

# Legal Response to the Environment-Friendly Transportation System of Bangladesh

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## Abstract

An environmenta friendly transportation system refers to a mode of transportation that has a reduced impact on the natural environment and contributes to climate change mitigation. Such transportation systems typically use clean and renewable energy sources, emit lower levels of pollutants, and produce fewer greenhouse gas emissions than traditional transportation systems. The adoption of environment-friendly transportation systems is crucial for mitigating climate change, reducing air pollution, and promoting sustainable development. This research paper aims to analyze the legal response to the implementation of environment-friendly transportation systems in Bangladesh. The study focuses on the existing legal frameworks and policies governing the transportation sector, with a particular emphasis on environmental regulations and their implementation. The research also examines the challenges faced by the government and other stakeholders in promoting environmentally sustainable transportation systems in the country and the potential opportunities for future improvements. The paper draws on a range of secondary sources, including legal documents and policy reports, to comprehensively analyze the legal landscape of transportation in Bangladesh. The findings of this study can contribute to the development of effective policies and strategies that promote environmentally sustainable transportation systems in Bangladesh and other developing countries as well.

**Keywords:** Environment-Friendly Transportation, Air Pollution, Noise Pollution, Law and Authority

## Introduction

Transportation is widely recognized as a critical component of the future livability of cities. It is often referred to as the “maker and breaker of cities”. WHO reports (WHO, 2018) show that seven million people die per year all over the world due to air pollution. Vehicles emission contribute here a remarkable portion. On the other hand, many people are being affected by hearing capacity due to sound pollution. Research shows (Thorslund, 2014) that the prevalence of age-related hearing loss in Europe is roughly 30% for men and 20% for women at the age of 70 years, and 55% for men and 45% for women at the age of 80 years. It is alarming for us. There are a good number of laws in Bangladesh regulating this area. Many organizations and institutions are working on environmental issues and the transportation

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system of Bangladesh. But none of them are directly and specifically assigned for or responsible for the prevention of vehicles emission and sound pollution. There is no initiative so far for emphasizing or introduction of environment-friendly transportation. There are a number of laws on regulations of the transportation system of Bangladesh but none of them specifically concern addressing environment-friendly transportation issues and promoting and ensuring an environment-friendly transportation system in Bangladesh. It is high time to address the issue seriously and take the necessary steps to establish or promote a distinct institution in this regard. That will work for the prevention of vehicle releases and control the sound emitted from vehicles that affect human health and at the same time the institution or organization will work for introducing and promotion of environment-friendly transportation in Bangladesh. This study it is tried how this process (environment-friendly transportation system) could be made successful from both legal and institutional perspectives.

## 2. Problem Statement

Transportation is the single prime source of air pollution and noise pollution in Bangladesh. Proper authority can help reduce their harmful effects by managing and promoting an environment-friendly transportation system. A usual passenger vehicle emits about 4.6 metric tons of carbon dioxide per year. Vehicle contaminants harm our health and contain greenhouse gases that cause climate change negatively. Noise pollution impacts millions of people on a day-to-day basis. The most common health problem it causes is Noise Induced Hearing Loss (NIHL). Exposure to loud noise can also cause high blood pressure, heart disease, sleep disturbances, and stress. These health problems can affect all age groups, especially children. Bangladesh is the country with the worst air pollution in the world, according to a 2021 report by IQAir, and has topped the list of noisiest cities in another report titled 'Frontiers 2022'. There are two major sources of air pollution in Bangladesh, vehicular emissions and industrial secretions. Vehicle contributes 19% of the total pollution. According to a recent report seems that 80% of noise pollution in Dhaka originates from vehicles. In Bangladesh, typical transportations are the main perpetrator of the worsening environment. In a recent report, of the tested motorcycles, 77.8% failed to maintain standards while 84% diesel driven buses and 69% of trucks failed to meet emission standards. The main organization in Bangladesh working for environmental conservation is the Department of Environment (DoE), a department established under the Ministry of Environment. This organization is responsible for the overall environmental issues of the country. The amount of load of tasks made this organization malfunctioning in various perspectives. On the other hand, the basic law regarding environmental protection

is the Environment Conservation Act of 1995. It is vast and comprehensive in nature and concerned with overall environment conservation in Bangladesh. There is no specific provision or guideline for the prevention of pollutants emission from vehicles and emission sounds of cars. There are many organizations and institutions working for the transportation system of Bangladesh, but none of them are directly concerned and responsible for the prevention of pollutants emitted from transport and unbearable sounds emitted thereof. Environmental issues in transportation are considered as supplementary functions to the respective authorities and institutions. All over the world nations are thinking and working for promoting environmentally friendly transportation systems. In the case of Bangladesh, it is almost absent. Some scattered initiatives are undertaken in this regard several times but none of them gives effective output so far due to unplanned and time being the solution. The reality says that it is urgent for Bangladesh to take effective and long-term planning for introducing and promoting an environment-friendly transportation system in Bangladesh.

Moreover, there is no specific law solely concerned with environment-friendly transportation and no specific appropriate authority to prevent such pollution and handle the situation and that can work for promoting a particularly environment-friendly transportation system in Bangladesh. Under this study it is tried to discover loopholes in existing laws in this regard and find out the probable solutions under existing and prospective legal frameworks.

### **3. Research Methodology**

The methodology used in this research is crucial for identifying problems by gathering and analyzing data. A qualitative research approach was employed in this study, with secondary data collected from various sources. Library resources, such as texts, legal statutes, and journals, were utilized for their convenience. The collected data, particularly major legislation related to the transportation system's environmental friendliness, was analyzed using the narrative analysis technique. Finally, based on the study's findings, some recommendations are suggested.

### **4. Limitation and Scope**

As with any research study, there are certain limitations and constraints that should be noted. While there exist additional indicators for assessing environmentally friendly transportation, not all of them can be included in this study. A larger study area would be necessary to obtain more representative results, as the current qualitative approach may not capture the nuances of the transportation system with complete accuracy. Despite these limitations, the study has attempted

to identify the shortcomings in the existing laws and regulations governing the transportation system in Bangladesh, in order to propose potential solutions for a more sustainable and environmentally friendly transportation system.

## 5. Conceptual Framework of Environment-Friendly Transportation

Eco-friendly transportation is commonly understood as a mode of transportation that has a lower impact on the environment in terms of energy consumption, pollutant emissions, and noise (Vicenzutti & Sulligoi, 2021). The goal of eco-friendly transportation is to reduce greenhouse gas emissions from transportation activities. It is a form of sustainable transportation that employs various strategies such as human power, public transportation, smart design, and renewable energy to minimize the adverse environmental effects of transportation (Yulin and Zhenyu, 2010). For the purposes of this study, eco-friendly transportation will encompass the comprehensive management of transportation from legal, institutional, and infrastructural perspectives to ensure a sustainable and environmentally responsible transportation system.

## 6. Implication of Environment-Friendly Transportation

Despite the increased adoption of green energy, over 90% of fuel used for transportation is still petroleum-based. According to the European Union (2018), there is a strong correlation between the growth in Gross Domestic Product (GDP) and freight transport. Consequently, both mobility and freight transport have seen significant growth over the past few decades, leading to severe negative impacts on the environment, economy, and society (European Commission, 2011; European Union, 2018). One of the harmful effects is the rise of urban areas that consistently exceed emission limits due to smog, as evidenced in the article "Wrapped in Smog" (2013). The utilization of eco-friendly transportation could present a viable solution to this issue. Some advantages of eco-friendly transportation may include:

- 6.1 Reduction of fuel consumption: It is one of the basic characteristics of environment-friendly transportation that it consumes less fuel and pollutes the environment thereby.
- 6.2 Less Pollution and Clearer Skies: Since their pollution is less, skies seem clearer. The smoggy and foggy skies become mostly rare.
- 6.3 Improve air quality: Due to less emission of different pollutants from vehicles, the standard and quality of air improve.
- 6.4 Ensuring a Calm and peaceful atmosphere: Environment-friendly transportation emits less tolerable sounds that help to ensure a calm and peaceful atmosphere.
- 6.5 Healthier Communities: A healthier community is evolved by promoting the usage of eco-friendly transportation and by ensuring an environ

ment-friendly transportation system.

6.6 Fewer Cars Equal Fewer Roads: Eco-friendly transportation system includes a reduction of the number of vehicles, and fewer roads require for the environment transportation system.

## 7. Transportation in Bangladesh

Bangladesh has a unique multimodal transportation system that includes modes of transportation not commonly found in other parts of the world. One such mode is the traditional rickshaw, which has earned Dhaka the title of “rickshaw capital of the world.” Rickshaws are an eco-friendly mode of transportation as they do not require fuel. In addition to rickshaws, other modes of transportation in Bangladesh include auto-rickshaws, taxicabs, easy bikes, buses, trains, and airplanes. Auto-rickshaws, also known as CNGs, is another eco-friendly option as they use Compressed Natural Gas as fuel. Given Bangladesh's geography as a riverine country, boats and ferries, locally known as “launch,” also play an essential role in transportation. With launch services, one can reach various destinations within the country through waterways. Overall, Bangladesh's diverse transportation system offers many eco-friendly options that could serve as models for other countries to follow.

## 8. Legal and Institutional Framework of Transportation in Bangladesh

The Laws concerned with Transportation in Bangladesh and closely connected with environmental issues of transportation are: (1) The Road Transport Act, 2018; (2) The National Land Transport Policy, 2004; (3) The Environment Conservation Act, 1995; (4) The Clean Air Act, 2019 (Draft); and (5) The Noise Pollution Control Rule, 2006, etc. The Laws mentioned herein concerned with the transportation system and environmental issues in this area are analyzed as follows:

### 8.1 The Road Transport Act, 2018

Section 46 of the Road Transport Act, 2018 prohibits driving vehicles that exceed the permitted emission of pollutants. Punishment for the violation of this prohibition under Section 89 is imprisonment for 3 months and a fine along with a deduction of a point on the driver's part. The Bangladesh Road Transport Authority (BRTA) is mainly responsible for monitoring of the Noise pollution. BRTA operates mobile courts against hydraulic horns. There is no coordination with DoE and BRTA in this regard.

### 8.2 The National Land Transport Policy, 2004

Section 6.2 is concerned with the reduction of pollution from vehicles, such as the Government will introduce mandatory emission testing as part of the vehicle fitness

test. The Government will encourage the use of CNG, and at the same time will adopt a works program to ensure that the country is adequately covered by a full network of CNG filling stations. The Government will take appropriate measures to attract the private sector to set up CNG filling stations all over the country, etc.

### **8.3 The Environment Conservation Act, 1995**

Bangladesh Environment Conservation Act was enacted by the government of Bangladesh in 1995 to conserve the nation's environment. Its main goals were to "provide for the conservation of the environment, improvement of environmental standards and control and mitigation of environmental pollution." (Bangladesh Environmental Conservation Act, 1995). Upon approving this act the government established the Department of Environment and the Department will be headed by a Director General. The Director General can set up any rules and measures that he may consider will help conserve the country's environment and may improve the environment's standards. The Director General can work with other agencies that the Director General thinks can effectively aid in their goal.

### **8.4 The Clean Air Act, 2019 (Draft)**

The proposed Act suggests the identification of "sources of pollution" and "critical areas" under section 7 to mitigate harmful gas emissions and protect residents living in those areas, removal of unsafe vehicles from roads in coordination with the Bangladesh Road Transport Authority, the establishment of national emission control standards through a National Air Quality Management Plan under section 6 to monitor excess fuel containing sulfur dioxide, and the formation of an advisory board under section 29 of the Clean Air Act-2019 within two months of its passage due to time constraints.

The Department of Environment (DoE) is the primary authority responsible for enforcing and implementing the proposed law. However, there is an inherent issue of staffing and availability of qualified personnel within the institution, which may pose a challenge in effectively carrying out their responsibilities under the law.

### **8.5 The Noise Pollution Control Rule, 2006**

The Noise Pollution (Control) Rules 2006 were established under Section 20 of the Bangladesh Environment Conservation Act 1995 to provide specific directives on permissible noise levels in different areas and regulate noise pollution. Non-compliance with these regulations is a punishable offense, carrying a sentence of up to one-month imprisonment and/or a fine of up to 5,000 BDT for the first offense, and imprisonment of up to 6 months and/or a fine of up to 10,000 BDT for repeated offenses. While excessive honking and loud horns are one of the primary causes of excessive noise, they are not currently punishable under the law, though

it is advisable to consider making them punishable offenses.

The Department of Environment (DoE) is responsible for implementing “The Noise Pollution Control Rule, 2006” in Bangladesh, although, in practice, it appears that the concerned authorities are not active in preventing noise pollution, and mobile courts sometimes take on this role.

## **9. Response of Institutions to Environment-Friendly Transportation in Bangladesh**

Institutions Concerned with Transportation and their functions are summarized as follows:

### **9.1 Road and Highway Division**

This institution is responsible and busy with building and maintenance of the major roads and bridges setup of Bangladesh (Maniruzzaman & Mitra, 2005).

### **9.2 Bangladesh Road Transport Authority (BRTA)**

The responsibilities of regulating road transportation include enforcing motor vehicle Acts, granting route permits or approvals, issuing driving licenses, fitness and registration certificates, and driving instructor licenses, organizing workshops or seminars to educate people about safe driving and traffic rules, and conducting research and development to develop safer road transport and traffic systems (Mahmud et al., 2009).

### **9.3 Bangladesh Road Transport Corporation (BRTC)**

The organization engages in the following activities related to road transportation:

- a) Operating transportation services for both passengers and cargo,
- b) Offering training programs for drivers, mechanics, and transport managers to cultivate expertise in the road transport industry, and
- c) Conducting research on vehicle and engine technology as well as safety measures to promote efficient and environmentally sustainable trucking services (Ahasan & Kabir, 2019).

### **9.4 Bangladesh Railway**

The organization is responsible for several key activities related to the operation of the country’s railways:

- a) Constructing and maintaining railway tracks and station infrastructure across the nation,
- b) Upgrading and repairing locomotives, coaches, and other rolling stock,
- c) Ensuring that train operations are conducted safely, efficiently, and with proper organization,

- d) Acquiring advanced technology such as modern rolling stock, track materials, and signaling systems suitable for use on Bangladesh Railway, and
- e) Managing the land assets belonging to Bangladesh Railway (Islam, 2015).

### **9.5 Bangladesh Inland Water Transport Authority (BIWTA)**

The organization is involved in several activities related to inland water transport:

- a) Providing navigation and meteorological information, including the publication of river charts,
- b) Planning and implementing dredging programs to maintain existing navigable waterways, revive stagnant rivers or canals, and develop new channels for navigation,
- c) Developing, maintaining, and operating river ports, landing areas, and terminal facilities,
- d) Conducting surveys to determine passenger and cargo demand on major rivers, feeders, and creeks,
- e) Coordinating inland water transport with other modes of transportation, major seaports, and commercial and agricultural interests to maximize available transport capacity,
- f) Offering practical training programs for personnel involved in inland water transport, and
- g) Setting fares and freight charges for inland water transport on behalf of the government (Azad, 2009).

### **9.6 Bangladesh Inland Water Transport Corporation (BIWTC)**

Bangladesh Inland Water Transport Corporation (BIWTC) is responsible for the following functions:

- a) Its mission is to offer secure transportation options for both passengers and cargo along inland and coastal water routes,
- b) It specializes in providing reliable vehicle transportation services via waterways, and
- c) Additionally, it operates and maintains dockyards and healing yards to facilitate the repair and renovation of vessels involved in the aforementioned activities.

The interesting issue is that among these institutions and authorities' coordination is rarely appeared (Ahasan et al, 2019). There is a lack of coordination between different institutions and authorities related to transportation. Although there are various institutions and authorities responsible for transportation in different areas and ministries, none of them seem to have a specific mandate to ensure or promote environmentally friendly transportation. In other words, while these organizations may have different functions, they do not appear to work

together in a cohesive manner to address the environmental impacts of transportation. The adopted transportation policy emphasized increasing public transportation and lessening private transportation. Recently, electric cars are imported by private entrepreneurship. It is yet to be on the planning level to ensure registration of existing stereotype electronic cars.

## 10. Research Findings

After the critical analysis of secondary data particularly existing laws and policies regarding transportation systems and bodies or institutions established for this purpose, we find the following issues of hinders regarding the promotion of the environment-friendly transportation system of Bangladesh:

Firstly, there is no specific law or any specialized authority in Bangladesh so far which are concerned with the development and promotion of an environment-friendly transportation system. It is high time for us to realize it and established any separate statutory authority or agency for this purpose and take necessary laws or amendments as per need.

Secondly, the existing authorities or bodies are doing their job scattered. Coordination among them is required for ensuring a sustainable or environment-friendly transportation system.

Thirdly, the infrastructural development should be made in such a way that green vehicles may be introduced tremendously complying with the rest of the world.

Fourthly, in city areas, an eco-friendly environment-friendly transportation system is not introduced, not properly promoted and to some extent, it is discouraged.

Fifthly, there is no specific law or regulation addressing eco-friendly transportation systems, even existing laws are silent in this regard.

Sixthly, Mass people are not aware enough of the protection of the environment and the reduction and prevention of environmental pollution. And therefore they are not encouraged to use of environment-friendly transportation.

## 11. Recommendations

On the basis of research findings, mentioned hereinbefore, some steps may be initiated for ensuring an eco-friendly transportation system in Bangladesh. These might be:

Firstly, a separate and distinctive law regarding environment-friendly transportation systems should be adopted as early as possible. A specialized body shall be established also under the law for working in this area.

Secondly, the functions of the transportation system among the respective bodies and coordination shall be ensured and established. Their functions in this regard shall be specific and transparent. Accountability is also to be maintained.

Thirdly, Infrastructural development and road management shall be decorated considering the introduction and promotion of eco-friendly transportation.

Fourthly, the respective personnel working in the city area on the transportation system, particularly traffic policing shall be trained properly so that they become positive about eco-friendly transportation.

Fifthly, existing laws, regulations, and policies shall be amended in some cases for addressing this issue of ecofriendly transportation system expansion.

Sixthly, Necessary initiatives shall be taken from both public and private sectors for increasing awareness of using eco-friendly transportation. For doing so necessary research shall be initiated. Public awareness should be taken from various perspectives.

## 12. Conclusion

As economic development continues, there is a growing need to prioritize sustainability and protect the environment. However, the emissions and noise pollution from vehicles remain significant barriers to achieving this goal. To make our dream of a greener and healthier Bangladesh a reality, it is crucial for stakeholders to take planned and sincere initiatives and increase public awareness on this issue. This study highlights the urgent need for a comprehensive legal framework to promote and ensure environment-friendly transportation in Bangladesh. The findings indicate that while there are several institutions and authorities responsible for transportation, there is a lack of coordination and specific mandates to address environmental concerns. The study identifies various legal measures that could be implemented to promote eco-friendly transportation, including stricter enforcement of emission standards, promotion of public transportation, and investment in infrastructure for non-motorized transportation. It is recommended that policymakers and stakeholders work together to develop and implement a coordinated legal response that can effectively address the environmental challenges associated with transportation in Bangladesh. The establishment of specific laws and authorities

responsible for promoting eco-friendly transportation systems could be a significant step forward. Additionally, amending necessary provisions of existing laws to ensure better coordination among relevant authorities is also essential. Only through such collective action can the country move towards a more sustainable and environmentally responsible transportation system.

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