

Violation of the Environmental Laws by the Brick Kilns: An Empirical Study on the Situation of Brick Fields of Rangpur District

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Abstract

This paper is about the violation of environmental laws due to the unauthorized and uncontrolled numbers of Brick fields in Bangladesh. The study has investigated the impact and consequences of brickfields on the environment and agriculture around four kilometers within the union of Badargang thana under Rangpur district of Bangladesh where the infrastructure development has just begun since few years only. This study employed qualitative method in order to offer an in-depth and elaborate description of the impacts of brickfields (8 brickfields) on the local environment and agricultural lands, as well as reveals the law violation nature by brickfields agents. These brickfields are providing with the demands of the nearby towns and villages over looking the environmental effects on public lives and agriculture. It has been observed that every elements of environment is being threatened either directly or indirectly due to the unlawful and harmful use of the brickfields. Mentionably, the negative impact on arable lands, agricultural crops, plants and trees are very serious and injurious. Brick kilns are using top-soil from the nearby agricultural lands and consequently contributing to the low productivity and soil degradation which is the complete violation of Environmental law and a threat to natural habitat. Besides, brickfields are producing a lot poisonous gases that contribute to the air pollution and seriously damages nearby agricultural crops, plants and trees and public life which is also a crime punishable under the national penal system. This research work also relevantly focused on the recommendations in order to get rid of from the negative impacts caused by brickfields.

Keywords: Agricultural Land, Brick Kiln, Crime, Environment, Pollution, Laws, Violation.

Introduction

Bangladesh has earned its place among the list of the developing countries in the world. The population of this country has been multiplied just after independence in 1971. This huge number of population needs houses, roads and other civic amenities. Urbanization, industrialization and standards of living are playing a vital role for the infrastructural development of urban towns, cities and villages. The main elements of infrastructural development in bricks because concrete is used here in a very limited scale and most of the houses, buildings and other infrastructural work are done with bricks coming from the brickfields.

The number of brick fields are rising so fast that it already rose to 9000 plus brickfields; most of them are in Dhaka, Faridpur, Mymensingh, Gazipur, Narayangong, Comilla, Bogra, Dinajpur, Rangpur, Jessore, Chapai-Nawabgong, Chittagong etc. [1]. Bangladesh has about 6,000 authorized brickfields and numerous illegal ones [2]. The illegal brickfields do not have proper

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resources to run and proper license to keep the fields into track. The brickfields are typically small independent units and operate 24 hours during the dry season. Every year more than 20 lakh metric tons of low quality coal and 20 lakh metric tons of wood are burnt in these brick fields along with tires and rubber [3].

These brickfields are directly or indirectly dependent on nearby agricultural lands in order to provide brick making soil to their kilns. Consequently a negative impact is seen on the top soil providing agricultural lands. This research work explored the nature of the impacts of brickfields on environment and agriculture at the study areas identified by the researcher and studied the nature of violation of environmental laws and regulations.

Background of the Study

With the advancement of science and technology and the interventions of the multinational corporations, the urbanisation rate has been increasing. The rapid growth of urban and rural infrastructure development including house buildings, the demand and necessity of bricks are increasing day by day. As a result, a huge number of brick kilns across the country are being established in order to meet the public demands. Before 1970s, the number of brick kilns was not so much visible as now, is seen across the country. In the past, brick kilns were established by Zamindars, local rich and influential persons only for making their house buildings not for any intention of brick business. After 1970, brick kilns were established in a limited scale. During the decade of 1980s, the brick kilns business started across the country in a full scale. In the proposed study area, brick kilns business also started, during 1980s and from that time the location of brick kilns in the proposed study area (a union of Badargang thana under Rangpur district) has been replaced and changed from one place to another after a certain period of time. Before 2004, the brickfields in the study area were with the support of steel sheet made chimneys for brick burning and emitting black smoke from the brick kilns.

The impact of steel sheet made chimneys, which are used for brick kilns, on the nearby environmental elements (i.e. plants, trees, agricultural crops, air etc.) are so intense. It causes serious damages caused by black smokes, coal ash, dusts, burnt coal and woody grinds emitted from brick kilns. On the other hand, agricultural lands have been degraded and unusable for long time as the top soil of the lands is used for the brickfields. The farmers, adjacent to the areas of brickfields, are either forced or compelled to sell the topsoil of their lands due to economic hardship.

To reduce the bad impact of brick kiln over the environment and misuse of brick kiln the Ministry of Forest and Environment of People's Republic of Bangladesh has provided some directions relating to environmental concerns due to brickfields on the 20th October, 2002. According to the directions, brickfield owners have to build up environment friendly 120 feet height concrete made chimney instead of steel sheet made chimney for brick kilns. Top soil of nearby agricultural lands is also prohibited for brick making according to the directions.

To criminalise the act of the owners of the brick fields in using them illegally and causing harm to our country the government has taken few steps but in reality that directions are not being

implemented properly either in case of concrete made chimney or in case of top soil using from the nearby agricultural lands. Violation is also visible in case of wood burning whereas coal burning is only approved by the DOEF authority in the brickfields. Brickfield owners dare to violate these rules and regulations under the auspices of corrupted Government officials.

Considering the entire situation discussed earlier in paper on anomaly and violation of environmental laws, this paper has been prepared to shed lights on the impacts and implications of brick fields on the nearby local environment, agriculture and public health systems.

Objective of the study

Bricks are the essential building blocks which have been used for centuries. Besides with the advancement of technology the free market economy has boosted the infrastructure development in the world as well as in our country. This industry has also created employment opportunity for the poor community of the society and also plays an important role in our economic growth and national income. Brickfield industry is highly dependent upon lands for making bricks. It also uses other natural resource like plants and trees, coal etc. But the industry has now become concerned about environment through the country. There are more than 9000 brickfields in the country now [1]. A large number of brickfields are seen in the northern part of Bangladesh, especially in Rangpur district which has recently been declared as an administrative division. This is the main reason for which this area has been selected for the study. For the study, a union of Badargang Thana under Rangpur district is selected, there are eight brickfields densely established within 3-4 km area. These brick kiln industries continually deplete the topsoil cover of the agricultural lands adjacent to the brick kilns or the areas ranging 8-9 km. These brick kilns also burn a large amount of plants and trees and thousands of tons of low quality coal. As a result nearby local air becomes seriously polluted and local forest has lost its balance.

The people living adjacent to the these brick kilns are experiencing land degradation and low agricultural productivity, deforestation and serious air pollution impacts including bad smell of black smokes and poisonous gasses emitted from the chimneys. Actually brickfield has turned the locality environmentally disastrous and only because of this reason, this research title attempts to reveal the problems and impacts cause by brickfields on the local environment and agricultural products in an explorative way. During dry season, the brickfields operate in full swing with black smoke, lots of noise, hustle and heat. This preset study aims to analyze the environmental impacts due to the existing locations of the brickfields within 4 Kilometers of a Union of Badargang Thana under Rangpur district.

Besides, the brickfields are working not only as an agent of building materials but also an agent of environmental pollution and land degradation in the study area found out by the researcher. Apart from the violation of environmental law, the present research tried to focus on the following objectives:

- investigate the association of brickfields with local environment and agriculture
- find out the impacts of brickfields on the agricultural land and crops
- uncover the contact of brickfields on the local environment (i.e., air, plants and trees) and
- explore the effects of brickfields on the health condition of people living adjacent to the study area.

Theoretical Relevance

To understand the study problem theoretically and from different perspective the author considered a number of theoretical paradigms and approached connection with environmental issues as this piece of work attempts to explore the impacts on environmental elements, (i.e., air, land, plants, trees and human being) caused by Brickfield industry.

Catton and Dunlop's [4] in their review of *New Environmental Paradigm* (NEP) pinpointed the distinctive core of the field as a new human ecology, which focuses on the interaction between the physical environment and social organization and behavior when it came to identifying areas of research in environmental sociology. However, they allowed a number of topics (built environment, natural disaster, and social impact assessment) which seemed to stretch the parameters of the field rather than to narrow them [5]. "Environmental Scientists are now in favor of recent social change in terms of non-anthropocentric viewpoint" [6]. As the environmental issues and constraints are creating a number of new social problems continuously so the new environmental paradigm has become more important for environmental discussion.

The core philosophies of the NEP [6] are as follows:

- The human being is one of the essential element of the environment;
- Intentional social interventions may cause the consequential impacts on the surrounding environment;
- The earth has its limitation but the human needs are unlimited, therefore to fulfill the human needs problems will arise and create chaos between environmental and human needs.

Brickfield as an industry and as a purposive human interventions works to fulfill the infrastructural demand of the human being. So logically there happen consequential impacts on the surrounding environment and agriculture due to purposive human interventions through brickfields. From the above dimension it is clear that this paradigm is closely related with this research topic.

Environment and its sustainability are seen as critical for the continuation of human existence by the *Marxist Environmental Theorists* but the environment is viewed primarily as a set of resources for meeting human development. It is a human first view that is pushed by the leaders and peoples of the developing world. To them the fight for development and justice is more important than the fight to save the trees. [7]

Purveyors of the Marxist environmental theory are quite clear about who they blame for the destruction of the environment: advanced industrial capitalism and its search for wealth, power and profit. It follows from if that this environmental issues are fundamentally social class issues in which the corporation and the estate lien up in opposition to ordinary citizens. [5]

To analyse the problems with the environment caused by brickfields, anyone would find two fundamental social classes, i.e., one is Brickfield owners and Govt. authority and another is ordinary people living adjacent to the areas of brickfields. Brickfield owners in collaboration with govt. officials continue their industrial exploitation over the ordinary people living near the areas of brickfields through the process of top soil removing of their agricultural lands, burning

indiscriminately plants and trees and threatening to serious air pollution.

Karl Marx has always tried to focus the anomalies between two classes. Actually the Marxist environmental approach draws its inspiration from the nineteenth century writing of Karl Marx and Friedrich Engels. Their analysis of social structure and social change has become the starting point for several formidable contemporary theories of the environment [5].

Contemporary Marxist theory emphasizes not only the role of capitalists but also that of the state in fostering ecological destruction. But elected politicians and bureaucratic administrators are depicted as being centrally committed to propping up the interests of capitalist investors and employers. While the incentive here is partly material i.e., local development, future job offers, poverty reduction etc. Within environmental Sociology, probably the most influential explanation of the relationship between capitalism the state and the environment can be found in Alan Schnaiberg's book "The Environment: From Surplus to Scarcity [8] ". In that book, Schnaiberg outlined the nature and genesis of the contradictory relations between economic expansion and environmental disruption.

Schnaiberg has depicted the political economy of environmental problems and policies as being organized within the structure of modern industrial society which he labels the Treadmill of Production. This refers to the inherent need of an economic system to continually yield a profit by creating consumer demand for new products, even where this means expanding the ecosystem to the point of carrying capacity [5].

Schnaiberg [8] also detects a dialectic tension between Treadmill of Production and demands for environmental protection. He describes this as a clash between "use values" (the value of preserving existing unique species plants and trees, animals, land, water and air) and "exchange values" (which characterizes the industrial use of natural resources). As environmental protection has emerged as a significant item on the policy agendas of Governments, the state must increasingly balance its dual role as a facilitator of capital accumulation and economic growth and its role as environmental regulator.

Here we can compare the two values i.e. 'use values' (preservation of land, air, water, plants, trees, animals) and 'exchange values' on the impacts of brick fields. The brickfield owners tend to run towards the exchange values of natural resources through industrial use but the massive population of the Brickfield adjacent area tends to run towards the use values of the natural resources through preservation. Under this contradictory position, by enacting Brickfield related environmental policies and procedures which are complex ambiguous and open to exploitation by the forces of capital production and accumulation, the state reaffirms its commitment to strategies for economic growth and as a facilitator of capitalists.

Methodology

The study has aimed at understanding the hazardous and disastrous problems of the society which has been created by man-made environment. The method, which is used in the study, is fundamentally socio-economical and socio-environmental. Since the proposed research deals with a number of interrelated issues including land degradation, context of soil selling, agricultural damage and plant or trees' effect, effect of air pollution on health and environment from socio-

environmental point of view, it depends on both the primary and secondary sources of data. Among primary sources, the speeches of farmers, local people, and experts have been included who were interviewed with semi structured questionnaire.

This particular study has been designed mainly by the help of qualitative method because of its hidden, unexplored and interpretative nature and character. As the author wanted to bring out the hazards and problems created by manmade environment (i.e. brickfields) from the people closely adjacent to the brickfields, an in-depth Qualitative approach is needed here to get the actual scenario and experience. So the researcher has taken the Semi-structural in-depth and Observation method during the period of fieldwork.

Study Area Selection

To understand the problem from an unbiased and systematic way the author has conducted the study in the Modhupur Union of Badargang Thana under Rangpur District. As mentioned earlier that Rangpur has been declared as a Division of Bangladesh which has helped to select this area for study. The area is very adjacent to Badargang Thana. In the study area within 3-4 kms, there is commonly visible number of 8 brickfields which are not only densely established from each other but also very closely situated to the nearby villages. This particular nature of the area has also helped the researcher to select it as his study field. Villagers of the study areas are very much concerned about the multifaceted impacts of brickfields due to many relevant reasons which has been revealed during the course of the field work.

Sample Selection

The researcher has selected 4 brickfields adjacent to the effects bearing village area by following random sampling procedure. Based on the basic rationale of the study, the study population is the village farmers who are closely living to the effect cycle of the brickfields area including brickfields managers and truck drivers who bring top-soil for brick making.

Therefore, to conduct this piece of research work, the author interviewed 12 farmers, 3 Brickfield authority and 3 truck drivers engaged in brickfields, with the objectives to organize the work in a representative manner, the researcher followed simple random sampling method to collect the respondents. The village heads (Union Chairman) were also interviewed to collect the key information regarding the violation of environmental laws and other effect on the villagers.

Results and Analysis

This paper is based on field data and information on the violation of the environmental laws by the Brick Kilns agents and the impacts of brickfields on the local environment and agriculture adjacent to the areas of sampling brickfields. The main field work was exploratory in nature focused on the violation of laws and the negative impacts on the local environment as well as human health.

Environmental Law Violation and Irresponsibility of the Government Offices

Brick is the important and also highly demanded element for infrastructure development and so it has become an important profitable business. As an industry it is the mandatory duty of the

investor to collect permission from the Deputy Commissioner (DC) in order to establish a brickfield. After getting the proposal from the potential brickfield company the DC shall visit the brickfield's location and if the location is barren fallow land and 3 kilometers distant from locality and 1 kilometer distant from any tree garden consisting of at least 50 trees, DC will permit the brickfield authority to establish the industry [9].

But after visiting the study location the author has found gross violation of Brickfield Amendment Act and the game of corruptions of DC Office. Three brickfields (R.B.L, U.B.C, and M.B.L) have been established within one and a half km (1¹/₂ km) in a triangular position surrounding by densely populated locality in the study area. Another sampling Brickfield (R.B.L-2) has also been established within half km distance from the locality. The total picture identified show the gross violation of environmental laws where the DC office is also connected in issuing illegal license for establishing brickfield.

Brick Fields are Directly Violating the Brick Burning Act, 2001

Brick Burning Act only allows burning of bamboo stumps, date trees and coal for the brick kiln where the author found different pictures at the study area. This researcher has been informed by the local farmers on the condition of anonymity that brickfields authorities are indiscriminately using the ingredients of plants and trees as fuel for their brick kilns in order to make more profit by spending less. Besides the managers of the three brickfields being aware of the consequences said that they burn about five tons of firewood when they set fire into the brick kilns and after that they use small amount of coal. But in reality all of them were hiding the fact and intentionally violating the Brick Burning Act which has come out from the respondents while they were interviewed.

Tricks of Brickfields' Authority and Hardship of the Farmers

During the study the author has investigated the causes of selling farm land to the brick kiln owner. The author found that the owners compelled the land owners to sell the topsoil of their agricultural lands and ultimately the total land. The researcher has met one respondent, a farmer who shared with me that he was compelled to sell the deep soil of his land in order to meet the dowry demand for his younger sister. In addition some owners play tricks with farmers either tempting them with high price of topsoil or forcing them to sell the land with the help of local mastaan.

Impact of Brickfields on the Agricultural Lands and Crops

The study revealed that the impact of brick field is so intense on the top soil rather than on the crops. The brick kilns are also the master source for producing the Green House Gases. The elements of GHGs produced from brickfield areas are Ash, dust, SO₂, CO₂, CO particulate matters and volatile organic compounds which deteriorated air quality of surrounding brickfield areas and acid rain syndrome occurred on soil surface vegetation [10]. Crops, which are grown in contaminated soils may contain residues of chemicals and they become unfit for human and animal consumption [11]. As the author visited the study areas and found that the crops were less damaged where as the agricultural land faces degradation. It may be the cause of the brickfields'

chimneys which are not made of steel sheet and has a height of 80-90 but the scenario of land degradation and damage is very dangerous. Top soil of most of the agricultural lands near the brickfield was removed and used into the brickfields. Besides, the truck drivers who were interviewed revealed that most of the brickfields are trying to collect the topsoil for making bricks from the nearby 6-7 km distant areas with a basis of per truck soil price around Tk. 600-800. Though topsoil use for brick making is prohibited through the Brickfield Amendment Act, 1992, but the actual scenario is the gross violation of the said Act. As a result, the researcher concerns if this unabated top-soil collecting continues years after years, almost all of the agricultural lands within study area and nearby outside study area will eventually become less fertile and non productive which will also cause scarcity of fruits and vegetables.

Initiatives Taken by Farmers in Recovering their Land and Environment

The author has explored the study areas in order to find better solution to protect the land and environment. With the experienced gather from the field and views and opinions shared by the respondents, the author has come up with the following findings and recommendations which could save the land and environment. In order to make the land fertile the farmers need to use bulk amount of organic fertilizer. After that they have to use mustard cake, water hyacinths and residues of straw and wheat to make the soil healthier and nutrient. And then the lands have to be irrigated and kept under water until the residues got decomposed totally. Then they will have to use smoke TSP, MP and Urea fertilizer to make the land more fertile.

Impact of Brick Fields on Air and Forests

The researcher has found out serious air pollution in the study area. The researcher has been informed by the village heads that, when the brickfields operate in full swing from November to May; the brickfields to the adjacent area is covered with black smokes and spreads bad smell of coal burning. Due to serious air pollution, the people living near the brickfields experience suffering and various problems and disease like skin disease, eye irritation, inflammation of eyes, breathing problems, dizzy headache, asthma, hopping cough, cold fever and other chronic diseases which is shared by the key informants.

The researcher has also found that a deforestation process almost started as most of the plants and trees were being cut and burnt extensively in order to burn the brick and also those trees are cheaper than coal. The researcher was informed by the farmers and the truck drivers that each brickfield during the burning period burns nearly 30-40 tons of firewood. Having this information about wood and coal burning, the researcher concerns if this unabated wood burning continues into the brick kilns, the plants and trees of the study area and outside of the study area will lose its balance and will endanger the biodiversity habitat in our country.

Impact of Brickfields on the Human Body

Human body is very much susceptible to bad weather and environment. Especially the air is the important elements of environment which affect most. In a scientific study it has been observed that 0.2 microgram toxic equivalents of dioxins and furans are emitted as byproduct into the air during the production of each tone of brick, which is very harmful for lives [12]. During the peak season of the brickfields at the dry season (November-May), the brick fields produce a lot of

black smokes, coal grinds and dust particles in the nearby areas and ultimately endangers human's health condition by polluting the local living environment adjacent to the area of brickfields. Brick Burning Act, 2001 strictly forbids to establish and operate any brickfields within 3 km of any locality or garden. But from the study it has been observed that the brickfields have been established within 2 km of the locality. In the sampling study area, there are 4 brickfields (U.B.C, R.B.L, R.B.L-2, M.B.L) that produce a lot of black smokes along with poisonous gases like sulphur dioxide, carbon dioxide, and carbon monoxide, including dust particles and coal grinds and consequently push the people of the brickfields area into risky health condition [14].

Almost all of the respondents among farmers and truck drivers shared their health related sufferings and experience, saying that they felt headache, vomiting due to bad smell, itching of the skin, breathing problems at the time of Brick kilns ring (from November-May). One of the respondents adjacent to the (M.B.L) Brickfield area told me on the condition of anonymity that when the brickfields burn old motor tires and furnace oil, it becomes too difficult for them to breathe due to intolerable smell. Another respondent from the Brickfield adjacent area opined that during full sewing of the Brick kiln, they experienced frequent inflammation of eyes, eye irritation, dried skin, dizzy headache, breathing problems and fatigue.

Suggested Measures in order to get rid from Air Pollution, Deforestation & Land Degradation

The growth of population and the effect of globalisation have boosted the development process high which requires sufficient infrastructures. On the other hand unplanned and uncontrolled situation creates hazards for the environment. Brickfields generally lead to the environmental degradation like air pollution, deforestation and agricultural land damage. In order to get rid of environmental degradation caused by brickfields, the researcher thinks that the following suggestions should be followed and implemented:

- Irresponsibility at the government office has to be controlled and harsher punishment should be provided to the violation of Brickfield related Act;
- Plants and trees burning into the Brick kilns must be prohibited by law;
- Special attention should be paid to stop using the top-soil, and only the soil of fallow and barren high land may be allowed for using in the brickfields;
- The chimneys has to be built with the standard materials and follow the guideline;
- Government monitoring cell has to be established in order to reduce act violation and raise awareness among the people of the locality.

Conclusion

Brick field as the important part of the total infrastructure has been playing its actions all over the world. This paper has been prepared to elicit information on the present situation of environment and man due to brickfield. In this research the author has demonstrate an interpretative and exploratory analysis about brickfields by drawing its impacts upon the local environment and agriculture of the people living adjacent to the area of brickfields. It is an exploratory research where few research works were done previously in this regard. Based on the respondents' views

and opinions along with secondary sources, the researcher has identified the extent of impacts and sufferings caused by brickfields on their surrounding environment and agriculture.

The researcher has found some negative impacts on agricultural lands including loss of top-soil for brick making, except high fallow lands and ponds. The researcher also observed serious air pollution and massive burning of plants and trees into Brick kilns which also possess an environmental threat. It is undeniable that the brickfields create employment opportunity of nearly 200-250 poor people during operation and ultimately play an important role in our national economy and infrastructural development.

Finally the government authority should take special measures in order to establish brickfield building and maintenance manual using standard guideline. The owners and the managers should maintain the law and perform accordingly which will lessen violation of the Acts of Brick burning and others. In this regard, Brickfield authority will have to follow the Brickfield related laws, rules and regulations sincerely and responsibly as well as Government authority will have to ensure active monitoring in order to find out anomaly and irregularities in the brickfields. For doing this a strong monitoring mechanism needs to be introduced.

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