

ENVIRONMENTAL POLLUTION BY BRICK KILN IN BANGLADESH: AN ANALYSIS OF THE EXISTING LEGAL FRAMEWORK

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ABSTRACT

Bangladesh has ensured its place as the fourth largest brick making country in the world. There are approximately 7000-7200 brick kilns across the country where around one million people are directly or indirectly working. Every year around 23-32.4 billion bricks are produced in Bangladesh which is worth 1% of the national gross domestic product. Besides, brick kilns are regarded as one of the main sources of environmental pollution as they produce ample carbon dioxide (CO₂), sulfur dioxide (SO₂), and suspended particulate matter (SPM) that push human being suffering various diseases *i.e.* heart dysfunction, cancer in the lung, respiratory infection, etc. Brick kilns are the principal air polluters in the divisional cities of the country (especially in the dry season) and the brick kilns are badly damaging the ecological balance in Bangladesh. The impacts of brick kilns, however, may vary from sector to sector. Neither are any significant or effective actions taken regarding these issues and the prevailing environmental laws in Bangladesh are not adequate enough to address these problems properly. The paper aims to determine the causes of pollution by the brick kilns and their impacts on the environment and livelihood; to scrutinize the prevailing related laws and policies and to conclude with recommendations to stop pollution caused by the brick kilns. The paper makes use of secondary data *i.e.* books, articles, national and international law reports, Acts, etc.

KEY WORDS : Bangladesh, Brick kiln, Environmental pollution, Human health, Impacts.

INTRODUCTION

Environmental challenges are growing worse as the planet has started facing the deadly consequences of a bad environment. Now, these problems are so far way to mitigate them without international co-operation. Acid rain, ozone depletion, climate change, loss of biodiversity, toxic and hazardous products, and wastes, pollution of rivers, and depletion of freshwater resources are some of the very common issues that happened as greenhouse gas effect. Since the mid-1980s, there have been tremendous developments in international law centralizing the conservation of natural resources (Sands, 2003). A number of international treaties

such as the Rio Declaration on Environment and Development, 1992; the Kyoto Protocol on health in 1997; the Paris Agreement, 2016 etc. came into force to protect the world's natural resources. Though Bangladesh is not a big carbon emission country, it is one of the most suffering countries for climate change. Increased sea level, heavy and unpredicted rainfall, growing salinity problem in coastal areas, etc. are some major consequences of climate change Bangladesh faces that lead the economic growth and agricultural the productivity of the country to a big challenge. Therefore, realizing the significance of natural resources, the government has already taken some steps to protect its bio-resources as an obligation conferred on it by the Constitution

(Article 18A of the Bangladesh Constitution). It signed in almost every treaty related to protecting natural resources. On the other hand, it enacted the Environment Conservation Act, 1995; the Environment Conservation Rules, 1997; the Environment Court Act, 2010 and the Brick Manufacturing and Brick Kilns Establishment (Control) Act, 2013. The traditional brick kiln is one of the main sources which are causing more carbon emission that results in climate change. Thus, thinking to come out of the traditional brick manufacturing which consumes more clay and water and emits more emission, started a long time ago in China and India as well as in Bangladesh. In Bangladesh green brick producing which is less water consumption and does not need clay and coal to burn is not mandatory though provisions thereof have been placed in the Brick Manufacturing and Brick Kilns Establishment (Control) Act-2013.

Brick Kiln and Environmental Pollution

Bangladesh has ensured its place as the fourth largest brick making country in the world. There are approximately 7000-7200 brick kilns across the country where around one million people are directly or indirectly working. Every year around 23-32.4 billion bricks are produced in Bangladesh which is worth 1% of national gross domestic product (ICIMOD, 2019). Besides, brick kilns are regarded as one of the main sources of environmental pollution as they produce ample carbon dioxide sulfur dioxide, and suspended particulate matter that push human being suffering various diseases. As to a report published by the Daily Star (a renowned English newspaper in Bangladesh), brick kilns are the principal air polluters in the divisional cities of the country especially in the dry season (Alam, 2020). In addition, Dhaka was depicted as the worst city in Bangladesh while its position is third in the list of the world's environmentally worst countries in a report published by the World Health Organization in 2018.

Consequence of Pollution by Brick Kilns

Brick kilns in Bangladesh are badly damaging our ecological balance. Ordinarily, topsoil of agricultural land is used in making raw bricks. About 3-kilogram soil is needed to shape a brick. Topsoil is radically enriched in organic matters and nutrients which help more agricultural production. Losing topsoil is badly affecting agricultural production. Therefore, in

India, using topsoil for making brick kilns is regulated strictly (Hossain *et al.*, 2019). The impact of brick kilns, however, may vary from sector to sector.

Impact on Land

Traditional brick kilns use mud as the main ingredient of brick making. In making 3-4 million bricks, the country loses about 500,000 to 1,000,000cft topsoil of its farmlands every year (Alam, 2009). Therefore, farmlands lose widely their fertility and the country faces low production in its agricultural sector because of the loss of topsoil which is regarded to be the highest reservoir of organic matter. Moreover, farmers of the area where one or more brick kilns are located are experiencing a great reduction in their agricultural yields due to excessive air pollution and reduced fertility. The processes of establishing new brick kilns closing to arable land are not stopped. Besides, acid accumulated owing to the SO₂ and NO_x produced by the brick kilns is causing the agricultural productivity badly affected.

Impact on Environment

As to a report published by World Bank in 2014, more than 9.8 million tons of greenhouse gases are being emitted every year by brick kilns of Bangladesh. But in 2017, the aggregate CO₂ emission was 15.67 million tons (Faruque, 2017). In addition, using coal in the brick kiln releases CO₂ which is severely blamed for global warming and climate change. In the case of using low-quality coal or leakage in the chimney, the burning process of brick needs more coal which furthers more carbon emission. Consequently, every year Bangladesh faces very negative results of climate change. Besides, the International Panel on Climate Change has already warned Bangladesh as it exists in the line with the countries deemed to be greatly endangered by climate change. Consequences of carbon emission extend from the increase in the sea level and aerial heat, heavy and unprecedented rainfall, and natural catastrophes such as cyclones, saltiness and drought which significantly hinder our rapid economic growth every year (Hossain, 2004).

Impact on Human Health

A pollution-free environment is one of the greatest challenges for the 21st century. Environmental pollution has become a matter of concern for today's world. But continuance urbanization and growing economic activities are accelerating energy use and

waste disposal. Eventually, greenhouse gas emissions and acid deposition are on a rising lead people to suffer a drastic health problem (Kelishadi, 202). In 2018, the World Health Organization released a document mentioning that approximately 7 million lives are being lost every year because of the excessive particulate matter in the air as it enters into deep of the lungs and cardiovascular system. A number of deadly diseases such as stroke, heart blockage, lung cancer, chronic disorder, respiratory infection, and pneumonia are being caused because of the excessive existence of particulate matter in the air (Alam, 2019). According to the same report, about 4.2 million people died in 2016 for outdoor air pollution while indoor air pollution caused by cooking with infesting fuels and hi-tech exposed 3.8 million lives to death in the said year.

Legal Mechanisim for Eastablishing Brick Kiln in Bangladesh

A pollution-free environment is a significant matter for every nation as it plays a crucial rule in the wellbeing thereof. Like other nations, the government of Bangladesh has fully focused on the protection of the environment from the activities of its nation. It made a number of laws to control environmental pollution therein. The Bangladesh Environment Conservation Act, 1995; Environment Conservation Rules, 1997; the Environment Court Act, 2010 and the Brick Manufacturing and Brick Kilns Establishment (Control) Act, 2013 are providing for reducing pollution emitted from brick kilns of Bangladesh. Without an environment clearance certificate, no industrial unit or project, for example, brick kiln, can be established in Bangladesh (Bangladesh Environmental Protection Act, 1995). Even if any kind of extension of the industrial unit is illegal if no clearance certificate is taken from the Director-General of the department of environment of Bangladesh. Besides, in the case of industry or unit fell under the category of 'Orange-A, Orange-B and Red category,' classified by rule-7(4) of the Environment Conservation Rules, 1997, firstly there shall be a location clearance certificate. The validity, however, of the said environment clearance certificate lasts one year except Green Category that is three years (Alam *et al.*, 2019). To get an environment clearance certificate, the candidate shall make an application in 'Form-3' to the Director of the department of environment. As the brick is categorized under 'Orange-B', some particulars shall be included in the application for an environment

clearance certificate.

PROVISIONS OF THE BRICK MANUFACTURING AND BRICK KILNS EASTABLISHMENT (CONTROL) ACT-2013.

The government of Bangladesh, however, made the Brick Manufacturing and Brick Kilns Establishment (Control) Act, 2013 to protect the environment and biodiversity and to further the development of the country. This Act has 25 sections and has been come into force on 1st July 2014.

License for Establishing Brick Kiln and Brick Making

Establishing brick kiln and making any brick except block brick without license given from the District Commissioner of concerned area is illegal for anyone. On other hand, no brick can be framed in any place except in the brick kiln defined in this act.

Controlling and Reducing Using Mud

Any kind of clay collected from arable land or hill or hillock can be used as raw materials for brick making. Getting pre-approval of the District Commissioner, anyone can collect clay from any other place though the source of the clay with affidavit shall be included in his license for brick making. In addition, hollow brick or block brick shall be made in the area determined by the government to reduce the exploitation of clay for brick making. Block brick making may be made mandatory by the government to reduce the excessive use of clay.

Provisions for fuel using

No one can use wood as fuel in making brick though he is allowed to use coal. Coal, however, exceeding the determined standard sulfur, ash, mercury, or any other element of the same kind can be used as fuel for burning brick.

Prohibited Place for Brick Kiln

Any residential, protected or commercial area, city corporation, municipal area, or center of Upazila (local administration), any forest whether it may be owned by the government or any person, agricultural land, environmentally critical area, and degraded air shed shall be prohibited for establishing any brick kiln. And no authority of the Department of Environment or any other organization after the commencement of this act

provide license or any kind of approval for establishing brick kiln in those places. However, the brick kiln can be set-up:

- In a place which is at least 1 kilometer away from the prohibited places;
- In a place which is at least 2 kilometers away from the boundary of the government-owned forest;
- In case of any hill or hillock or any place annexed thereto, there must be ½ kilometer distance between the kiln and hill;
- In the case of hill tracts area, brick kiln can be set up in any place not determined by Hill Tracts Environment Development Committee;
- In case of any specialized infrastructure, railway, educational institution, hospital or clinic, research institution or any other place or institution of the same kind, there must be 1-kilometer distance between them.

Provisions for Issuing License

To get a license for establishing a brick kiln, a person shall have to make an application in the prescribed manner in 'Form-A' of the Schedule of this act to the District Commissioner or any officer empowered by him of the district where the kiln locates. The application shall accompany by the prescribed fee and all documents concerned to the kiln. The application, however, is not allowed without an environment clearance certificate issued by the Department of Environment under the Environment Conservation Act, 1995. After application, the District Commissioner shall be sent it to the investigation committee and order the committee to resent it with their recommendation. If the District Commissioner is pleased with the recommendation made by the Committee, issue a license for making brick in 'Form-B' of the Act.

PENALTY AND COGNIZANCE OF THE OFFENCE

In this existing Act, the maximum imprisonment is 5 years while punishment can be given up to 20 lacs Taka. However, there is a provision to provide either punishment, imprisonment, or fine, together. Offenses under this act are non-cognizable and bailable. Cases under this act maybe disposed of only by the Mobile Court established under the Mobile Court Act, 2009 or Environment Tribunal established under the Environment Court Act, 2010, or by a special magistrate. To complete all

proceedings in disposing of the case under this act provisions of the Mobile Court Act, 2009, or the Environment Court Act, 2010, or the Code of Criminal Procedure, as the case may be, shall be applied.

SCRUTINIZING THE EXISTING SCENARIOS OF BANGLADESH

Brick plays a vital role in building houses as there is no enough wood or other materials which can be big competitor for brick in building houses. To mention the exact number of brick kilns in Bangladesh and bricks produced them is a hard nut to crack as there is no statically figure thereof or any web portal dealing with kiln industry of Bangladesh. There are about 7,000-10000 brick kilns in Bangladesh and the annual production from them is 2,100-4,300 crore bricks. This sector of the industry plays a 1% rule in the GDP of Bangladesh (Hashem et al, 2017). Moreover, most of the brick kilns in Bangladesh follow 'Fixed Chimney Bull's Trench Kiln (FCBTK) or Zigzag FCBTK' technology while there are a few numbers of 'Tunnel kiln, Hybrid Hoffmann Kiln and Hoffmann kiln'. Though how far each technology is responsible for carbon emission has not been categorized yet, 'Tunnel kiln, Hybrid Hoffmann Kiln and Hoffmann kiln' technologies are fewer answerable for environmental pollution than others. To protect the environment and biodiversity of Bangladesh, the government made a law named the Brick Manufacturing and Brick Kilns Establishment (Control) Act, 2013. Three types of bricks, brick made by clay; hollow brick, and block, are referred to in the act. As to section 5(3) of the act, to reduce the exploitation of the topsoil, the government by notification in the official gazette, will give an order to produce hollow bricks at a fixed rate in a prescribed time. Six years have been gone after the commencement of the said Act, no official direction by the government is given to produce hollow or block bricks. However, in December 2019, the ministry of environment, forest, and climate change circulated an order to the state-agencies to use block-brick made of sand, cement, fly ash or materials other than clay- in the state-related constructions from the current (2020-2021) fiscal year.

RECOMMENDATIONS AND CONCLUSION

The environment is mostly related to the existence of living and non-living organisms. If it is extremely

polluted by various factors, lives and biodiversity would be endangered to extinction. Thereby, it is the right time for both international leaders and the government of Bangladesh to focus on reducing the rate of pollution. As the traditional brick kilns are more responsible for carbon emission in Bangladesh, the government shall have to give focus on:

- Making a long-term policy for the reduction of pollution in brick kilns;
- Inspiring the owners of kilns to change their kilns into environment-friendly kilns that need no topsoil or coal to burn;
- Managing awareness program for both the producers and users of bricks as to the efficiency of green bricks;
- Managing an effective training for how to establish an environment-friendly kiln;
- Proving loans and incentives to the owner to produce green bricks;
- Bringing a change in the existing laws to ease the procedure of getting approval or license to set up a kiln;
- Furthering research to find out new technology to produce green brick which would be less pollutant and less expensive;
- Increasing strict monitoring of the proper application of the existing laws related to brick kilns and
- Creating a specialized web portal which will contain all information related to the brick kiln.

However, Dhaka, the capital of Bangladesh was declared by the World Health Organization as one of the most polluted cities in the world. Brick kilns established surrounding Dhaka are said to be responsible for about 58% pollution thereof. On the other hand, the demand for bricks as building materials is rising up. As a result, the country Bangladesh loses largely topsoil of its arable land every year and the environment is being polluted more due to the coal burning in the kilns. So, there is no way to save the future generation of Bangladesh except taking harder steps to establish environment-

friendly brick kilns in the country.

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