
Sustainable Development and Environmental Protection in Bangladesh: Challenges and Opportunities

*Sazzad Alam*¹

Abstract

In 1992, more than 170 countries came together at the Rio Earth Summit and agreed to pursue sustainable development, protect biological diversity, prevent dangerous interference with climate systems, and conserve forests. It is mandatory for a country to keep balance between development process and environmental pollution level. This idea is known as sustainable development. Bangladesh is already in the process of becoming a developing Country it is expected that she will go through a massive development phase in the next twenty to thirty years. Several researches showed that rapid development process affects the ecosystem and environment. To minimize that pollution level all over the world, countries have implemented sustainable development idea and made it mandatory to follow sustainable development plans by introducing and implementing laws. Bangladesh is no difference and there are several Laws, Plans related to environmental protection and sustainable developments like The Brick Manufacturing and Brick Kilns Establishment (Control) Act 2013, The Wildlife (Preservation and Safety) Act, 2012, Bangladesh Water Act, 2013. The idea behind enacting these laws was to minimize environmental pollution without slowing the development process. But it is a matter of great concern that pollution level in Bangladesh is increasing day by day especially the water and air pollution. In this paper I will try to find out why hasn't Bangladesh become much more environmentally sustainable despite decades of international agreements and national policies and are the opportunities and challenges of sustainable development under Bangladeshi laws and policy framework.

Keywords: Sustainable Development, Global Warming, Pollution, Bangladesh, SDG.

Introduction

Humanity's ecological footprint has exceeded the earth's capacity and has risen to the point where 1.6 planets would be needed to provide resources

¹ The author is a Lecturer at Department of Law and Human Rights of University of Development Alternative (UODA), Dhaka, Bangladesh. He completed his LL.B. (Hon's) from BRAC University and LL.M. on International Environmental Law from Macquarie University, Australia. He also secured a MSS degree on Criminology and Criminal justice from the University of Dhaka. His email address is sazzdalam@gmail.com

sustainably.² From the 1970 biodiversity index has fallen around 50% and environment pollution level is also increasing day by day. Even after the Introduction of sustainable development plans greenhouse gas emission have almost doubled and around 48% of the world's sub-tropical forests has been lost in recent times. If we try to find out what is going wrong with sustainability initiatives, researchers found that three types of failure kept recurring: economic, political and communication.³ While this is the situation of sustainable development in the rest of the world, it is high time to look at the effectiveness of sustainable development plans, Acts in Bangladesh.

Bangladesh is a country with 160 million people and economic worth is around \$686.5 billion, now in six year graduation process to become a developing nation. Bangladesh was amongst the Least Development Bloc (LDC) countries from 1975.⁴ As per the decision of UN Committee for Development Policy (CDP), currently there are 47 countries in the LDC bloc. Bangladesh had attained tremendous progress in the private sectors like garments, pharmaceuticals and ceramic.⁵ It is expected that Bangladesh will go through a massive development process in the next 20 or 30 years. As it is a known fact that development process effects on the ecosystem.⁶ For a steady economic growth a country needs to develop industries, facilities for the people. Development process requires more power consumption. Usage of fossil fuel pollutes the environment, emits greenhouse gas. The idea was to achieve development goals in such way that the process will not harm the environment as a result future generation will have enough resources to meet their own needs. Bangladesh government had introduced policies after the Rio Declaration. Bangladesh government also enacted several laws related to environment and biodiversity protection in the past 20 years. In 2015 Bangladesh gave commitment to implement the SDGs (Sustainable Development Goals). There are 16 SDS to achieve for Bangladesh set by an agreement of the United Nations Conference on sustainable development.

This paper will be mostly a Doctrinal type of research. I will try to show what types of initiatives have been taken by Bangladesh government to attain sustainable development and the effectiveness of those initiatives. I will also discuss the challenges of sustainable development initiatives and at the end of

2 Michael Howes, 'HOWES: Why Sustainable Development Plans Have Failed' (*Business Daily*, 2017) <<https://www.businessdailyafrica.com/analysis/Why-sustainable-development-plans-have-failed/539548-3876264-2x0u20/index.html>> accessed 5 October 2018.

3 *Ibid.*

4 "'Pitfalls' Ahead Of Bangladesh Getting Out Of LDC Bloc' (*Atimes.com*, 2018) <<http://www.atimes.com/article/pitfalls-ahead-bangladesh-getting-ldc-bloc/>> accessed 25 June 2018.

5 Samia Naz, 'Bangladesh: A Country Marching Ahead towards Development' (*Vietnamnews.vn*, 2019) <<http://vietnamnews.vn/life-style/424999/bangladesh-a-country-marching-ahead-towards-development.html#IGd17HaPe1Sf8W7K.97>> accessed 10 May 2018.

6 Yong-Kuk Jeong and others, 'Development of the Methodology for Environmental Impact of Composite Boats Manufacturing Process' (2015) 29 *Procedia CIRP*.

the paper I will make some recommendations for the authority based on my research.

Current Environmental Issues and Concerns in Bangladesh

The environmental condition of Bangladesh is not at all equilibrium. We can categorize that pollution into three major parts a) Water pollution, b) Air pollution, and c) Sound pollution. Pollution is a threat to the human health, ecosystem and economic growth of Bangladesh. In the book name 'Environmental Law: Bangladesh Perspective'⁷ author Iqbal Hossain identified some reasons of environment pollution in Bangladesh and those are:

- ❖ Deforestation in the name of development projects.
- ❖ Water quality is deteriorated due to poor sanitation.
- ❖ Water pollution due to pesticide use.
- ❖ Natural disasters, declining surface water availability.
- ❖ Excess usage of chemical fertilizers.
- ❖ Unplanned Urbanization.
- ❖ Loss of biodiversity and wetlands due to human activities.
- ❖ Direct disposal of hazardous waste and substance in the environment.
- ❖ Conflict of development with environmental illiteracy.⁸

The reasons of environmental pollution are mostly human made. Industrialization, Urbanization, improper use of agricultural chemicals and pesticides, faulty policy priorities and approaches and above all poorly designed development activities.⁹ To save the environment from various kinds of pollution it is mandatory to create a balance between development and environment protection. And from this necessity government enacted many environmental protection related laws and policy.

Positive steps towards sustainable development in Bangladesh

The term sustainable development connects environment and development together. Principal 4 of the Rio Declaration states that the environmental protection will be a part of development process.¹⁰ Sustainable development

7 Iqbal Hossain, *International Environmental Law Bangladesh Perspective* (5th edn, Md Saiful Islam 2014).

8 *Ibid.*

9 *Ibid.*

10 UN Doc. A/CONF.151/26 (vol. I); 31 ILM 874 (1992) p 4.

became necessary as the global population is on the rise, as per United Nations projections there will be more than 10 billion people at the end of year 2100.¹¹ It is important to ensure enough resources for this huge number of future population so that they can fulfil their demand. Currently the entire world depends mostly on fossil fuels. Using those fossil fuels emits carbon dioxide gas which is mostly responsible for greenhouse effect. World's current resources stock of fossil fuel (Gas, oil, coal) will last another 50-55 years.¹² So it is important to think about alternative energy sources and to protect the environment. Bangladesh is also following the path to sustainable development model.

Sustainable development became a necessary in the late 80's then it was known as eco-development. But environmental protection related law was subject to the law maker all around the world though sustainable development method wasn't introduced then. If I looked at the development of environmental protection laws and programs by Bangladesh government I found that in 1973 right after the liberation war Bangladesh government enacted Water Protection Ordinance followed by a project under this ordinance. The main goal of this project and ordinance was to control water pollution. Later in 1977 Environment Pollution Control Ordinance was introduced. In 1989 Department of Environment (DoE) was structured by Bangladesh government and the activities of the department are overseen by a Director General. There are some laws which came before 1985 but amended recently which are related to environmental protection like *The Pesticide Ordinance*,¹³ *The Pesticide Rules*,¹⁴ *The Wild Life (Preservation Order)*,¹⁵ *The Forrest Act*,¹⁶ *The Wetland Protection Act*, etc. In the late of 80's Bangladesh went through major development phase. Industries were setting up, foreign investments in garments sector started to come in, natural gas, coal field were discovered. On that time Ministry for Environment and Forest (MoEF) was established, Non-governmental organizations started to work on environmental issues in Bangladesh as well.¹⁷ On that time several NGO's were very concern about the rising of pollution level in Bangladesh. Ministry of Environment formulated National Environmental Management Action Plan (NEMAP) with the help of some NGO's.

-
- 11 Jared Skye, 'Why Is Sustainable Development Important? | Lovetoknow' (*LoveToKnow*, 2017) <https://greenliving.lovetoknow.com/Why_Is_Sustainable_Development_Important> accessed 10 July 2018.
 - 12 Siddharth Singh, 'How Long Will Fossil Fuels Last?' (*Business-standard.com*, 2015) <http://www.business-standard.com/article/punditry/how-long-will-fossil-fuels-last-115092201397_1.html> accessed 7 July 2018.
 - 13 The Pesticide Ordinance, 1971 (Amended 2009).
 - 14 The Pesticide Rules, 1985.
 - 15 The Wild Life (Preservation Order), 1973 (Amended 1995).
 - 16 The Forrest Act, 1927 (Amended 2002).
 - 17 Nurul Islam, 'The Broader Significance Of The Environment Movement In Bangladesh' [2002] *Bangladesh Poribesh Andolan*.

Bangladesh adopted the National Environment Policy 1992 and Environment Action Plan 1992, by those adoption concepts of environmental protection through national effort was recognized for the first time in Bangladesh. In the Agenda 21 chapter 8 says about the importance of formulation of national policies and laws for environmental protection and sustainable development.¹⁸ Bangladesh government formulated a good number policies after National Environmental Policy 1992 such as, National Forest Policy, 1994, Fisheries Policy, 1998, National Water Policy, 1999, National Agricultural Policy, 1999, Industrial Policy, 2005, National Land Use Policy, 2001, National Land Transport Policy, 2004.

The most important Act passed by Bangladesh government was Environment Court Act, 2000. This act was enacted for the purpose of tying cases related to the violation of environmental laws. In recent time back in 2010 this act replaced by the new Environment Court Act, 2010.¹⁹ Currently there are more than 200 laws in Bangladesh which are dealing with environmental issues.²⁰ Those laws mostly deal with Air, Water and Land pollution. Amongst all those some are specific to the environments which are:

- ❖ The Bangladesh Environmental Conservation Act, 1995 and Rules 1997.
- ❖ The Environmental Court Act, 2010.
- ❖ The Wildlife (Preservation and Safety) Act, 2012.
- ❖ The Brick Making and Burning (Control) Act, 2013.
- ❖ The Conservation of Play Ground, Open Place, Park and Natural wetland in Metropolitan City, Divisional Town and Municipal Area of District Town Including All Municipal Area Act, 2000.
- ❖ Bangladesh Water Act, 2013.

Opportunities of Sustainable Development under the Constitutional Framework of Bangladesh

India and Pakistan adopted constitutional rights to protect the environment as human rights. India adopted environmental protection right back in 1976 with amendment Act.²¹ Article 27(4) of the Constitution of Sri Lanka states that it states duty to protect the environment for the benefit of the community. The constitution of Bangladesh originally did not incorporate with any provisions related to environment protection. Constitution of Bangladesh more

18 Yong-Kuk Jeong and others, 'Development of the Methodology for Environmental Impact of Composite Boats Manufacturing Process' (2015) 29 *Procedia CIRP*.

19 The Environment Court Act, 2010.

20 *Ibid*, 17.

21 The Constitution (Forty Second Amendment) Act, 1976.

emphasized on human rights and equal protection before the law. Back in 1994, in the case of *Dr M. Farooque v. Secretary, Ministry of Communication, Government of the People's Republic of Bangladesh and 12 others*²² it was a case of Public Interest Litigation and that dealt with air pollution and noise pollution. The Supreme Court accepted the argument that 'Right to Life' includes right to have safe and healthy environment to live. Later in 2011 by the 15th Amendment Act Bangladesh made environmental protection and preservation of natural resource fundamental duty of the state.²³ Article 18A of the Constitution of Bangladesh states that:

"The state shall endeavor to protect and improve the environment and to preserve and safeguard the natural resources, biodiversity, wetlands, forests and wildlife for the present and future generations."²⁴

This Article of the Constitution talks about protecting the environment for future generation and this idea is known as Sustainable development. So, with the 15th amendment of the constitution Bangladesh has guided to take sustainable development measures in order to protect the environment so that our future generation can have a safe and healthy environment with enough resources to continue the development process.

Sustainable development under Policy framework in Bangladesh

Bangladesh has The National Environment Policy, 1992 and National Environment Action Plan, 1992. These two focus solely on the environmental protection issues in Bangladesh. There are policies specifically address different aspects and application of sustainable development, those are:

- ❖ National Forestry policy, 1994.²⁵
- ❖ National Agriculture Policy, 1999.²⁶
- ❖ National Land Use Policy 2001.²⁷

In Bangladesh adoption of policies is very important. There are over 160 million people living in a small area of land around 55598 square miles, it has limited resources. By adopting environmental policies gives the Ministry of Environment goals to achieve, shows ways to achieve the goals. After adoption of policies Ministry of Environment also gets idea about legal development if the implementation of policies requires new laws. Policies are not judicially enforceable in Bangladesh according to Article 152 of The

22 *Dr M. Farooque v. Bangladesh*, [1997] 49 DLR 1.

23 The Constitution (Fifteen Amendment) Act, 2011.

24 The Constitution of Bangladesh 1972, Art 18(A).

25 The National Forestry policy, 1994.

26 The National Agriculture Policy, 1999.

27 The National Land Use Policy, 2001.

Constitution of Bangladesh.²⁸ But those policies made huge impact in the area of environmental protection laws and sustainable development in Bangladesh.

Sustainable development under The National Environmental Policy, 1992

Bangladesh government introduced most of the policies related to sustainable development and environmental protection after the Rio Declaration. In this National Environmental Policy 1992 Bangladesh government identified problems related to environment and established Ministry of Environment and Forest (MoEF). In that policy it was mentioned that Bangladesh has a serious issue of over population, illiteracy, inadequate health care and lack of public awareness it also speaks about improving the environment in an integrated manner. Some of the objectives of the policy related to Sustainable Development are:

- ❖ Maintaining ecological balance and improvement of the environment.²⁹
- ❖ Identifying and regulating activities that pollute and degrade environment.³⁰
- ❖ Ensuring environmentally sound development in every sectors.³¹
- ❖ Ensuring sustainable, long term and environmental friendly use of government resources.³²
- ❖ Actively cooperating with all international environmental initiatives to the highest possible extent.³³

In this policy Section 3.2 talks about undertaking Environmental Impact Assessment (EIA) for new private and public industries³⁴ and imposing ban on industries which are harmful to the environment.³⁵ Environmentally sound and friendly production system is encouraged as well as efficient use of raw materials. Sustainable use of raw materials in the industry production is encouraged.

As a result of this policy Bangladesh government enacted Environmental Impact Assessment (EIA) legislation in 1995 and EIA rules in 1997. All the tanneries from Hazaribag Dhaka are ordered to relocate in Savar Tannery State. Those tanneries were responsible for major water pollution as well air

28 The Constitution of Bangladesh 1972, Art. 152.

29 The National Environment Policy 1992, s. 2(1).

30 *Ibid*, s2(3).

31 *Ibid*, s2(4).

32 *Ibid*, s. 2(5).

33 *Ibid*, s. 2(6).

34 *Ibid*, s. 3(2)(2).

35 *Ibid*, 3(2)(3).

pollution in Hazaribag area. Till June 2017 out of 154 tanneries 55 relocated in Savar and started producing.³⁶ In the later part of this paper I will discuss about the implementation of EIA in real life situation in Bangladesh.

In the Section 3.4 of the Policy usage of environmental friendly fuel is encouraged. Back in 2002 two stroke three wheelers were banned from Dhaka city. Those three wheelers used to emit excess amount of carbon dioxide in the environment so more environment friendly Natural Gas driven auto rickshaw were introduced. Usage of renewable energy was encouraged. As a result it was made mandatory by the government to have solar panel in every building which is 5 storied or more. Reducing the use of coal and wood for burning was emphasized and later government passed Law in 2013 restraining brick kilns from using wood as burning materials. Introduction of tree plantation project was also mentioned in this policy.³⁷ Now Bangladesh government has a tree plantation week programme. Because of the policy which was introduced in 1992, Bangladesh government introduced laws which are essential to ensure sustainable development. To attain the objective of this policy in 1995 Bangladesh government adopted NEMAP (National Environment Management Action Plan). And this action plan emphasized on sustainable development and improvement of environment. The National Environmental Policy, 1992 was a statement of Bangladesh government which showed her (Bangladesh) commitments to reduce environment pollution and promoted sustainable development.

Positive Initiatives taken by Ministry of Environment and Forests (MoEF) to attain Sustainable Development

Ban on Plastic Shopping Bag

The most effective initiative taken by the MoEF is imposing ban on plastic shopping bag back in 2002. Plastic bags were responsible for major sewerage blockage all over the country especially in Dhaka city. The plastic bags were also responsible for polluting the river and canals. Plastic bags don't degrade and they were responsible hampering soil quality. As Bangladesh did not managed to establish plastic recycling plant it was the only solution to protect the rivers, canals and fertile land from plastic bags.

Air Pollution Control

Air quality in Dhaka city is unhealthy. According to the report of WHO Dhaka is the 23rd most air polluted city in the world.³⁸ The Department of

36 Tribune Desk, '35% of Hazaribagh tanneries relocated to Savar' *Dhaka Tribune* (Dhaka, 11 June 2017) <<https://www.dhakatribune.com/business/commerce/2017/06/11/35-hazaribagh-tanneries-relocated-savar/>>accessed on 14 May 2018.

37 The National Environment Policy 1992,s, 3(7)(2).

38 Tribune Desk, 'Air Quality in Dhaka city,' *Dhaka Tribune* (Dhaka,30 January 2018).

Environment (DoE) said that the air quality in Dhaka is harmful to human health and the level of air pollution is rising continuously.³⁹ The air quality in the village and rural areas are safe for human health. But it's just a matter of time that those villages air will also get polluted like the cities. So it is high time for the government to take necessary measures to reduce air pollution all over Bangladesh. In 2002 the Ministry of Transportation banned two stroke three wheelers from Dhaka city as per the recommendation from the Department of Environment (DoE). Those three wheelers were known as "baby taxi" locally were responsible for polluting the air with the emission of excessive amount of carbon dioxide. Auto Rickshaw run by CNG was introduced thus the pollution level was reduced for some years until a new problem showed up which is Brick Kilns. In later part of this paper I will briefly talk about brick kilns and their effects on the environment. DoE has banned vehicles (Bus, Truck, and Minibus) which are older than 20 years. Five Continuous Air Quality Monitoring Stations (AQMP) is established by the DoE to monitor air quality in Bangladesh the World Bank funded this project. Recently The Environment Conservation Rules, 1997 has been amended and in the amended rules use of Catalytic Converter and Diesel Particulate filter for Petrol and diesel vehicles had been made mandatory so that they emits less carbon dioxide in the environment.

Industrial Pollution Control

To control the industrial pollution the government had taken various steps over the past years. In Bangladesh it is common that the industries set up their plant without proper disposal and recycling plant. Bangladesh government made it mandatory to collect Environmental Impact Assessment report before setting up new industries. In every district now government had established Bangladesh Export Processing Zone where all the industries of that particular area set up their plant and that area is well planned as a result less pollution occurs. Government recently relocated tannery factories from populated area to Savar. In the tannery city Savar they had modern technology reclaiming and chemical waste purifying plants as a result water and air pollution in the Dhaka city area will decrease in recent future. Now a days for industries which are highly polluted, Environment Clearance is given after the industries set up effluent treatment Plant (ETP), these types of steps are common in developed countries but in Bangladesh these types of protective measures is new and essential for environmental protection.

Conservation of forest, wild life and biodiversity

Bangladesh is a contracting party to the *Convention of Biological Diversity, 1992* as a result Bangladesh is determined to achieve the goals and objectives

<<https://www.dhakatribune.com/bangladesh/environment/2018/01/30/us-aqi-dhaka-worst-air/>>accessed 14 May 2018.

39 Ibid.

of the convention. Bangladesh established National Biodiversity Action Plan (NBSAP).⁴⁰ In the Bangladesh Wildlife (Preservation) Order, 1973 amended in 1994 government identified three types of areas National Park, Wild Life and Game reserve and government has declared 19 protected areas in the different part of Bangladesh. There are 9 areas in Bangladesh government declared as Ecologically Critical Area. Bangladesh government has taken necessary steps to protect biodiversity of wet lands like Tanguar Haor as per the instructions of the *Ramsar Convention, 1971*. These wetland are important for fisher men, but government imposed restriction on fishing on those wetland so that fishes can repopulate properly. These types of protective measures are part of a sustainable development model.

Sustainable Development Goals and Bangladesh

Recently back in 2015 Sustainable development Goals (SDG) was introduced in the United Nations Sustainable Development Summit. Based on this Sustainable development Goals universal development agenda to 2030 was formed. Key objective of Sustainable development goals can be categorized into three sections such as, a) economic and social development. b) Environmental Protection. C) Physical and Personal Protection.⁴¹

According to the government Bangladesh has done tremendously well achieving Millennium Development Goals.⁴² According to a world development indicators published by the World Bank showed that Bangladesh is now a lower middle income country and annual income of per person is between 1046 to 4125 USD.⁴³ The aim of the government is to transform Bangladesh to a middle income country by 2021. In the year of 2015-2016 the GDP growth of Bangladesh was 6.7%.⁴⁴ In order to achieve sustainable development goals government need huge amount of funding as development is needed almost in every sector. Asian Development Bank has estimated that to finance Sustainable Development Goal in the Asia Pacific region it would need 1 trillion dollar per year.⁴⁵ To achieve sustainable development goals Bangladesh need collective and concentrated effort from the government. In all development policies in Bangladesh SDG is prioritized. Environmental protection is a key part of sustainable development.

40 'National Biodiversity Strategies and Action Plans' (*Convention on Biological Diversity*, 2018) <<https://www.cbd.int/nbsap/>>. Accessed 19 June 2018.

41 Ruth Kuttumari, 'Sustainable Development: The Goals And The Challenges Ahead' <<https://www.theigc.org/blog/sustainable-development-the-goals-and-the-challenges-ahead/>>. ed-savar/> accessed 20 May 2018.

42 Sujit Kumar, 'Sustainable Development Goals and Bangladesh: The Role of Parliament' (2016) 6 International Journal of Development Research (IJDR).

43 *Ibid.*

44 *Ibid.*

45 *Ibid.*

Role of the Bangladesh Parliament in Sustainable Development

Without strong commitment from the parliament Sustainable development goals are not achievable. There are three key pillar of sustainable development they are

- (a) Economic Development.
- (b) Social Development.
- (c) Environmental Protection.

Different research article shows that without the proper governance sustainable development cannot be achieved. It's the duty of Bangladesh parliament to make sure that government is taking necessary measures to protect the environment which does not decrease the pace of development process. It's the parliament's duty to monitor the balance between environmental protection and development process. Parliament is the representative of the people of Bangladesh and their duty is to ensure primary needs of life which is the sole element of development. According to *The Constitution of Bangladesh* its stated duty to protect the environment, and the parliament should make sure that they protect the environment by enacting and formulating environmental protection laws in the country.⁴⁶ No country is legally bound to achieve sustainable development goals but it's important for the future generation and the parliament should make sure their policies and legal frame work protect the environment for future generation while fulfilling the development goals.

The Brick Manufacturing and Brick Kilns Establishment (Control) Act 2013

In recent years Brick making factories in Bangladesh cause serious air pollution. A report from the Department of the Environment stated that 58% of the polluting particles in Dhaka city air come from Brick Kilns.⁴⁷ Unplanned and old Brick Kilns are not only responsible for air pollution but also responsible for destroying productivity of soil as well as deforestation partially all over Bangladesh.⁴⁸ In Bangladesh housing sectors is a profitable business and lots of new instructress, industries are building all over the country and in present time around 25 billion pieces of bricks needed per year.⁴⁹ There are more than ten thousand brick kilns in Bangladesh according

46 The Constitution of Bangladesh, Art 18(A).

47 Mostafa Karim and Jenny Gustafsson, 'In Pictures: The Brick Fields of Bangladesh' (*Aljazeera.com*, 2014) <<https://www.aljazeera.com/indepth/inpictures/2014/05/pictures-brick-fields-banglade-2014517134431553324.html>> accessed 19 July 2018.

48 *Ibid*.

49 Mobassher Hossain, 'To Cut Brick Kiln Pollution, Bangladesh Constructs New Building...' (*U.S.*, 2017) <<https://www.reuters.com/article/us-bangladesh-construction-climatechange/to-cut-brick->

to different NGO's report but the Government claims that there are around 6700 registered brick kilns.⁵⁰ According to the head of the Housing and Building research institute Mohammad Abu Siddique a combined of 10 million tons of woods and coals are burned in the brick kilns per year which produce 5 million ton of Carbon dioxide. Brick is needed to build new info structures and roads, if the government had to find a way to lower environment pollution without decreasing the production of Bricks.

In the year of 2013, Bangladesh government enacted "*The Brick Manufacturing and Brick Kilns Establishment (Control) Act 2013*". Aim of this act was to control unplanned old Brick Kilns and to encourage brick kilns owner to embrace modern brick kilns technology which will eventually downsize environment pollution in Dhaka as well as all over Bangladesh. This act talks about controlling brick kilns and reduction of the use of soil, government banned use of soil collected from agricultural land, dead pond, swampland etc. as raw materials for brick making. In Bangladesh brick kilns are situated in rural areas where soil is fertile as fertile soil is best raw material for wood and coal burned bricks. Section 5 of *The Brick Manufacturing and Brick Kilns Establishment (Control) Act 2013* talks about controlling brick kilns and reduction of the use of soil, by this section government banned use of soil collected from agricultural land, dead pond, swampland etc. and also prohibited the use of rural road made by LGED while heavy vehicles are the method of transportation of bricks or raw materials.⁵¹ But in real life scenario due to lack of proper implementation Brick Kilns owners are not abiding by the laws, they are collecting soil from fertile land as those soil are best raw materials for high quality bricks. There are specific instructions about the fuel and raw materials which should be used in brick kilns. All the necessary instructions and prohibition to minimize pollution caused by brick kilns are included in this Act.

After coming into force it is mandatory to stop the use of wood in making fire for the burning bricks. Bangladesh Government is encouraging the old brick kilns owner to convert their kilns into modern HHK. Low interest loans are provided by the government to convert old Kilns to modern HHK kilns. The HHK technology was originally developed in Germany then imported to Bangladesh after improvement by the Chinese engineers. Now the HHK kilns has been redesigned to suit local soil conditions, humidity levels and climate in Bangladesh. This modern technology brick kilns use only half the amount of coal compared to fixed chimney kilns and trap coal particles inside the brick to prevent them from becoming air-borne fly ash. So enactment of *The Brick Manufacturing and Brick Kilns Establishment (Control) Act 2013* was a

kiln-pollution-bangladesh-constructs-new-building-materials-idUSKBN1D811A> accessed 14 April 2018.

50 *Ibid.*

51 The Brick Kilns (control) Act 2013, s. 5.

major step by Bangladesh government towards sustainable development approach.

Opportunities of Sustainable Forest Resource Management in Bangladesh

In the year of 2004 Bangladesh introduced Social Forestry Rules and Forest Transit rules came later in 2011 under The Forest Act, 1927 (Amended in 2004). But there is a huge gap between demand and supply in forest goods service. In recent years Bangladesh has forest area around 2.5 million hectares that comes around 11% of its total area.⁵² Around 1.6 million hectares of forest is under the Forest Department. Government introduced various participatory forestry projects to encourage afforestation, there are more than 600 thousands Bangladeshi people are now participating on those afforestation projects.⁵³ But it is alarming that after all that effort of government deforestation rate is not decreasing. Still deforestation is a major issue for the forest department. Because the forest department does not have enough monitoring over the forest areas. Most of the time the forest officer illegally sells trees to the locals. The government has to make proper monitoring system so that illegal deforestation can be controlled. If the government can manage Natural Regeneration Plots (NRPs) around all the natural forest areas it will help to increase forest areas. In Bangladesh 60% people use wood for cooking. Alternative cooking materials such as energy efficient cooker, stove should be introduced to the local people. Different NGO's are working in the rural areas on introducing alternative cooking system to the people. Again proper implementation of the Forest policy and Forest Act, 1927 is mandatory to protect the forest land in Bangladesh.

Challenges of Sustainable Development in Bangladesh

It's been almost 26 years since in Rio Earth Summit was held to protect biodiversity but the situation is getting worst day by day specially in developing country like Bangladesh. Water, air pollution is increasing though government enacted many laws related to environment pollution some of them are mentioned in this paper. Sustainable initiatives are failing in Bangladesh because of economic, political and communication failure. In Bangladesh environmentally polluting activities are finically awarding in as an example Brick Kilns, Leather tanneries are mostly responsible for air and water pollution but good source of making money. Deforestation is also awarding as trees worth more money when they are chopped down and it is a particular problem for a country like Bangladesh which is transitioning to a market-based economy. Political failure is also a reason, government has enacted laws

⁵² Abu Syed, 'Sustainable forest resource management', *The Daily Star* (Dhaka, 27 February 2017).

⁵³ *Ibid.*

and policies related to sustainable development but unable to implement those. This is happening in Bangladesh because large extractive industries, like mining, brick kilns, and garments are dominant players in an economy and see themselves as having the most to lose.

Conclusion

In recent time Bangladesh government became agreeing party of several international convention related to environmental protection such as Rio Convention, United Nation Framework convention on Climate Change, 1992, Kyoto Protocol, 1997. Bangladesh govern is committed to formulate and implement a sustainable development strategy addressing environmental issues. But till now we have seen the formulation of sustainable development policies and acts but proper implementation of those policies and acts yet to be ensured by Bangladesh government. Most of the time political influence stops the Environment Ministry from taking action against pollutant industries. The Department of Environment must be allowed to work without political influence. Thus proper implementation of laws and policy related to environment will be ensured. At last, I would like to make the following recommendations:

- ❖ Bangladesh Government can give financial support eco-friendly initiatives and politicians should take extra step to go well beyond current standard.
- ❖ Bangladesh government should give transition pathways for industries that are polluting the most to become eco-friendly. New tax structure, grants can be allowed so that the businesses remain profitable when changing their business model.
- ❖ Both politicians, businessmen must agree on the environment pollution issues. They should work together to ensure that sustainable development policies, laws are implemented properly.

REFERENCES

Books

- Dupuy PJ Viñuales, *International Environmental Law* (1st edn, Cambridge University Press 2017).
- Hossain I, *International Environmental Law: Bangladesh Perspective* (5th edn, Ain Prokashon 2014).
- Jona R, *Public Interest Environmental Litigation In India, Pakistan, And Bangladesh* (1st edn, Kluwer Law International 2014).

Journals

- Jeong Y and others, 'Development of the Methodology for Environmental Impact of Composite Boats Manufacturing Process' (2015) 29 Procedia CIRP.
- Ruh A and others, 'Development Of Two-Component Micropowder Injection Molding (2C Micropim): Characteristics Of Applicable Materials' (2009) 8 International Journal of Applied Ceramic Technology.
- Fortuny J, 'The Witness Set Constraint' (2017) 34 Journal of Semantics.
- Shamrat A, 'Bangladesh Development Model: Challenges of Sustainability' (2017) 34 South Asia Journal.
- Mohammad N, 'Environment and Sustainable Development in Bangladesh: A Legal Study in the Context of International Trends' (2011) 53(2) International Journal of Law and Management.
- Khalid B, 'Climate Change Mitigation and Sustainable Development in Bangladesh: Through Renewable Energy and Its Technology' (2013) Lap Lambert Academic Publishing GmbH KG.
- Razzaque J, 'Public Interest Environmental Litigation in India, Pakistan, and Bangladesh' (2004) Kluwer Law International.
- Kumar S, 'Sustainable Development Goals And Bangladesh: The Role Of Parliament' (2016) 6 International Journal of Development Research (IJDR).

Cases

- *Dr M Farooque v. Bangladesh* (1997) 49.

Legislations, Policies

- The Constitution (Fifteen Amendment) Act 2011.
- The Constitution of Bangladesh 1972.
- The National Forestry policy 1994.
- The National Agriculture Policy 1999.
- The National Land Use Policy 2001.
- The Environment Court Act 2010.
- The Brick Making and Burning (Control) Act 2013.
- The Conservation of Play Ground, Open Place, Park and Natural wetland in Metropolitan City, Divisional Town and Municipal Area of District Town Including All Municipal Area Act 2000.
- Bangladesh Water Act 2013.

Newspapers and Websites

- ‘Pitfalls’ Ahead Of Bangladesh Getting Out Of LDC Bloc (*Atimes.com*, 2018) <<http://www.atimes.com/article/pitfalls-ahead-bangladesh-getting-ldc-bloc/>> accessed 25 June 2018.
- ‘Bangladesh: A Country Marching Ahead towards Development’ (*vietnamnews.vn*, 2018).
- <<http://vietnamnews.vn/life-style/424999/bangladesh-a-country-marching-ahead-towards-development.html#IGd17HaPe1Sf8W7K.97>> accessed 18 June 2018.
- Skye J, ‘Why Is Sustainable Development Important? | Lovetoknow’ (*LoveToKnow*, 2017) <https://greenliving.lovetoknow.com/Why_Is_Sustainable_Development_Important> accessed 10 July 2018.
- Singh S, ‘How Long Will Fossil Fuels Last?’ (*Business-standard.com*, 2015) <http://www.business-standard.com/article/punditry/how-long-will-fossil-fuels-last-115092201397_1.html> accessed 7 July 2018.
- Islam N, ‘The Broader Significance Of The Environment Movement In Bangladesh’ [2002] *Bangladesh Poribesh Andolan*.
- Tribune Desk, ‘35% of Hazaribagh tanneries relocated to Savar’, *Dhaka Tribune* (Dhaka), 11 June 2017.
- Kuttumari R, ‘Sustainable Development: The Goals And The Challenges Ahead’ < <https://www.theigc.org/blog/sustainable-development-the-goals-and-the-challenges-ahead/>>. ed-savar/> accessed 20 May 2018.
- Karim MJ Gustafsson, ‘In Pictures: The Brick Fields Of Bangladesh’ (*Aljazeera.com*, 2014) <<https://www.aljazeera.com/indepth/inpictures/2014/05/pictures-brick-fields-banglade-2014517134431553324.html>> accessed 19 July 2018.
- Hossain M, ‘To Cut Brick Kiln Pollution, Bangladesh Constructs New Building...’ (*U.S.*, 2017) <<https://www.reuters.com/article/us-bangladesh-construction-climatechange/to-cut-brick-kiln-pollution-bangladesh-constructs-new-building-materials-idUSKBN1D81IA>> accessed 14 April 2018.
- Sayed A, ‘Sustainable Forest Resource Management’ *The Daily Star* (2017)’
- Howes M, ‘HOWES: Why Sustainable Development Plans Have Failed’ (*Business Daily*, 2017) <<https://www.businessdailyafrica.com/analysis/Why-sustainable-development-plans-have-failed/539548-3876264-2x0u20/index.html>> accessed 5 October 2018.