsibilities of solid WM and provide about recycling, and disposal obligations according to Extended Producer Responsibility on manufacturers of non-biodegradable products such as glass, plastic, and bottles. It also provide about other effective measures but individual contribution for managing waste are not that effective and without every subjects wiling activeness we can not get rid of this crisis.

1.6. Significance of the Study:

The environment plays an important role in the existence of life on the earth. We are all depends on the environment for food, air, water, and other irreplaceable needs. Therefore, it is important for every individual to save and protect our environment from being destroyed by waste. That's why, WM is one of the critical challenge in today's world and also for Bangladesh. Without proper management the massive production of waste can quickly destroy the environment. If the proper application of the proposed waste management policies is ensured then it will inspire many people in waste recycling initiatives with the direct initiatives of the government and its concerned agencies.

WM is one of the most important issue in today's world as well as for Bangladesh. This study will help to increase general people awareness about the law regarding WM through an effective policy and it will also give some unique ideas for general people for managing waste. It will also find out the loopholes of existing WM laws and policies and will try to find out some guidelines or solutions related to that.

[11] F Ahmed, S Hasan, MS Rana & N Sharmin, A conceptual framework for zero waste management in Bangladesh, (2022). Published by International Journal of Environmental Science and Technology.

1.7. Research Methodology:

The present study will be a describe work based on qualitative and quantitative both data. Different methods and techniques will be applied to conduct the present study. Several data collection tools will be used to collect primary data. Key information will be used considering the objectives of the present study. Case study will be used to collect data and information from different categories of Waste. Data will be analysis keeping in view with the objectives of the study.

1.8. Limitation of the Research:

There are some abridgment on the way to conduct this research as It's time schedule which is so tight to collect all data, analyse and complete the thesis. It will be very hard to collect all the primary data but the most needed will be collect to complete this research. And the determination of the primary data has to be reached, based on requirement of collection then with the proportionality test.

Chapter Two

Current Situation of Waste Crisis and It's Management Policy in Bangladesh

2.1. Waste Generation & Management in Bangladesh:

The trend of WG is rising with the increase of urban population. Waste generated about 8000 tones daily from six major cities (Dhaka, Chittagong, Khulna, Rajshahi, Barisal and Sylhet) of the country in which only Dhaka city contributes about 70% of it.[12] The main causes for this the WM system is not well embodied in Bangladesh. To improve the collection of waste, transportation, recycling, incineration and landfill systems the policies are changing with time. But, Lack of regulations towards the management mechanism for waste disposal, landfill and utilization, lack of awareness, inappropriate choice of technology and inadequate financial support are the major limitations to WM in Bangladesh.

2.2. Sources & Causes Affecting Waste Generation Rate:

2.2.1. Sources Of Wastes:

WG became a part and parcel of today's world. In Bangladesh it mostly generated from different sources as households, schools, college, offices, marketplaces, restaurants and from other public places. These sources can be classified in different categories, as follows-

- **Household Waste:**

Household Waste means any waste material which derived from households garbage, trash, and sanitary wastes in septic tanks. Domestic waste is one of the major sources of rapid WG. It include food waste, glass, metals, paper, plastics & textiles etc. A big portion of domestic wastes made of plant and animal waste. In includes waste from leftovers and discards paper, cardboard, newspapers, books, and wrapping paper also contribute to big portion this waste. On the other

[12] Sayeda Shahpara Shah and Syed Saad Andaleeb, Dhaka has a waste management problem Published (July 25, 2022), The Daily Star, https://www.thedailystar.net/opinion/views/news/dhaka-has-waste-management-problem-3079156

hand plastics and disposable dishes like toys, metal and glass cans are another part of domestic wastes.[13]

- **Electronic Sources of waste:**

Electrical objects like television, mobile phone, computers, music players, vacuum cleaners and other using tools, when this are discarded at the end of their use it create waste, which can called electronic wastes. These are also called e-waste and that e-waste are mostly harmful to humans and the environment.[14] This kind of waste can cause a big threat because when it comes to recycling stages, most of them are not recyclable & some of the electronic devices contain toxic materials like lead and cadmium which may be released into the environment if they aren't recycled properly.

- **Industrial Sources of Waste:**

Waste generated from manufacturing and processing industries are called industrial waste. It includes the waste form factories, power plants, garments industries, chemical plants and food processing industries etc. It creates various forms of waste that causes the huge impact on environment and human life.[15]

- **Medical Sources of Wastes:**

Medical or clinical waste are the waste which generated from health care facilities such as hospitals, clinics, surgical theaters, veterinary hospitals, and labs etc. It includes surgical objects, medical dressing kits, needles, syringes, pharmaceuticals and all other needed product in this sector.[16] Medical waste is one of the largest contributor to waste in Bangladesh. This includes human remains as well as medical equipment that has been used for one purpose only and then thrown out. When someone gets sick in Bangladesh, either from an accident or from something like cancer treatment, there isn't any way to dispose of their medical equipment without causing

[13] MA Abedin, M Jahiruddin, Waste generation and management in Bangladesh: An overview, (2015), published by: Asian Journal of Medical and Biological.
[14] MH Masud, W Akram, A Ahmed, AA Ananno, Towards the effective E-waste management in Bangladesh: a review, (2019), published by Springer publishing.
[15] L Hossain, SK Sarker, MS Khan, Evaluation of present and future wastewater impacts of textile dyeing industries in Bangladesh, (2018) published by Elsevier.
[16] Haque et all, Medical Waste Management System in Bangladesh Hospitals: Practices, Assessment and Recommendation, (2021), published by IOSR Journal of Environmental Science, Toxicology and Food Technology.

problems for other people around them. This means that medical waste ends up being thrown away instead of being disposed of properly.

- **Agricultural Sources of Wastes:**

Agricultural wastes are generated form agricultural activities, like; horticulture, livestock breeding, market gardens and seedling nurseries etc. Wastes generated from empty pesticide containers, out of date medicines and wormers in agriculture are the sources of this kind of waste. Agricultural waste is another largest sources of waste in Bangladesh. This is because a large percentage of Bangladesh's population works as farmers, and they produce a lot of food. It is created by farmers in the process of agricultural production. It include rice husk (from rice harvesting) and animal manure. These wastes can be disposed of in landfills or used as fuel for agricultural purposes.

- **Wastes Generated from Construction:**

Construction of roads, building, huge package boxes and plastics from the building materials create wide range of waste that can categorised as construction waste. On the other hand demolition of old buildings and structures also generate large scale of waste materials which are called demolition waste.[17]

- **Commercial Sources:**

The waste generated from the commercial purpose are called commercial waste (CW). It is another large source of waste in Bangladesh. CW are generated by industries such as food processing factories, textile mills, brick kilns, paper mills, etc. CW include plastic packaging material and other types of plastic materials that are not biodegradable. These materials can be disposed of by incineration or burning them in open spaces to reduce their volume before disposal. It also includes discarded packaging materials from industrial processes like construction sites and factories. Many people use plastic bottles for storing water, which means that they end up being thrown away when they are empty and this causes a lot of waste.

[17] Datta et all, Investigation on the generation of construction wastes in Bangladesh, (2022), published by International Journal of Construction Management.

2.2.2. Causes of Rapid Waste Generation:

The causes of rapid waste generation in Bangladesh are given below-

- **Lack of Public Awareness:**

The main causes of poor WM in Bangladesh is lack of public awareness about it. When something is outlived of use then it is disposed of with carelessness. General people and professionals of every industry need to understand that just because something has outlived its usefulness, it doesn't mean it can be discarded without proper management and cannot use in any other means. Without the proper awareness of the impact of poor WM on the environment and human health, it can be difficult to find reasons to devote time and effort to WM. Most people in this country not even aware of the financial benefits that proper WM techniques or systems can bring.[18]

- **Inappropriate Strategy Regarding WM:**

In Bangladesh 3R strategy is introduced to tackle the problem of WM. Here the 3R strategy (Reduce, Reuse, and Recycle) of Bangladesh WM practice is inadequate to fix the current waste crisis. Because even if a strategy is capable on paper, it can also become inappropriate and ineffective due to improper implementation. The 3R strategy for WM can be sustainable but the general people of this country do not have clear idea about its simple nature and application method. Therefore, the problem can be solved by developing the strategies that is easy to implement and also considered easy to application for all types of people after taking into account the surrounding situation.[19]

- **Insufficient Investment in Waste Management:**

The management and proper investment required for waste management are not being followed by most of the people and industrialist in order to save money. In Bangladesh people pursue the illegal waste sites or fly-tipping because it is evidently cheaper than legitimate waste disposal and it doesn’t work within the proper environmental or lawful regulations. While It is cheaper but never worth it, because it can represent short-term savings but ensures long time punishment.

[18] Ahmed et all, A conceptual framework for zero waste management in Bangladesh, (2022), Published by Springer Publishing, P.14
[19] Ahmed et all, A conceptual framework for zero waste management in Bangladesh, (2022), Published by Springer Publishing, P.15

Properly managing waste can give potential revenue streams for example; polystyrene is recyclable and its a valuable resource for the construction industry.[20]

- **lack of Waste Management Machinery:**

A lack of WM machinery can be a big issue for industries in Bangladesh. Proper WM machinery can helps to reduce incessantly generation of waste, ensure easier transportation and sustainable storage. It can improved hygiene and safety by creating as enclosed spaces for waste. Business sector and industries can be left poorly managing the disposal of waste without the efficient waste disposing machinery.[21]

2.3. Tactics for Managing Waste in Bangladesh

2.3.1. Collection of Waste:

In developing countries waste is collected either by mechanical or manual methods. Waste collection is quite complex in Bangladesh because it collects not only the waste which are coming from households but also from several places and sectors. And there is not enough storage exists at near the point of source of waste in every places. In Bangladesh waste is collected door to door or by using motorised and other vehicles that come at specific times in municipal areas, that's why municipalities of this country are fully responsible for the waste collection. Here, collection of waste is done thorough the following ways: Community bin System (brick, concrete or corrugated iron sheet); Demountable Containers. These institution collect the waste from different places through their own mechanism or through private sector contracts.[22]

[20] SH Bhuiyan, A crisis in governance: Urban solid waste management in Bangladesh, (2010), published by Elsevier, P. 08, Available at: https://doi.org/10.1016/j.habitatint.2009.08.002
[21] SH Bhuiyan, A crisis in governance: Urban solid waste management in Bangladesh, (2010), published by Elsevier, P. 18, Available at: https://doi.org/10.1016/j.habitatint.2009.08.002
[22] M Ashikuzzaman, MH Howlader, Sustainable solid waste management in Bangladesh: issues and challenges, (2020), published by IGI Global. P. 40, Available at : https://www.igi-global.com/chapter/sustainable-solid-waste-management-in-bangladesh/240071

2.3.2. Transportation of collected Waste:

Particular kind of vehicles are used to transport waste for its management purpose. For the transportation of collected waste, the conventional open trucks, demountable containers and tractors are used in Bangladesh. There is no system of appropriate transportation of waste that will be used to transfer waste from small collection vehicles to larger transports. Infectious and toxic wastes mixed with other general wastes at the time of transportation, which is the biggest downside of the waste transportation in this country.[23]

2.3.3. Processing, Reusing, Rescaling & Disposal Methods:

In Bangladesh wastes are process, reuse and rescale is done in many ways for waste management. Most waste recycling method is done by informal processes and through waste sorting. Nowadays local government authorities are replicating community based WM model in different cities by the use of Clean Development Mechanism (CDM) according to Kyoto Protocol. Through the collaboration with WWR (a Dutch company) undertake composting plant and landfill gas recovery project of 700 ton/day capacity at municipal landfill site of Dhaka city. A number of towns and cities currently use a few methods for healthcare WM. In most of the cases of Bangladesh is usually open crude dumping is adopted.

In the past WM never been much of a concern, but day by day due to globalization & rapid industrialization it being an unavoidable needs to establish more efficient waste disposal method. Waste compaction, Incineration of waste, biogas generation through waste, waste composting and vermicomposting of waste are the most effective disposal methods but these are not being followed properly.[24]

[23] M Ashikuzzaman, MH Howlader, Sustainable solid waste management in Bangladesh: issues and challenges, (2020), published by IGI Global. P. 41 & 50 Available at : https://www.igi-global.com/chapter/sustainable-solid-waste-management-in-bangladesh/240071

[24] Md. Anwarul Abedin and M. Jahiruddin, Waste generation and management in Bangladesh: An overview, (30 June 2015), published by Asian Journal of Medical and Biological Research.

2.4. Practice of Waste Management in Bangladesh

2.4.1. Open Dumping:

In developing countries like Bangladesh, due to a lack of proper WM policies most of the waste disposal is done by the form of open dumping (OD) in several dumpsites. These open dumpsites are those place where wastes are dumped without planning and determination of health & environment. Here are some facts about OD of waste in Bangladesh-

- It's an environmental hazard, as it pollutes rivers, lakes, and soil with toxic chemicals.
- It leads to human health issues because people can be exposed to these chemicals through direct contact or through eating fish that have been contaminated by the chemicals.
- It has an economic impact because it costs money to clean up the areas affected by OD of waste.
- It takes away space from productive uses of land and increases pressure on already limited resources like water quality.

A large portion of the WG on-site is left uncollected, resulting in OD of waste in rural and urban areas alike. OD of waste has many negative impacts on people and their environment. The air quality in Bangladesh is already poor, through OD makes it even worse by releasing harmful gases into the air. It also causes problems for animals who feed on discarded food or drink from contaminated water sources. The ideal outcome for this problem would be for Bangladesh to stop OD by 2030 as part of its Paris Agreement goals.[25]

2.4.2. Incineration:

Incineration is also widely practiced in developing countries for waste volume reduction and power generation. It is a waste disposal method that involves burning waste in a controlled environment. It's often used in factories and other industrial facilities, as well as in landfills. It is a common way

[25] KMN Islam, Municipal solid waste to energy generation: An approach for enhancing climate co-benefits in the urban areas of Bangladesh, (2018), published by Elsevier.

to dispose of waste in Bangladesh. It has been used for decades, and it has been proven to be an effective method for disposing of large quantities of solid waste.[26]

The current state of affairs regarding incineration is that the government has committed to increasing the amount of money spent on recycling, as well as using more sustainable methods of disposing waste. They are also working to build more incinerators that utilize less energy, which will help reduce carbon emissions from burning trash.

The main issue with this waste disposal system is that there are not enough resources available to properly dispose of all of the trash generated by Bangladesh's growing population. In addition to being environmentally damaging, incinerating trash also releases harmful chemicals into the air (such as dioxins) that can have negative effects on public health.

Now garbage burning has been a problem in Bangladesh for decades. Landfills were full of waste, so people began burning it in any place or in open fields. This practice became dangerous for people living nearby burning garbage released toxic fumes into the air and caused fires that burned down homes every year. In response to this problem, the government started building incinerators in different parts of the country started in 1995. Today there are over 20 active incinerators across Bangladesh about half of them are owned by private companies but operated by local governments or charities.[27]

2.5. Role of Local Authorities:

The problem of waste disposal in Bangladesh is a problem that has been ignored for decades. But in present scenario there is no doubt that the authorities of Bangladesh are very much aware of the problem of waste disposal. In fact, they have taken various initiatives to solve it. The government has taken some steps to address the problem of waste disposal in our country. The government has made a policy on waste management and has also adopted several measures to ensure that waste is disposed of properly. In addition, the government has launched many campaigns to educate people about proper disposal of garbage. However, the actual situation regarding waste disposal

[26] MS Rahman, J Alam, Solid Waste Management and Incineration Practice: A Study of Bangladesh, (2020), published by International Journal of Nonferrous Metallurgy. P.37
[27] MS Rahman, J Alam, Solid Waste Management and Incineration Practice: A Study of Bangladesh, (2020), published by International Journal of Nonferrous Metallurgy. P.41

in Bangladesh is still quite bad. This authorities have to improve their practices to deal with this issue.

In April 2016, a bill was passed by parliament which prohibits all kinds of single use plastic bags from being sold in Bangladesh after 1st July 2018. This bill was enacted under the Hazardous Waste Management Act 1988 (Amendment). According to this act, all kinds of hazardous waste including plastics should be properly managed so that it does not harm human health or environment in any way. However, this new law is yet to be implemented due to lack of awareness among people about its importance as well as lack of proper facilities for managing them properly at different levels across the country.[28]

The government of Bangladesh has taken a number of measures to control the disposal of waste. These measures include:

- Setting up of a dedicated authority for waste disposal in Bangladesh.
- Establishing a waste disposal plant at Dhaka University, which is under the jurisdiction of the country's Department of Environment (DoE). The plant was inaugurated on 1st November 2003.
- A separate department created for dealing with environmental issues as per the DoE Act No. 9 of 2002. This department is known as the DoE.
- The Department has been made responsible for implementing all laws related to environment protection and management in Bangladesh. It also acts as an advisory body to all concerned agencies on environmental issues within the country.
- The DoE is headed by a Director General who is assisted by a senior secretary, secretaries and other officials. The DoE is divided into four sections: Planning & Coordination, Pollution Control & Waste Management, Pollution Control & Water Resources Management and Land & Environment Management.
- There are two agencies that report directly to the Executive Branch – Office of Chief Engineer (Administrative Head) and Office of Chief Engineer (Technical Head).

Moreover, The government of Bangladesh has taken many steps for the disposal of wastes. The authorities are responsible for collecting, transporting, disposing and recycling different types of

[28] Hazardous Waste Management (Amendment) Act, 1988

wastes. They have taken many measures for this purpose, but there seems to be some gap between their intentions and implementation.[29]

2.6. Overview of Current Situation:

Bangladesh has a history of poor WM practices and a lack of awareness about how to prevent waste from entering landfills or becoming a source of pollution. This has led to the creation of large amounts of garbage, which are often disposed of inappropriately. The current state of WM policy in Bangladesh is characterized by a lack of resources and high rates of unemployment among those who work in this field.

WM has always been a challenge for Bangladesh. According to the World Bank, about 75% of waste is generated in the country, which is far higher than global averages. The country's WM system is not only inefficient but also unsustainable.

[29] M Shammi et all, Application of short and rapid strategic environmental assessment (SEA) for biomedical waste management in Bangladesh, (2022), published by Elsevier.

Chapter Three

Global Concern and Some Sustainable Waste Management Practices

3.1. Global Concern Towards Waste Crisis:

WM is an area of concern to the international community because of the threat to human health and the environment posed by contaminated waste. The UN has made a commitment to reduce, reuse and recycle waste materials through different Mechanism. The European Union has also adopted a Zero Waste Strategy. The aim of these policies is to increase awareness about zero waste and reduce the amount of waste going into landfills. In addition, effective WM can help create jobs for people who are often under-employed and under-educated, providing them with employment opportunities.

The global concern towards waste crisis is a serious issue that needs to be addressed. The increasing demand for resources, coupled with the fact that we are producing more waste every day, has created a situation where we have run out of space for landfill sites. This has led to an increase in landfills and incinerators, which have caused many problems for both the environment and human health. The problem is that we need to find ways to reduce our consumption of materials and energy in order to make room for future generations. However, this will only be possible if we can find a way to recycle our waste so that it can be reused again instead of just thrown away. The increasing demand for resources, coupled with the fact that we are producing more waste every day, has created a situation where we have run out of space for landfill sites. This has led to an increase in landfills and incinerators, which have caused many problems for both the environment and human health.

The issue the waste crisis has been increasing in recent times and it has been highlighted by many governments and organizations, including the United Nations, which is working on a solution.The waste crisis is defined as an imminent problem that could lead to serious consequences if not addressed properly. It involves the disposal of various types of waste materials and their improper treatment in landfills, which could result in environmental degradation and health hazards for humans and animals.There are several causes behind this problem such as rapid urbanization, industrialization, consumerism and poverty among others.

3.2. Major International Waste Management Authorities and Programs:

3.2.1. United Nation Environment Programs:

The United Nations (UN) has several programs to reduce the amount of waste produced & management by its member states, some of them are discussed below-

- The UN Environment Program (UNEP) has launched a number of programs with an aim to develop countries into environmentally friendly nations that produce less waste and use more recycling materials. For example, UNEP has developed a program called "Zero Waste" which aims at reducing the amount of waste produced in organization so that it can be reused or recycled.
- The UNEP promotes sustainable development through environmental protection, policy coherence and capacity building in developing countries. It coordinates activities among member states as well as with international organizations such as UNEP Regional Offices and International Councils.
- the United Nations Development Programme (UNDP) is another organization of UN that collaborate with Asian countries governments to establish an environmentally sustainable solid waste management collection and disposal system.
- The Food and Agriculture Organization (FAO) is an agency within the United Nations System. It works towards improving food security worldwide by helping to build national capacities in food production; by strengthening partnerships between governments, research institutes, NGOs and other actors.
- The UN has made a commitment to reduce, reuse and recycle waste materials through its Clean Development Mechanism (CDM).

The global aim of SWM has been set as an essential part of Agenda 21, the UN's plan for sustainable development. The objective is to make MSW a resource rather than a liability and to

achieve zero waste by 2050.[30] The UN also supports countries that want to develop their economies while protecting their environment from pollution through a number of programs including Global Environment Facility (GEF). Another institution working on sustainable development is World Bank Group which provides loans for developing countries so that they can overcome poverty and build infrastructure for their country's economic growth without damaging the environment in any way, etc.[31]

3.2.2. Present Waste Management Policy in the European Union:

The present waste management policy in the European Union (EU) is based on the following principles:

- No waste, no pollution;
- Use less, reuse more;
- Recycle more, recover more;
- Reduce and re-use;
- Encourage the use of resources more efficiently.

The present waste management policy in the EU is based on several principles such as prevention, reuse and recycling. The EU is currently trying to reduce its dependence on raw materials by developing alternative technologies for producing energy and other products from waste materials. EU has also launched a program called "Waste Framework Directive" which aims at reducing the amount of waste produced by companies.[32] The objective of this directive is to minimize harm caused by certain substances and products such as hazardous chemicals, heavy metals, PCBs and Dioxins etc. which are harmful for human health and environment in general.

[30] O. H, Yakubu, Addressing environmental health problems in Ogoniland through implementation of United Nations environment program recommendations: environmental management strategies, (2017), published by MDPI.
[31] AV Shekdar, Sustainable solid waste management: An integrated approach for Asian countries, (2009), published by Elsevier.
[32] G Cecere, N Corrocher, Stringency of regulation and innovation in waste management: an empirical analysis on EU countries, (2016), published by Taylor & Francis.

3.3. Comparison of the Framework of Several Zero Waste Countries:

Many countries have developed their own unique strategies to help them make progress towards becoming a zero waste country. Zero Waste is defined as the goal of eliminating waste from landfills, incinerators, and other sources and replacing it with renewable resources. The Zero Waste framework is a way of measuring and comparing the implementation of SWM, as well as methods that have been proven to be effective in reducing waste. It was developed by the UN in 2011, and it has since been adopted by many countries around the world.[33] The framework includes five different categories: (1) source reduction, (2) reuse, (3) recycling and composting, (4) final disposal and (5) energy recovery.

3.3.1. Different Countries Approach to Become a Zero Waste Country:

Australia is the first country to take on the challenge of creating a Zero Waste program. They created a plan and developed a strategy to help achieve their goal. They also have an online resource center where you can find out more about their program.

In Germany the goal is to be able to reuse, recycle, and compost 100% of waste by 2038 and they are already now at 49% today. France & German approach are same, they have set a goal of being able to reuse, recycle, and compost 100% of waste by 2025. They are already at level of 52% today. In Japan the approach is moreover similar like Germany and France, they have set a goal of being able to reuse, recycle, and compost 100% of waste by 2030.[34]

In Canada the government has implemented several programs that are designed to encourage people to recycle more and reduce their waste. Some of these programs include curbside collection programs, which allow residents to put out their recyclable materials at home instead of having it collected by the city; community composting programs, where people can bring their food scraps and yard waste to be composted; and a ban on plastic bags at grocery stores, which was instituted in 2012.

[33] A Zaman, Zero-Waste: A New Sustainability Paradigm for Addressing the Global Waste Problem, (2022), published by Springer Publishing.
[34] Dr. S. Lehmann, Resource recovery and materials flow in the city: Zero waste and sustainable consumption as paradigm in urban development, (2011), published by Allen Press.

The United Kingdom was not as successful at implementing these types of programs, but they did implement some similar ideas that helped encourage people to recycle more and reduce their waste. For example, there is a program called Keep Britain Tidy which encourages people to keep their gardens tidy by keeping grass cut short and shrubbery trimmed; this program has been successful in reducing litter across the country. The United States and the United Kingdom both have a strong focus on recycling but they are very different in their application of these principles.[35]

3.4. Sustainable Waste Management Practice:

The need for SWM practices has become a global concern. The government of different countries have also adopted various policies and programs to promote zero waste. There are many countries like Norway, Sweden and Denmark in the world that have already started implementing WM practices which is sustainable. WM is becoming an important issue for every person. Each country has different methods of dealing with waste. Sustainability and recycling are very important in this regard because it helps to keep things like energy consumption low and at the same time achieve a goal of living cleanly and using less energy with good practices.

SWM Practices guide the development and implementation of WM practices in sustainable way, which balance environmental protection with economic need. These techniques reduce or eliminate problems associated with solid waste. They can be integrated into any existing waste management program and are an important strategy in reducing the impact of solid waste on the environment. SWM is more than recycling, composting, and reducing landfill waste. It's about using resources wisely and making sure your waste reduction efforts are environmentally sensitive. It is the practice of producing an optimal amount of waste while minimizing waste generation, use of raw materials and energy, as well as modifying processes and technologies. There are four steps to SWM: prevent, recycle, re-use, and compost.The practice of SWM requires a reconsideration of the traditional WM approach. It is not just about recycling, but also about preventing and reducing the use of resources. Consideration of economic and environmental factors must guide how resources are used.

[35] AU Zaman, A comprehensive review of the development of zero waste management: lessons learned and guidelines, (2015), published by Elsevier

Waste does not just have an impact on the environment, but also on our daily lives. Zero Waste is a concept that aims to end the waste cycle and promote resource conservation. It has already been adopted by most countries around the world, and it is now transitioning from being an idealistic goal to becoming an achievable reality. Through the approach of SWM practice any country can reach to the status of zero waste.

Chapter Four

Legal Framework for Waste Management in Bangladesh

4.1. The Environmental Conservation Act, 1995:

The Environmental Conservation Act, 1995 was enforced to protect the environment and its resources. This law regulates SWM and establishes a national planning agency to provide technical support to local governments.[36] The law also provides for a national waste disposal board, which sets standards for solid waste disposal and monitors compliance with these standards.[37]

The act has been implemented in Bangladesh since 2002 and it aims to protect the biodiversity and natural resources of Bangladesh. It also aims to protect the environment from any kind of pollution by law. In 2002, the government passed an amendment to the Environmental Conservation Act, 1995 which made it mandatory for all factories and industries to obtain a license from the government for operating in Bangladesh.[38] However, this has not been successful as many factories continue operating without a license while others have obtained licenses but fail to follow all regulations set out under this act in Bangladesh.

4.2. The Environmental Policy, 1992:

The environmental policy 1992 was enacted to protect the environment from pollution and degradation in a sustainable way. It also aimed at conserving biodiversity, vegetation, soil and water resources, as well as natural heritage of Bangladesh. This policy outlines the government's approach to sustainable development and sets targets for renewable energy use in industry, agriculture, and housing. It also outlines policies on recycling, landfills, and incineration of wastes.[39]

[36] The Environmental Conservation Act, Section- 4A (1995)
[37] The Environmental Conservation Act, Section- 4 (1995)
[38] The Environmental Conservation Act, Section- 12 (1995)
[39] United Nations Conference on Environment and Development (UNCED), Agenda- 21 of- National Environmental Policy, (1992)

4.3. National Clean Development Mechanism Strategy, 2001:

The National Clean Development Mechanism (NCDM) is a term used for international carbon markets which are set up under the Kyoto Protocol on climate change and implemented under the United Nations Framework Convention on Climate Change (UNFCCC). In Bangladesh, it is known as the NCDM. This instrument will provide an incentive mechanism for developing countries to reduce their emissions of greenhouse gases while they pursue their economic and social development goals of UNEP.[40] This strategy directs all major federal agencies to develop plans for improving environmental conditions in their respective jurisdictions. It also outlines policies on recycling, landfills, and incineration of wastes.

4.4. Water Resources Planning Act, 1992:

The Water Resources Planning Act 1992 relates to the development of a water-related infrastructure in Bangladesh. The Act provides for the establishment of a National Water Resources Institute and other related bodies.[41] It also deals with the development of water resources management plans, policies and WM programs by establishing a national commission on water resources development.[42] This law was passed by Parliament aims to regulate all aspects of water resources development and water WM.

4.5. Medical Waste Management and Processing Rules, 2008:

The Medical Waste Management Processing Rules, 2008 are aimed at improving existing medical WM system in Bangladesh. The rules regulate medical waste disposal, collection, transportation and treatment.[43] They also provide penalties for violation of the regulations & set out guidelines for medical waste disposal and processing.[44] They define medical waste as any substance that can potentially harm human health if generated in an improper manner. The rules also establish

[40] Kyoto Protocol, Article- 12 (2001)
[41] Water Resources Planning Act, Section-3 (1992)
[42] Water Resources Planning Act, Section-7 (1992)
[43] Medical Waste Management and Processing Rules,(2008) Rule-7
[44] Medical Waste Management and Processing Rules,(2008) Rule-11

standards for medical waste treatment facilities and required licenses for such facilities as well as individuals who handle or dispose of medical waste improperly.[45]

4.6. National Policy for Water Supply and Sanitation, 1998:

National Policy on Water Supply and Sanitation focused on treating damaged water supplies, sanitation services and establishing new services in rural and metropolitan areas. In urban water supply and sanitation the local authorities places special emphasis on the participation of the private sector and non-governmental organizations. This strategy provides some solid waste and recycling schemes, as- The local government bodies may transfer the collection, disposal and management authority of solid waste to the private sector. Required measures to recycle waste will be taken and encourage the use of organic waste material for compost and biogas production. It also encouraged the private sector including NGO's participation in sanitation.[46]

4.7. Shortcomings in Legal framework:

The Environmental Conservation Act 1995 is the national law that deals with the waste crisis and protection of the environment. The law has been amended in several times but many of its shortcomings still remain. Other laws related to WM in Bangladesh include the Hazardous Waste Management Act 1992, The Environmental Policy, 1992, National clean the development mechanism strategy, 2001 and Waste Control Order 2002 etc. these laws have been amended over time, but they still need more work to meet international standards on WM. These laws does not cover all types of waste. It does not clearly define who should be responsible for collecting, transporting, recycling and disposing of waste. The major problem with this law involves its lack of enforcement mechanisms or sanctions for those who break these rules or fail to follow them properly.

[45] Medical Waste Management and Processing Rules,(2008) Rule-5 & 6
[46] DPHE Programme, (1998) National Policy for Water Supply and Sanitation.

In addition any of these laws do not address the lack of monitoring of WM practices and compliance with existing laws. The government does not have adequate resources to enforce existing legislation or enforce new legislation on WM.

Chapter Five

Findings & Recommendations for Sustainable Waste Management Policy

5.1. Findings:

WM in Bangladesh is a problem that has been around for decades, and it continues to grow worse. The reasons for this are many, but they all have one thing in common which is mismanagement. The weak policy for WM, which is one of the reasons for the mismanagement of waste. There are also many administrative issues, because there are not enough people to deal with the problem. The implementation of the policy is also poor, as it takes too long and costs too much money.

The WM policy in Bangladesh is not inclusive. It is a policy that allows waste to be dumped in landfills and not to be used for other purposes. This has created problems for the people of Bangladesh because they have been dumping their waste on roadsides and other areas instead of taking it to a proper place where it can be disposed of properly. The government does not have enough funds to enforce proper WM practices, so it's up to citizens to make sure that their neighbors are following the rules.

Improper administration is another reason for mismanagement of waste in Bangladesh. There are many laws and regulations that govern how people should treat their waste in Bangladesh, but these laws are not being enforced appropriately by officials at all levels of government agencies. The current administration of the government does not have the capacity or expertise necessary to handle the WM issues that they face on a daily basis. The administration of waste in Bangladesh is not effective enough because there is no proper system or procedure for handling the waste.

The lack of proper implementation of policies can lead to mismanagement of waste. The government needs to do more than just issue policies, it needs to be able to implement them and make sure everyone knows what they're doing! They also need better systems for collecting data about where people throw their trash so that they can determine if there are any illegal dumping sites or if people are just being lazy about throwing things away properly.

In Bangladesh lack of coordination between different departments and agencies involved in WM. There are no clear lines of authority and responsibilities for each department or agency, which

causes confusion among all parties involved in WM decisions and activities such as construction projects or development plans for new communities. This lack of clear lines of authority leads to delay in implementing new laws related to WM and creates problems when trying to coordinate different departments activities related to resource conservation initiatives such as recycling programs or composting initiatives.

Furthermore, lack of awareness among people regarding the importance of proper segregation and WM, inadequate number of waste disposal sites at local level and poor quality of existing WM infrastructure are present in Bangladesh.

‘BLAST V. Bangladesh and others -Untreated Industrial Waste- Case’ Writ Petition No. 5007 of 2006.

In that case BLAST filed a writ petition and they challenged the continued inactivity of the concerned authorities specifically the Ministry of Environment, to address the discharge of untreated industrial waste into Bongshi River, Dholai Beel and the Dholai Canal by many factories around Savar Export Processing Zone (EPZ). Which causes serious environmental degradation, pollution and health risks to those living in areas.

Here the petitioners argued that the failure of the concerned authorities regarding to industrial WM is the main causes of this problem. The authorities didn’t comply with the provisions of the Environmental Conservation Act, 1995 and the Environmental Conservation Rules, 1997 and also allowing most of the industrial units to operate without issuing any Environmental Clearance Certificate, Environmental Impact Assessment and without Installation of Effluent Treatment Plants which cause the failure to control discharge of industrial waste, that refers the violation of the right to life as guaranteed under Article 32 of the constitution.

On 25.05.2006 the High Court Division issued a Rule that show cause why it should not declare the respondents have failed to discharge their statutory and constitutional obligations and directed to ensure installation of adequate waste treatment devices in the Savar EPZ. In 2022, the hearing of this case is pending.

'Farooque v. Government of Bangladesh Write Petition No. 891 of 1994 (2001.07.15) (Industrial Pollution Case)'

In this case Dr. Mohiuddin Farooque, Secretary General, Bangladesh Environmental Lawyers Association (BELA) being dead Ms. Syeda Rizwana Hasan, Director (Program), representing Bangladesh Environmental Lawyers Association (BELA) filed an application against the government under Article 102(1) and (2) of the Constitution of the People's Republic of Bangladesh. In THE SUPREME COURT OF BANGLADESH HIGH COURT DIVISION through special original jurisdiction.

Here, the petitioners prayed for appropriate relief regarding to the matter of control of pollution from industries and factories situated all around Bangladesh. The showed a survey which had been conducted by the Department of Environment Pollution Control provided that ecological imbalance was being caused continuously due to discharge of various industrial wastes into air and water bodies. The petitioners allege that Bangladesh has not made much progress in preventing and reducing pollution caused by the discharge of hazardous industrial wastes despite many legislative provisions on environmental protection.

The court was of the view that although various provisions had been enacted the Government had failed to execute and perform its duties to the letters of the law, that's why the polluting industrial units and the factories continued to pollute the waters, air & rivers.

5.2. Recommendations:

In order to provide the best WM policy for Bangladesh, there are a few recommendations that I would like to makes are discussed below-

i. Bangladesh needs to improve its collection and disposal systems for all types of waste. Currently, only about one-third of waste is collected in the country and disposed of properly, which means that more than half of all waste is simply being dumped into rivers or landfills & this practice is should avoid.

ii. The government should implement a comprehensive WM policy that encourages the use of reusable materials, reduces waste generation, and increases recycling. This policy should be a top priority for the country's leaders, who can take steps to ensure that it is implemented effectively.

iii. I think it is important that this policy be enforced by an official body. These bodies should have the power to make sure that everyone abides by the rules and regulations set out under this policies.

iv. Expanding education towards citizens about proper disposal of waste so they understand how their actions impact others other people in their communities. This education should include classes on environmental conservation as well as instruction on proper composting methods. So people will encourage what to do if they want to reduce the amount of trash they generate at home or work.

v. As different types of waste are generated from different mediums so their collection, processing and disposal method should also be different depending on the subject .

vi. To provide an outline of a plan on handling all types of waste as well as what should be done with it once it's disposed of.

vii. Enact legislation that makes it illegal for people to burn plastic waste and dispose other waste without disposal facilities and therefore a penalty must be made on a large scale for breaking these rules so that people know what will happen if they do not follow them properly.

viii. Authorize municipalities to collect garbage from households and businesses in order to dispose of it at the facilities designated by the government.

ix. To make easier and accessible policies. It would be helpful if the government made it easier for people to recycle materials, including paper, plastic and metal items.

x. To frame a waste management policy that is based on scientific principles, and that will help develop long-term solutions for dealing with the country's increasing waste problem.

xi. Reduce our own personal waste production by using reusable bags, using cloth napkins instead of paper ones.

xii. The government should establish clear guidelines for businesses and residents on how to properly dispose of their waste, and it should establish a system for monitoring compliance.

5.3. Conclusion:

The WM exigency in Bangladesh is a serious issue that will have long-term consequences for the country's economy, health and the environment. The government has been trying to address the problem by building new waste transfer stations and incinerators, but these facilities are still not enough to deal with the increasing amount of WG by citizens across the country. There are still room for improvement that, the government could invest in better infrastructure so that it can collect and transport waste more efficiently.

The best way to solve this problem is through community action. The government can do its part by providing incentives for people to recycle or compost their waste (such as tax cuts), but without local action, these initiatives will just be temporary Band-Aids on a much bigger problem. Community action can help ensure that the landfills aren’t being used as dumps and education about WM is needed so that people know what they are doing before they start throwing things away.

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