

# Physical and Socio-Economic Environmental Consequences of Brick Industry: A Case Study of Domohani Village

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**Abstract – Economic development of a society depends on industrialization either it's a town, city, state or a country .when we talking about modern industrialized fully concrete urbanized state at that time the importance of brick factory is highlight. Contribution of brick factory to the industrial development or in the establishment of modern society is highly appreciable. Brick factories play a complex role in socio economic development, but there are some of its most important effect sometimes it may be positive or sometime they are responsible for some adverse effect to the society also. The paper basically deals with the physical and socio economic consequence of brick industry of Domohani village of Barabani block and try to suggest a better alternative plan for solution related with the industry.**

**Keyword: Capitalism, Brick Kilns, Hierarchy, Sustainable Development, Emission, Special Monitoring Cell, Infiltration, Quarry, Crusher Machine.**

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## INTRODUCTION

India is the second-largest brick producer in the world, producing 200 billion bricks every year that comprise 13% of global production. The sector consumes around 35-40 million tonnes of coal per year. The brick kiln sector of India remains largely unorganized, according to the Centre for Science and Environment Brick factory is a factory for used for the manufacturing of bricks from shale or clay. There are numerous brick kilns in the study area, most of them used brick clinkers for firing the bricks and used crusher machine used for making dust (more fineness in brick) which are mostly harmful to the society, while the others are not. In the brick making process the following step are needed as follows.

- ▶ A quarry for clay.
- ▶ A mill for clay preparation.
- ▶ A building for making bricks or sometime open space within the factory is used in the spot area.
- ▶ Drying yard or shed for drying un burnt bricks before firing.
- ▶ A kiln for firing or burning the bricks.

▶ Last but not the list cheapest labor used to making or carrying bricks to the chimney and from chimney to the stock areas.

## LOCATION OF STUDY AREA:

Domohani village which is also known as Domohani Bazaar is located within Barabani C. D Block in Asansol sadar sub division.of Paschim Brahman district in the state of west Bengal (23°45'25.0"N 87°01'32.2"E).Domohani churulia road has highly socio - economic importance because it connect birthplace of great revolt poet kabi kazi Nazrul Islam on the other hand the road connect Goenka opencast coal mine .Barabani rail station is just 500 mt. from the main bazaar. The Jamuria Domohani road also connect sponge iron industrial belt of Ikhra semi town also. The study area extend from the nodal point ex. Bazaar areas to the outside as Kelejhora notundi road and on the opposite side Barabani, khaskhuthi Joyramdanga to Bhanora koliary road. It also extend from the right side Charanpur to the left side Vulunia road .As per 2011 census Domohani had a total population of 12480 of which 6423 (51%) were male and 6067 (49%) were female. Physical and Socio economic significance of brick industry is highly notable to the dweller of the study area.

**OBJECTIVE:**

- ▶ To find out the physical problems related to the brick industry.
- ▶ To find out the reason behind how local economy is suffered by this industry.
- ▶ How the education system and daily social livelihood is suffering.
- ▶ Culture is hampered by also sight pollution and other kind of pollution in bazar area.
- ▶ Identify man made artificial congestion.
- ▶ How the socio economic development is happen with this industry.
- ▶ Find out alternative suggestion that how to solve this problem.
- ▶ Ensure that brick factories are located in suitable place or not. They obey the rule or government policy or not?
- ▶ Improvement of environment by minimizing pollution by that brick kilns where applicable.

**METHODOLOGY:**

- ▶ To collect data from local people and from the brick factory.
- ▶ Direct observation or study of factory areas.
- ▶ Testing soil sample in laboratory of brick factories nearer or far from the factory.
- ▶ Talking to the local people suffering or getting benefited by this industry.
- ▶ Secondary data from other sources such as different books, journals and from websites also
- ▶ Collect information from traffic police and market shop beside bazar rode are.
- ▶ Collect information from so many brick suppliers and daily labors related to the industry.

**Important Brick Factories of the Study Area:**

Factory Side	Brick factory (used crusher machine)	Brick Factory (with ought crusher)	Brick Factory Not in Running condition
Goyenka road / Barabani Gram	Bull Sun Mmb Hira Srm Burn	Globe	Msd
Barabani Gate	Mbc Sky Run Pkm Jewel Surya King	Jem Rnb Bbc Gem	Gold SrK
Khaskuthi / Joyramdanga	Mkb Asha Snb Raja Sona Star Deba Steel Hero Dmc	Jeet Tata Jmt	Rupa Bnb
Charanpur	Bbf Sgm	Mukti Sbc Jbb	Mpf
Vulunia road	Bmg Raj Max Mmc	New Soma	Soma (very close to inactivate)
Bhanora Koliary road	Jaan Pilot	Power	
Kathaltala / Majhipara	Gmb		
Kelejhora Notundi road	Bharat		
Goshala			Dkm

**IMPACT ON PHYSICAL ENVIRONMENT OF BRICK FACTORIES ON STUDY AREA:**

**Negative impact:**

- ▶ In its National Brick Mission document, the Centre for Science and Environment pointed out that when burning of coal, biomass, agricultural waste, heavy fuel oil, wood and even old tyres are used as fuel during the burning process in the kilns release greenhouse gases including black carbon, plus oxides of sulphur and particulate matter coal which contain high amount of sulphur or coke petroleum responsible for highly release of oxide of

sulphur .Low quality of coal from illegal source produce huge amount of black carbon and other various pollutant.

- ▶ Soil sample (0 - 30mm) were collected from brick factory at a distance from 50mt , 100 mt, 150 mt in all direction east , west , north , south. Then soil texture was determined by international pipette method. Texture was found to be silty loam in nature. Generally this type of soil have moderate amount of organic matter which is responsible for improvement of soil texture, water holding capacity, nutrient supply for growth of plants and for agriculture.
- ▶ Concentration of organic carbon was .225 % at the soil of 50 mt from the brick factory and highest at 150 mt which was 99 - 95%.
- ▶ Soil Ph is also responsible for availability for nutrients for plants and for the activity of soil microbial organism. It is also found that Ph value is much more lower nearer to brick kilns (50mt) range from 5.75- 6.00 and increase with increasing distance from factory which was 6.50 – 7.00. We know that primary nutrient for plant growth as phosphorus , nitrogen , potassium and secondary nutrients like calcium , magnesium , sulphur is available to ph value range from 6.5 – 7.5.
- ▶ Ground water table are going to be lowering day by day by as pumping of ground water from below 500 mt are responsible for dryness and lack of water during summer season in the study area. Water holding or moisture infiltration capacity is reduced nearer the soil to the factory due to changes in texture or structure by continuous heating in the kilns which also destroy microbial organism of soil.
- ▶ Huge amount of fly ash after burning from the kilns and a cloud of dust from crusher machine spread far from the factory which accumulate or make a cover of top soil thus reduced its fertility and make pollution.

#### **Positive Impact:**

- ▶ The unfertile wasted or fallow land is used by this factory so return from that land must be appreciable.
- ▶ Extraction or burrowing of soil sometime helpful for mixing of soil horizon from below.
- ▶ Demand for local resource as for raw material like coal, sand, soil and above all fallow land is increasing day by day. With increasing the economic value of Local resources also help

significantly in the development of Domohani bazaar area.

#### **ECONOMIC CONSEQUENCE OF BRICK FACTORIES ON STUDY AREA:**

##### **Positive impact:**

- ▶ Economic growth in market area after spreading of this industry is found here because labors are gathered here from outside and increasing demand for commercial and for daily used product.
- ▶ Supply of bricks for building purposes to the local contractors at very cheapest rate is the reason for development in the contraction sector of local areas of the study area.
- ▶ Employment crisis is reduced as different kind of post is occupied by the local dweller on the other hand huge amount poor people are from local area and from outside are engaged as a labor to this industry.
- ▶ There are some families run to depend indirectly on this industry as they are work as supplier and transport are taking order from outside district as Bankura, Midnapore , Purulia and other state like Jharkhan and Bihar or Odisha also.
- ▶ Transport sectors getting benefited from this industry as daily labors are commuting on the one hand and the demand for ten , six, or twelve wheeler carrier are for transport purpose are increasing day by day.
- ▶ Welders and small wood constructor are getting order for making daily equipment for making and carrier bricks and others .In this way small economic sector are also getting benefited.

##### **Negative Impact:**

- ▶ Local people are suffer because sometime they have to buy at higher rate due to high demand of outside district is responsible for increasing price rate.
- ▶ Brick factories sometime favor outsider labor from outside district due to be free from local problems as quarrelling, threatening by local dadas or political issue and last they are as available as cheapen.
- ▶ Loss of land for agriculture, and unfertile soil making farmers life too tough and

convert them into labor. Fertility and productivity of land is gone forever nearer to the factory areas.

- ▶ The top gainers from this brick industry are the owners itself. In this way this industry support capitalism as the rich become richer overnight and others are becoming poor day by day. A clear hierarchy is found from owner -supplier-transporter-labor on the basis of economic growth and status of their lifestyle.
- ▶ Domohani - Asansol hazardous road condition , pothole here and there during whole year cause so many accident and make driving unsafe which arise from transport of heavy ten or twelve wheeler or un counting tractors vehicles run across the road with over loaded bricks by breaking traffic rules.

**SOCIAL CONSEQUENCE:**

**Positive Impact:**

- ▶ Mixing of culture in this area is happen due to settled down of people from different language and different culture sometime given birth a far better lifestyle to the dweller of this society.
- ▶ In the rainy season the work of the brick factory are totally stop. Then local boys are playing football and other kind of game.
- ▶ The brick factory which are totally closed or stop their production in that cases these factories chamber which contains full of water are carried by the local people for fulfilling construction or daily purpose.
- ▶ The fragment or the remaining of brick factories bricks or the other thing is carried by the local dweller foe hose construction.
- ▶ Minimum 250-300 labor are require in brick factory and they make small temporary house of tally and asbestos and their children are now going to school and their families are getting support by these brick factory.
- ▶ The factories after closing these small houses of the labor become a small para rather the left their house for example sainthal , majhi and dom para and they find another kind of job as loading and transport and other kind of job.

**Negative Impact:**

- ▶ The labor and the poor worker coming from distance place are suffering from many problems such as low wages , lack of medical treatment , toilet facilities , schooling or education for their children and also for their

drinking water and deprived also from electricity. Sometime they are died with poor health condition due to the negligence of rich owner of these brick industry.

- ▶ Communication or cultural gap is increasing day by day with the immigrant labor from far distance place with the local natives is very much harmful for social bonding and in diffusion of culture is break down due to lack of a bridge between them.
- ▶ Environment are getting polluted because a huge number of worker or labor of this industry make toilet under open sky is responsible for harmful for their health itself and on the other hand soil or sight pollution are go hand to hand.
- ▶ Those factories which are not in running condition are becoming a place for playing card, taking drinks, Smuggling, threatening, murdering and other so many unsocial activities.
- ▶ Huge amount of ash in the burning process are mix in the air are harmful to the nearer school or health centre , sometime children's are getting suffered by this fly ash. It is also note that the fish and other biological organism are died due to covering of surface layer and local ponds and wetland by this fly ash from the industry.
- ▶ Highly emission of harmful gases from the above 100 numbers of chimneys in this small study areas are making air polluted and sometime are slight higher temperature in compare to the surrounding areas are a sign of global warming.
- ▶ The concept of sustainable development are getting obstructed because land fertility was gone , top soil was extracted , local resources like coal for burning of brick and ground water in unscientific manner are responsible for exhaustion of this resource in future in the study area.
- ▶ Brick owners always want to buy coal as a fuel at very cheapest rate which is main raw material for burning dried bricks in the kiln, that's tendency of the owner are given birth a tough completion to the local coal supplier and they extracted coal from mining in totally illegal or in a unscientific manner is responsible for environmental degradation and local clashes, violence among suppliers are a common to the study area.

### **Suggestion for eco – friendly habitat of Brick Factory Industrial Area:**

- Those brick kiln whose location is not suitable need to relocate according to policy. Those factories existing within habitat relocate far distance by fulfilling the entire obligation.
- Brick kiln must not be build upon fertile agricultural land and due to minimize localized pollution the owner are advised to established Brick kiln beside river bank of Ajoy (Amulia Ghat) 5 km from study area . It may be established beside wetland like vulunia or in such a land which is unfertile wasted land far from the residential or commercial Domohani Bazaar area.
- A strict general outline should be launched in the policy for minimizing pollution from brick kiln. Modern updated technologies should be installed in the kiln so as to maintain the appropriate standard.
- Local administration or govt. should create policy to buy coal for burning brick from local Goyenka opencast coalmine project of Madanpur (2 km from Domohani bazaar) or other govt. project rather than from unauthorized dealers due to stop illegal mining or to stop local clashes for getting cheaply supply contract.
- Overloaded transportation by breaking rule and regulation should be stop by administration for well maintaining local road network system. Time to time road maintenance should necessary to avoid freckle road accident.
- Barabani p.s should be stricter to cancel day time heavy duty transport vehicle to minimize frequent traffic jam in domohani bazaar and barabani which hamper daily social life of school going children and people who reach in late to their office every day.
- Brick kilns must have site clearance followed by environment clearance under environmental conservation rule. Special monitoring cell need to create to check environmental impact of that kilns on environment.
- Environmental awareness programmed should be launched by pollution controlling department or by local administration in front of local people about how to Minimize pollution by that kilns or to find out that the

workers are getting adequate medical treatment or not.

- Government should take policy by Valuable and continuous research on advanced and developed brick making technology that can consume small amount of coal for burning at very low cost or to minimizing emission of poisonous gases from the kilns.

### **CONCLUSION:**

From the earlier discussion it is clear that village economy of the study area depends on these brick factory as the building construction process was run by this industry and there are so many poor people related to that. Village economy also supported by the huge number of workers who are staying here from long time and by the other so many raw material and finished product suppliers families , in this way local resource development also reach to their peak position. Enormous expansion of this industry in such a small village often hampers our environment and daily socio-cultural life. Though there are so many issues related to brick industry as soil erosion, water crisis, agricultural problem, health diseases, poor road system, market traffic jam , it must be mentioned that if this industry installed modern technology and obey the govt. rule than all round development of Domohani village may fulfill very soon.

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