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Assessment of the Legal Framework Regulating Waste Management in Bangladesh

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ABSTRACT

In Bangladesh, the difficulties associated with waste management have taken on a major dimension during the past several decades. The high population growth rate and rise in economic activity in Bangladesh's metropolitan regions, along with a lack of waste management training, make attempts to enhance waste management services difficult. In Bangladesh, per capita trash output in urban residential areas is much greater than in rural residential areas. The nations' capacity to collect, handle, dispose of, or recycle trash in a cost-effective way is severely constrained. Bangladesh, like the rest of the globe, has seen a considerable increase in environmental threats. Attackers in the atmosphere represent an overwhelming danger to humans and other living things. Wetlands, aquatic bodies, coral reefs and the seas are all threatened by the dumping of hazardous waste and pollution from land-based sources. There is also rising worry about the negative socioeconomic, public health, and environmental effects of e-waste toxicity. Standard technology, infrastructure, skilled staffs, and budgetary constraints are significant problems for private business owners. They now require e-waste management standards and guidelines in order to do business in an environmentally sustainable manner. Whereas many developed and developing nations have established a scientific method for efficient garbage disposal, Bangladesh has yet to formulate a "Comprehensive National Strategy" to effectively manage the problem of trash disposal. Some laws and regulations, such as the Environment Conservation Act of 1995, contain measures for the reduction and control of waste emissions from diverse sources, as well as their disposal. The goal of this study is to look into and evaluate how useful Bangladesh's current laws are for managing waste.

Keywords: Waste, Disposal, Management, Environmental law, Framework, Bangladesh, and Recycle.

INTRODUCTION:

The problem of trash creation is one of the by-products of contemporary science and technology advancements, urbanization, rural-urban migration, industry, population explosion & so (Abedin & Jahiruddin, 2015). There is no industry or development activity other than garbage production. Waste is produced by even the most technologically sophisticated industrial and manu-

facturing operations (Md. Abdul Karim Khan, 2004). "Trash is an inescapable result of human activity; economic expansion, urbanization, and improving living conditions in cities have all resulted in a rise in the volume and complexity of waste created" (Irwandia and Farida, 2009). Rapid urbanization and population growth are mostly to blame for Bangladesh's rising garbage accumulation rate. Many of the wastes are

dangerous and destructive, posing a serious threat to human health and the environment. "A significant amount of wastes, 40-60 percent, are not adequately kept, collected, or discarded in specified sites for final disposal due to a lack of motivation, knowledge, suitable technology selection, and enough financial support" (*Bangladesh Waste Database 2014 Waste Concern Technical Report Series*, n.d.). As a consequence, this obstinate trash affects the environment. "Unyielding garbage management has so far been disregarded and least investigated environmental challenges in Bangladesh, as in many other developing nations" (Zurbrügg, 2006a). In recent years, concerned stakeholders have begun to consider this region to be an essential component in protecting human health and the environment. As a result, this study advises that Bangladesh revise its present waste management regulations to develop a comprehensive waste management policy that takes into consideration the danger to the environment.

Waste and Waste Management Theories

The word "trash" comes from the Latin phrase "res derelicta," which meaning "abandoned item." The word is said to have originated from the notion of "throwaway" culture (Asian Development Bank, 2004). In this way, Japan is a forerunner. It has implemented 3R (reduce, reuse, and recycle) programs for scientific waste management and created a comprehensive 3R National Strategy to ensure trash reduction, reuse, and recycling (Sarwar, 2005). "Reducing waste, reusing, and recycling resources and goods is often referred to as the " "RS". "Reducing" implies "choosing to utilize items with care in order to decrease waste generation" (Hossain et al., 2021; Jahan et al., 2016).

Reusing entails the repeated use of a material or components of a substance that are immobile yet have exploitable properties. Recycling denotes the use of garbage as a source of revenue. Waste reduction may be accomplished in a systematic manner by concentrating primarily on the first of the 3Rs, "reduce," followed by "reuse," and finally "recycle." The 3R ingenuity aspires to improve the world "Through the effective application of wherewithal and resources, the 3R's" are being implemented across the globe in order to build a sound-material-cycle culture. It was agreed upon as a new G8 project during the G8 Sea Island

Summit in June 2004. It was also agreed to capture a ministerial assembly in Japan in the year 2005 in order to formally launch the 3R initiative (Namiki, 2008). While the 5R idea is introduced after the 3R concept, it adds two extra phases (recovery and reject) to the waste management course of action. "The first is recover,' which entails repurposing materials that can no longer be recycled into energy sources or ecologically friendly resources in order to keep them out of landfills" (Amanda Bahraini, 2019). "The Last step is refusing,' which is the dispersal of garbage that cannot be recycled or cast-off at the landfill." Jackson (Jackson, n.d.). The inverted triangle 3'R (reduce, reuse, recycle) concept depicts the amount of garbage that should be managed in each string (Singh et al., 2017). This indicates that, in reality, the majority of waste assembly should be compact from the start. The substances are reused only until the formation of trash can no longer be prevented. From start to finish, an up-cycling course or the creation of handicrafts are two examples of reuse approaches. "When a material can no longer be utilized in its original form, it is recycled and melted, chopped, and molded into a new product of a lower grade" (Erik Norgaard & Jordforbedringog Roald Sørheim, n.d.). "The loss of quality in recycled materials, as well as the energy and resources required to recycle garbage, are two of the many reasons why recycling is not the top priority when it comes to properly disposing of waste." The primary goal should always be to decrease/prevent waste creation from the start, i.e. reduce" (Zurbrügg, 2006b). Waste is an etymological term that refers to anything that is no longer useful and should be discarded. In other terms, 'waste' refers to materials, food, and other items that are no longer required and must be discarded. The word "trash" may also mean "refuge" or "junk" (Salam, n.d.). Many attempts have been made on a national and international level to define the word "waste" legally. To begin, I will explain the legal meaning of the word "waste" as defined in several national and international agreements, and then reach a conclusion defining "waste" from the standpoint of Bangladesh. "Waste" is defined by the WHO as "anything with physical, chemical, or biological qualities that need particular management and disposal methods to minimize health hazards and other negative environmental consequences" (Azim et al., 2011).

Existing Waste Management Legislation and Regulations

Various environmental regulations have been enacted from time to time to address the state's horrible environmental circumstances. In Bangladesh, there are around 200 area-specific legislation in effect that deal with environmental concerns. They focus on land usage, space above soil and water, hazardous waste, sound, noxious chemicals, unyielding waste, forest preservation, flora and wildlife protection, mineral resources, coastal area management, industry, ecological wellness, and hygiene, among other things. Prior to 1995, there was no such all-encompassing piece of law in Bangladesh to thoroughly define the term "waste." Despite the fact that it is not comprehensive for all purposes, the Environment Conservation Act of 1995 gives a very reasonable definition of 'wastes.' In Bangladesh, there is currently no comprehensive legislative framework for garbage management. However, garbage disposal is governed by a variety of area-specific laws in Bangladesh.

The Constitution of Bangladesh

In recent days, there has been a considerable rise in awareness of the threats to the global environment, and a broad range of environmental problems is now the topic of grave worry. Countries like Bangladesh, on the other hand, have yet to determine or comprehend the environmental threats, because the Bangladeshi Constitution does not explicitly mention the environment in any of its provisions, whereas our neighboring countries, such as India and Malaysia, have specific provisions in their constitutions addressing environmental issues. "Economic, social, and cultural rights, which are second-generation human rights, are the essential foundations of state policy contained in Part II of Bangladesh's Constitution" (UNESCO, 1997). Fundamental rights enshrined in Part III of the Constitution, on the other hand, are civil and political in origin, and are individual or first-generation human rights safeguarded by judicial enforcement and judicial reviews (Springer, 2020). Another third-generation human right, the 'right to development and the right to the environment,' is missing from our constitution (Springer, 20). Part III of our constitution has a number of such clauses covering basic rights. Article 31 of the Constitution, for example, guarantees the right to

life, which includes the right to live in a pollution-free environment (The Constitution of Bangladesh, n.d.). In two decisions (Ain O Salish Kendra versus Bangladesh, 1999 BLD 488 and Prof. Nurul Islam V State, 2000, 52 DLR 413), the Supreme Court of Bangladesh upheld the argument that the 'right to life' inscribed in the Constitution as a basic right includes the right to live in a healthy environment.

The Environment Policy, 1992

The 1992 United Nations Conference on Environment and Development (UNCED) in Rio de Janeiro, Brazil, paved the stage for the adoption of comprehensive environmental legislation. The UNCED's Agenda 21 asked member states to adhere by international legal instruments and to incorporate them into national legislation for implementation. "We also decide that we undertake to observe and give effect to all responsibilities and obligations that descend upon us as a member of the family of Nations, and to abide by the Charter of the United Nations," says Bangladesh's Proclamation of Independence (Mujibnagar, 1972). Bangladesh is required to execute Agenda 21 as part of its national program strategy as a signatory to the international legal document. As a result, Environmental Policy was created for the first time in 1992 to eliminate severe hurdles to environmental conservation and progress. Bangladesh's Ministry of Environment and Forests and Department of Environment (DOE) were established in 1989. In terms of the legislative framework governing waste disposal in Bangladesh, there is no explicit and comprehensive law in place to address the risks associated with garbage disposal. There are, however, several Acts that deal with environmental issues on a sector-by-sector basis. In this aspect, the 1992 Environmental Policy was a big step forward. Although not directly, but indirectly, the Policy provides several sector-wide notable ways out of expanding waste disposal challenges.

The Environmental Conservation Act, 1995

The Environmental Conservation Act of 1995 is now the most important legal framework in Bangladesh for protecting the environment. "Prior to the development of Industrial projects, environmental concerns must be given sufficient attention and prior environmental clearance must be acquired," according to Section 12 of the Act of 1995. The key features of the Act can be

summarized as follows: environmental clearance, regulation of industries and other improvement actions discharge permit, promulgation of standards for quality of air, water, noise, and soil for different areas for different purposes, promulgation of standard limit for discharging and emitting waste. The Department of Environment is led by a DG who has completed authority over the department, including the ability to shut down activities that are harmful to human life or the environment. Any individual who has been harmed or is expected to be harmed by hazardous waste may file a claim for damages with the DG, as well as a designation of a polluted region as an ecologically significant area (Section 5, ECA, 1995). Section 16 of the Act also provides for a maximum penalty of 10 years in jail or a maximum fine of Tk. 10 lac, or both. In Bangladesh, the Environment Conservation Act of 1995 is the most visible piece of pollution prevention law. The Act addresses all environmental problems with the goal of preserving, improving, regulating, and minimizing pollution. However, a technical examination of the Act will reveal that it has flaws, for example -

- 1) "There is no one-size-fits-all criterion for measuring pollution levels.
- 2) The aggrieved party or parties who have been harmed by pollution or environmental deterioration are unable to bring their case directly to the Environmental Courts.
- 3) In terms of the method for imposing penalty, the Act is silent.
- 4) There is no provision in the Act for public engagement before issuing a clearance certificate."

Under the Environmental Conservation Act of 1995, the Environmental Conservation Rules of 1997 separated industries and projects into four groups. These are the categories -

- 1) Green
- 2) Orange-A
- 3) Orange-B and
- 4) Red.

Applicants seeking environmental clearance for new businesses and projects in the orange-B and red categories must submit a preliminary assessment (FEE) report and an Effluent Treatment Plant design (ETP).

Before establishing or importing tools for any sector or project in the Red category, an environmental impact assessment (EIA) must be conducted and the EIA report must be certified by the Department of Environment (DOE). "Prior to launching of projects falling under the Orange-B and red categories, final permission from DOE is necessary," according to Schedule-I of the Environmental Conservation Rules, 1997. All urban and fill sites, as well as the construction of any kind of incinerator, fall under the red category, and a DOE environmental clearance is required."The Rules state that for industries in the green category, the Environmental Clearance Certificate (ECC) must be renewed every three years, while the ECE must be renewed every year for industries in the orange-B and red categories. However, the ECR, 1997, does not specify the documentation required for ECE renewal. Furthermore, the ECR 1997 has no precise criteria for siting Industrial Plants. The ECR of 1997 states that if an industry violates a commission standard for gaseous, liquid, or solid emissions, the DOE will send warnings and directions to remedy the problem within a certain time frame, but the ECR does not specify how many times such warnings and directives will be issued.

National Policy for Water Supply and Sanitation 1998

After the independence of Bangladesh, the government prioritized the remediation of contaminated water supplies and hygiene services, as well as the establishment of new services in rural and urban regions, under the Department of Public Health Engineering (DPHE). The Ministry of Local Government's Local Government Division places a strong focus on private sector and non-governmental organization engagement in water delivery and sanitation in urban areas. The following are some of the strategy's unyielding trash and recycling plans

- 1) "Wherever possible, local government bodies (City Corporations and Municipalities) may outsource solid waste collection, disposal, and management to the private sector."
- 2) Measures must be made to recycle as much garbage as feasible and to encourage the use of organic waste materials for composting and biogas generation.

- 3) Participation of the private sector, especially non-governmental organizations, in sanitation is encouraged" (GOB, 1998).

National Clean Development Mechanism (NCDM) Strategy, 2001

The trash division has been highlighted by the Ministry of Environment and Forest as one of the potential areas for attracting Clean Development Mechanism (CDM) economics to the country. The Kyoto Protocol recognizes the clean development mechanism as a mutual device. It has the potential to assist developing nations in attaining sustainable development by encouraging contemporary country governments and corporations to engage in environmentally responsible ventures. CDM allows for direct investment in projects from outside the country, lowering greenhouse gas emissions. The waste sector choices prevent methane from being produced during bio methanation procedures. The resulting methane may be vented or utilized to create electricity. Landfill gas recovery, composting, chick waste treatment, and human excreta management through Eco sanitation & waste water management are some of the waste sector possibilities for Bangladesh.

The Bangladesh Labour Act, 2006

Bangladesh is pursuing long-term growth through expanding industry in response to the agricultural revolution. Unfortunately, uncontrolled dumping of industrial waste on agricultural land and water bodies puts agriculture in jeopardy. The lack of rigorous control over hazardous waste management has resulted in indiscriminate disposal of hazardous trash around the nation, posing grave health and environmental dangers. Bangladesh is a signatory to the Basel Convention on the Control of Transboundary Movements of Hazardous Waste (Basel Convention) and the Stockholm Convention (Stockholm Convention). Hazardous waste management is a relatively under-publicized aspect of Bangladesh's industrial success. Bangladesh established a regulatory framework in 1996, but there was no explicit legal support for hazardous waste management at the start of the RETA. There are a variety of traditional courses of action and laws that may provide assistance for hazardous waste management while also meeting the Basel Convention's requirements. "Effective preparations should be provided in every facility for disposal of wastes and effluents owing to the pro-

duction process carried on within," says Section 54 of the Bangladesh Labour Act of 2006. "Arrangements to be established at an enterprise for disposal of its wastes & effluents or for needing clearance from a specified authority for such arrangements," according to Section 351.

The Penal Code, 1860

In Bangladesh, the penal code is a comprehensive set of law that covers every part of government, including garbage disposal and administration. "Nuisance" is defined as "unreasonable interference with the plaintiff's use or enjoyment of land or any right over it, or in connection with causing harm to the plaintiff" (*Reserve Bank of India vs Ashish Kushum, 1996*). There are two sorts of annoyance.

- 1) Public nuisance
- 2) Private nuisance

"A person is guilty of a public nuisance if he does any act or makes any illegal omission that causes any common injury, danger, or annoyance to the public or to the people in general who dwell or occupy property in the vicinity, or which must necessarily cause injury, obstruction, danger, or annoyance to persons who may have occasion to use any public right," according to section 268 of the Penal Code, 1860. The plain reading of section 268 indicates that if garbage is not properly disposed of, it will constitute a public nuisance, since incorrect waste management harms, risks, or annoys the public in a variety of ways. Some articles of the Penal Code have been enacted to punish some of the consequences of poor waste management. "Whoever illegally or negligently commits any act likely to spread the infection of any illness hazardous to life must be punished with imprisonment of either sort for a time that may extend to 6 months, with fine, or with both," according to Section 269. We all know that improper garbage disposal causes contagious illnesses, and whoever causes them is subject to punishment under sections 269 and 270. "Whoever willfully corrupts or fouls the water of any public spring or reservoir shall be punished with imprisonment of either sort for a time not exceeding three months, or with a fine not exceeding five hundred taka, or with both," according to Section 277. As a result, garbage should not be put in any public space or lake that makes it unsuitable for its intended function.

The Code of Criminal Procedure, 1898

The mother adjective legislation relevant to putting offenders behind the bird is the Code of Criminal Procedure. "Whenever a District Magistrate or any other Executive Magistrate considers on receiving a police report or other information and on taking such evidence (if any), nuisance should be removed from any way, river, or channel which is or may be lawfully used by the public," says Section 133 (1) of the CrPC. A magistrate in this situation may issue a temporary order directing the individual producing the annoyance to confiscate the annoyance within a certain time frame.

The Ports Act, 1908

This Act includes provisions for waste management and port disposal, such as "the government may enact regulations for controlling the way in which oil or water mixed with oil should be discharged in any such port and for the disposal of the same" (Section 21). Any individual who disobeys any regulations is subject to a fine of up to one thousand taka for each offense. "Any person who willfully vitiates the environment in any location in order to make it toxic to a person's health, which may be readily done through incorrect waste disposal, shall be penalized with a fine of up to 500 taka" (Section 278, PC). Sections 284 and 286 of the Criminal Code penalize negligent activity with regard to dangerous materials and substances that are liable to explode. As a result, if waste disposal is not done properly, the individual may be prosecuted under these laws. "Whoever causes a public nuisance in any circumstance not otherwise penalized by this law will be punished with a fine that may amount to taka 200," says Section 290. Part 290 of the criminal code punishes individuals "who, by failing to properly dispose of garbage, generate any sort of public nuisance not covered by any other section of the penal code."

Bangladesh Wildlife (Preservation) Ordinance, 1973

Many provisions for the preservation of animals have been incorporated in this Ordinance. However, since Bangladesh is a flood-prone nation, many wild animals are killed when the forest region is flooded, and their ruined bodies / rotting bodies of wild animals are scattered across the forest. Organic wastes like this damage the environment of wild animals, which might

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have a severe influence on them. There is no provision in the ordinance pertaining to appropriate disposal of such organic wastes to safeguard against such contamination.

Water Resources Development Act, 1992

Bangladesh is renowned as the "Motherland of the River," which is the primary source of water for domestic usage. These rivers are contaminated as a result of rubbish being thrown into them directly. Buriganga was formerly considered Dhaka's lifeblood. Buriganga has now been added to the list of dead rivers since no biological forms have been discovered there. This is owing to massive industrial and man-made trash dumping. The reality is that hazardous garbage has accumulated in Bangladesh's Buriganga, Balu, Shitalakhya, and other rivers, making it almost impossible to recycle the water. Over the years, the government has allowed industries to contaminate the rivers, canals, and swampland in and around the capital to the point that ground water has become pitch black in many places. At the same time, most industries that are required to establish 'Effluent Treatment Plants (ETP)' do not comply with the directive, and the government has taken no action against the offenders. Furthermore, the Department of the Environment (DOE) is completely unaware of the situation.

Medical Waste (Management & Processing) Rules, 2008

Medical waste has been responsible for a significant number of fatalities all around the globe. According to a 2018 WHO study, the total amount of general and non-harmful waste created by medical care activities was over 85%. The remaining 15% is made up of dangerous compounds that might be infectious, poisonous, or radioactive. To handle the issue legally, Bangladesh's government passed the Bangladesh Medical Waste (Management and Processing) Rules, 2008, which regulates the disposal of medical and hospital waste in Bangladesh. There is no special regulation governing the disposal and treatment of medical waste. Prior to that, section 269 of the Penal Code of 1860 may be used to deal with the situation. "Any person who negligently or unlawfully commits any act that may cause the spread of infectious illness and impair public health will be penalized with 6 months' imprisonment or a fine, or both," according to the pro-

vision (Section 269, Penal Code). However, it is a source of considerable worry that, despite the existence of strict rules, our country's problems remain unresolved. "In our medical government, enacting regulations is a 'white elephant'" (Zahur, 2007).

The Medical Waste (Management and Processing) Rules, Rule 8, allows for the creation of seven disposal zones. Nonetheless, Dhaka has the sole specialized dumping site for medical waste, which is woefully insufficient to fulfill the demands of the city's rising number of hospitals. Rule 3 calls for the formation of seven divisional powers in each of our state's seven divisions. It was expected to be finished within three months of the law's passage, according to the regulation. Regrettably, even after 12 years, neither the divisional power institution nor anybody responsible for the monitoring and disposal of medical wastes has been developed. Medical wastes must be kept apart from other general wastes throughout collection, covering, storage, and transport to disposal places, according to Rule 7 of the Medical Waste Rule. Unfortunately, the reality is that practically every hospital disposes of its trash by mixing them in with ordinary garbage and without sterilizing them. In Bangladesh, no designated places for the disposal of medical waste have been developed, making the dumping of medical waste in canals the only option (Uddin *et al.*, 2017).

The ecosystem and food chain were ultimately harmed as a result of these unwrapped dumping zones. Rule no. 5 stipulates that three kinds of permits will be granted -

- 1) Wrapping and storing;
- 2) Collection and transportation and
- 3) Refining and removal to a third party to deal with disposal mechanisms.

Regrettably, these three agricultural responsibilities will be handled by a third party hired specifically for the job. Prior training is a need for refining and removing medical wastes, according to Rule 6. Because most of the rule's requirements have yet to be implemented, such as the formation of divisional authorities, third-party training to deal with disposal mechanisms seems to be a fortress in the sky.

RESULTS:

In light of the preceding examination of numerous enactments, policies, and guidelines, it is clear that Bangladesh lacks a single legislation that comprehensively addresses the challenges of safe waste disposal. The DG of the Department of Environment (DOE) has been granted broad powers and authority to maintain and safeguard the environment from any sort of damage under the Environment Conservation Act, 1995. So, if the Director General (DG) believes that there is a risk of environmental deterioration as a result of trash emission, treatment, or transportation from any source or industry, he may take whatever action he deems appropriate. However, there are several technological issues that prevent him from effectively using the DG authority that has been bestowed upon him. We recently spoke with Mr. Ziaul Hogue, the DOE's Deputy Director General. In response to a question, he said that after receiving a complaint under Section 8 of the ECA, 1995, they had to work hard to investigate and file a case with the Environment Court, but that the judges of the court are not always strict with the accused, and that in most cases, they impose very light punishment, disappointing the investigating officers. However, because environmental crimes need scientific and technological understanding, it is critical to acquire appropriate information in order to make an informed decision. Regrettably, conventional court judges sit in the environment court, but there is no environment expertise in the decision-making process to assist them. The Act necessitates the mention of environmental expertise, as well as the training of judges expressly for environmental courts, who will have scientific and technical knowledge relevant to environmental concerns. Because environmental crimes need scientific and technological understanding, it is critical to acquire appropriate information in order to make an informed decision. Regrettably, the judges of the conventional court, for example, sit in the environment court, but there is no environment court. To assist them in the decision-making process, they need particular environment knowledge. The Act necessitates indicating environmental knowledge together with training. Judges who will have scientific and environmental expertise, particularly for the environment court technological expertise in the field of environmental concerns (Shovon *et al.*, 2021). In answer to

another question, he said that there was a technical issue with launching the Mobile Courts Operation at the field level under the current DOE legislation, which prohibits Magistrates from imposing fines over \$10,000. As a result, they had to abide by the Pure Food Ordinance of 1959 as well as other BSTA legislation in order to impose harsher penalties. Many enterprises do not seek for clearance certificates, he added, in response to the issue of why and how industries contaminate the environment despite receiving clearance certificates from DOE and meeting all legal criteria. He also said that an estimated 72 percent to 80 percent of industries obtained a Clearance Certificate, and that with four or five DOE inspectors, it is impossible to identify those that do not have clearance certificates. The Deputy Director General also raised worry about the fact that many dishonest business owners are abusing the Clearance Certificate criteria, such as establishing an ETP, by taking advantage of the DOE's low workforce. "No industry must be formed and no Project shall be conducted there without receiving environmental clearance," according to section 12 of the ECA, 1995, read with regulation 7 of the ECR, 1997. An environmental impact assessment (EIA) is required for this purpose and must be authorized by the DOE. However, the ECR 97 makes no mention of the EIA standard. In answer to a query on how the DOE assesses the EIA standard, he said that the DOE has developed an EIA guideline. He went on to say that we occasionally recommended people to adopt the ADB's guidelines and other international EIA requirements. He also claimed that the DOE lacked a "Legal Cell," which is critical for taking legal action against the culprits. As a consequence, they had to turn to non-governmental organizations (NGOs) such as BELA for legal assistance. He also revealed their inability to carry out their duties owing to technical issues, such as having to deal with multiple workers and owners organizations linked with various political parties, as well as intervention from governing party officials, before questioning significant polluting enterprises. In terms of the Environment Court Act 2010, the aggrieved party has very little chance to go straight to court without first exhausted the DOE's remedies. The Environment Court's jurisdiction to take cognizance was severely limited by Section 17 of the ECA, which was enacted in 1995. If effective exec-

ution can be secured, the Environment Conservation Act of 1995 and the Rules developed under it seem to be thorough in adequately addressing the problem of garbage disposal. Waste-emitting enterprises and Industries are at the top of the list. However, the Factories Act of 1965 allows for a lenient penalty for waste-emitting managers. Factories that generate garbage face a fine of up to one thousand taka, which is equivalent to a beg in nature. However, with the implementation of the ECA, 1995 and Rules, 1997, factories and industries are controlled, and the DOE issues a clearance certificate for their creation. The Brick Burning (Control) Act of 1989 mandates the acquisition of a license before burning brick, creating a brick-field, or producing brick. However, the Act makes no mention of the specifics or safeguards that must be met in order to get a license to dispose of trash released by burning bricks. However, since Brickfield is within the ECR 1997's Red category, a clearance certificate must be acquired in accordance with the law. Interference with the use or enjoyment of land or any right over it, or in connection with inflicting damage; nonetheless, the Code allows an aggrieved party to move to court without first making an application or complaint with DOE. The Code of Criminal Procedure takes a step further in addressing public garbage disposal by allowing a court to issue a conditional order compelling the person creating the annoyance to remove the nuisance within a certain time frame. Upon obtaining a police report or other information from the victim, the magistrate may issue such an order. In the north-western section of the Bay of Bengal, St. Martin Island is the lone coral island and Bangladesh's southernmost point. Saint Martin's, a coral island, is one of the country's most popular tourist destinations. However, garbage, both biodegradable and non-biodegradable, is strewn throughout the island. The island's ecological balance and beauty are being harmed by this rubbish.

The stink of this trash is bothering both locals and visitors. Every year, they dump various forms of rubbish on the beach. Many local restaurants also dump trash on the beach at the same time. There are no figures on how much waste is produced. The vacationers are disgusted by the beach's unsanitary and unclean surroundings. Glass bottles, plastic bottles,

empty chip and pickle packets, polythene, mugs, straws, cookie packets, and nylon rope are among the non-biodegradable garbage dispersed over an area of one and a half to two kilometers. There is home garbage in addition to the waste from more than 100 large and small hotels and restaurants. Hotel and motel rubbish is dumped directly into the water, rendering the beach unfit for holidaymakers. The Ministry of Environment and Forests recognized six regions of the country as "ecologically critical places" on April 19, 1999, including Saint Martin's Island, Cox's Bazar, and Teknaf Beach. Despite this, a number of environmentally damaging activities, including as free visitor mobility, the destruction of the screw pine forest, and the lifting of stones for construction projects, have exacerbated the island's erosion. Apart from that, the extraction and supply of snails, oysters, corals, and stones has continued.

Recommendations

As a result of the foregoing assessment, the following proposal for appropriate waste disposal may be suggested –

- 1) The DOE's current personnel should be expanded from 244 to 1783, as requested by the DOE, in order to effectively execute the terms of the Environment Conservation Act of 1995.
- 2) The Environment Conservation Act of 1995 and the Rules of 1997 must be rigorously implemented.
- 3) In the DOE, a distinct legal cell for the settlement of legal issues should be formed.
- 4) It is necessary to adopt comprehensive trash disposal legislation.

Measures should be taken in the following sections

Solid Waste Management in Municipalities

- 1) Each municipality should have its own Action Plan for efficiently tackling SWM concerns, complete with execution techniques.
- 2) Every city should have a sanitation action plan that incorporates solid waste management (SWM).
- 3) To effect the necessary change in attitudes and behaviors, public awareness must be raised.
- 4) Institutional capacities should be bolstered by providing the necessary and sufficient amount of

essential equipment, as well as competent people with hands-on, cutting-edge training.

- 5) Municipalities should provide appropriate and enough arrangements for solid waste treatment and recycling.
- 6) Municipalities should be provided with sufficient and necessary legal assistance when it comes to solid waste management.
- 7) To enhance solid waste management services, private sector participation in garbage collection, transportation, and recycling should be promoted.
- 8) Throughout the process, cooperation between the government and non-profit organizations should be established.

Medical Waste Management

- 1) In cooperation with both stakeholders and the general public, a complete Medical Waste Management Rules (MWMR) should be developed.
- 2) MWM guidelines should be developed in collaboration with the line ministries.
- 3) Provisions for active participation of city corporations and municipalities in MWM should be created.
- 4) MWM courses should be included in medical school and B.Sc. nursing programs.
- 5) In MWM, private sector entrepreneurship should be encouraged.
- 6) Enforceability should be delegated to the Local Government Health Directorate.

Waste Management in Saint Martin Coral Island

The current study also acquired a lot of information through an expert opinion survey about the island of Saint Martin's challenges and potential. A collection of recommendations has been proposed to enhance the geo-environmental status of the unique coral island

- 1) Because Saint Martin's Island is a coral island, it should be conserved as a natural ecosystem, despite the fact that most of it has changed. Because there is no systematic land use on this island, the government and related authorities should implement a proper systematic land use plan.
- 2) Integrated Solid Waste Management Process (ISWM) wastes would be managed by reducing the amount, reusing the products, and recycling the non-biodegradable components, according to

the ISWM wastes would be managed by reducing the amount, reusing the products, and recycling the non-biodegradable components, according to the ISWM wastes would be managed by reducing the amount, reusing the products, and recycling the non-biodegradable components, according to the ISWM wastes would be managed by reducing the amount,

- 3) The use of plastic objects by tourists and locals may pose a threat to coral and other living creatures. As a result, its use on this island should be tightly forbidden.
- 4) It is recommended that a public awareness campaign be organized for locals and visitors to reduce pollution, sewage, waste materials, sewerage disposal, and waste management system as required by the site.
- 5) Waste mismanagement is a problem on this island due to a lack of a permanent disposal location and waste-disposal bins. As a result, a sufficient number of closed bins (permanent or temporary) should be placed throughout the island to prevent the spread of bed odor. Strict laws prohibiting the use of ground water by hotels should be devised and implemented. Tourists are the ones who cause the most waste mismanagement. As a result, severe laws and regulations should be placed on tourists to prevent them from throwing trash everywhere.

Waste Management

Industrial and Hazardous

Waste Reduction

- 1) Prior to establishing new industries, an EIA should be carried out.
- 2) In the industries, an Environmental Management System (EMS) should be implemented.
- 3) In the industries, EMP (Environmental Management Plan) should be followed.
- 4) All industries, new and old, should have their own ETPs in place and operational.
- 5) A public awareness campaign should be initiated to raise awareness among the key stakeholders.
- 6) Every industrial site should have its own waste recycling facilities, such as composting and bio-gas plants.

- 7) To supervise and guarantee the waste reduction process, regulatory authorities should be established.

Waste Recycling

- 1) Municipalities should support the separation of recyclable and non-recyclable garbage at the source.
- 2) After initial diagnosis, non-recyclable garbage should be disposed away.
- 3) For effective garbage recycling, certain laws and regulations need be established.
- 4) It is necessary to establish a recycling zone.

Reuse of Waste

- 1) Goods that have been recycled may be re-used.
- 2) It is necessary to assure the quality of reusable garbage.
- 3) Provisions should be provided for the commercialization of recycled waste goods.
- 4) The 5 R Principles (Reduce, Reuse, Recycle, Recovery, and Disposal) should be promoted in the spirit of the phrase "Your Wastes are My Resources." In this context, adequate legislation and national 5R plans should be developed.

CONCLUSION:

Legislations in Bangladesh are enforced from top to down, much like development planning. Law is imposed on individuals by bureaucrats and politicians. People grow disinterested in observing rules when they do not belong to them, and complications arise during enforcement. As a result, in environmental legislation, a bottom-to-top approach must be taken so that more attention is paid to the enforcement of waste disposal legislation, such as meeting reporting requirements and providing independent verifications that are aimed at the implementation of waste disposal legislation.

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CONFLICTS OF INTEREST:

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