

# Effects of Brick Industry on Social Economy And Environment: A Case Study of Burul, Falta Community Development Block, South 24 Parganas District, West Bengal

Prosenjit Kayal  
Post Graduate Student,  
Department of Geography, Prabhu Jagatbandhu College  
(Affiliated to University of Calcutta)  
Andul, Mouri, Haora

**Abstract:** Brick industry is one of the informal and unorganized industries of India. This industry has been developing with the expansion of urbanization in different States of the country. It is a labour intensive industry based on random exploitation of women and children. Brick production depends almost entirely on migrant workers. It generates employment of seasonal nature. Most of the workers of brick industries belong to the deprived cross-section of society. This study is an attempt to throw spotlight on the effect of brick industry on local environment of Falta C.D block of South 24 Parganas District of West Bengal. The following variables have been considered for study including occupational structure, gender, nature of work, education, income, benefits and problems which are indicators of socio economic status of women in these manufacturing units. The brick industry has been identified by the environmentalists as one of the hazardous industries which tend to adversely affect the health and physiological condition of women and children. The present study is based on both primary and secondary data. Primary data has been collected through pre-designed questionnaires and secondary data from various Government and Non-Government sources. From the result it can be seen that the worker are still now living under below poverty line and the surrounding environment is largely effected by the unscientific activities of the brick making industries in the study area.

**Key words:** migrant workers, absolute poverty, urbanization, child labour.

## I. INTRODUCTION

The Indian brick industry is an age of old industrial activity which belongs to unorganized sector and it is the second largest employment generator among migrant poor women and marginal section of population. Brick is very important building materials for a developing country, especially like India to improve infrastructure. Women have become an integral part of manpower resources in this unorganized sector, but unfortunately they live under condition of absolute and nutritional poverty. At work place they are exploited, deprived and do not enjoy equal status like their male counterparts. The industry has an annual turnover of more than 10,000 crores and it is one of the largest employments generating industry. In the developed country some mechanization was introduced but in India the condition has not improved and human drudgery still prevails. The present study has focuses on the effect of brick industry on local environment.

## II. Objectives

The main objectives of this paper are mention below:

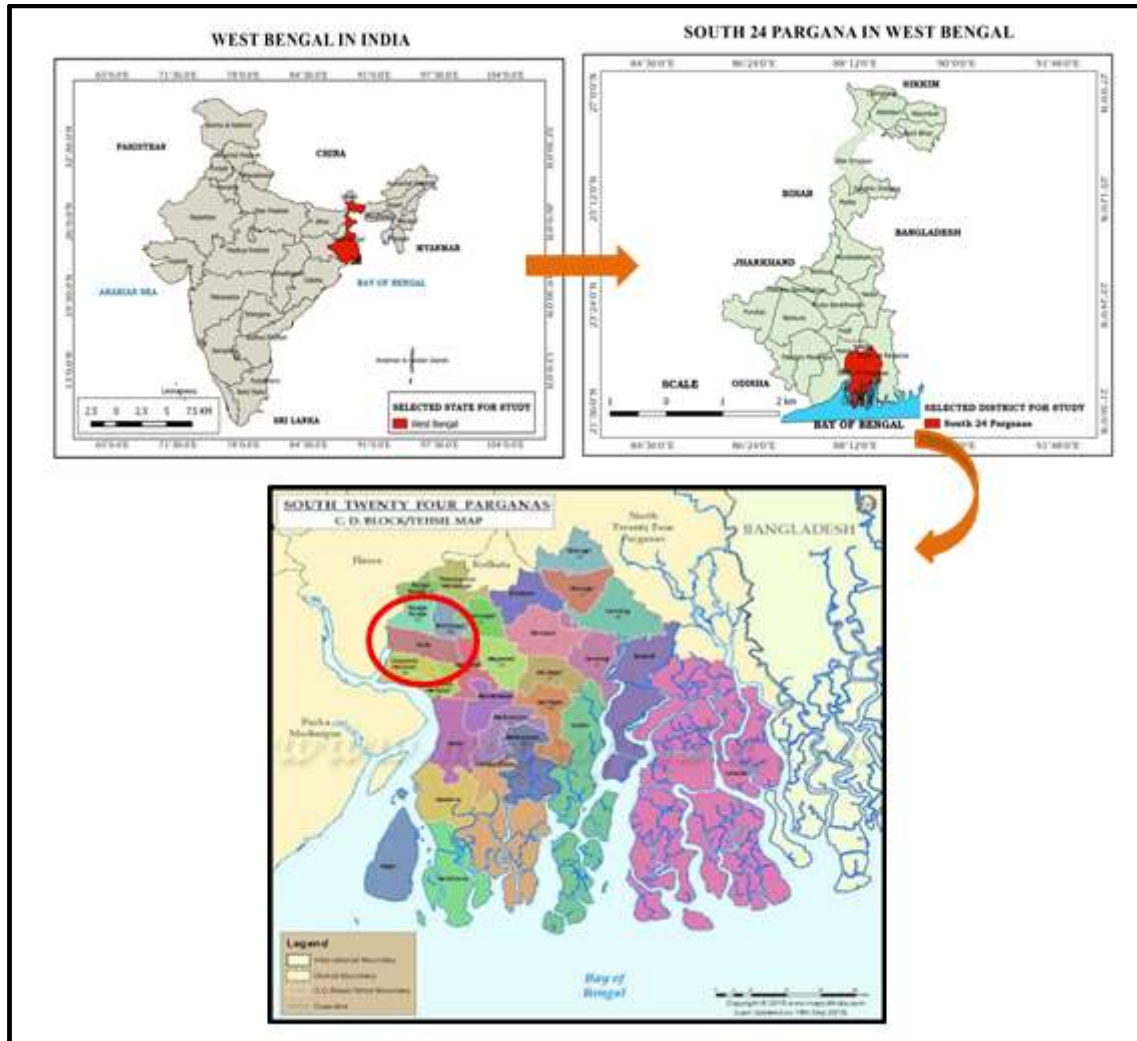
- To overview the traditional brick system.
- To show the growth of brick industry in the study area
- To analyse the present socio-economic condition of the workers in the brick making industry of the study area.
- To identify the existing socio-economic and environmental problem of the concern area.
- To suggest some recommendation to protect the environment of the river bank

## III. Study Area

South 24 parganas is one of the 23 districts in the eastern state of West Bengal. The district head quarter is located in Alipore. It is the sixth most populous district in India according to the latest census. On one side of the district is located the urban fringe of Kolkata and on the other the remote riverine village of Sundarban. The district comprises of five sub-divisions including Alipore Sadar, Baruipur, Diamond harbor, Canning and Kakdwip. This research work encompasses one C.D Block of the district that is Falta. The study area is bounded by Maheshtala Municipality in the North, Magrahat I and II in the South and the western part of the study area is completely bounded by the Hugli River. Here the brick field is selected as a study area because it offers an excellent example of human impact on environment or natural landscape. This particular block is selected as study area since it provides a good example of a river bank linear settlement which was developed depending on agricultural activity and brick industry.

**IV. Methodology:** In the Preliminary Stage topic has been selected and location map has been prepared based on base map from National Atlas and Thematic Mapping Organization (NATMO). A pre-designed structure questionnaire has prepared. Collection of various references and information regarding brick fields of the study area is also been done in this phase. In the Intermediate Stage perception Study has been done based on structural questionnaire among the local respondents of Falta block, Block Development Office. The work has been done based on systematic random sampling. The study is based on both primary and secondary data. The primary data were collected through informal conversation with employee working in the green brick technology in a time span of seven months from December, 2017 to June, 2018. The cost of setting a green brick kiln and justification of that cost had been the issue of conversation. The secondary data were collected from newspapers, books and journals. Data have been processed and graphically represented through various cartograms.

#### LOCATION MAP OF THE STUDY AREA



**Map No. 1** Source: Prepared by the Author based on National Atlas and Thematic Mapping Organization, Government of India

#### V. Review of Existing Literature

- **Nair (1993)** explained the relationship between different law and labour in unorganized sector. In unorganized sector most of the workers are migrant female and they are sustaining their life under extreme poverty. According to him although there are many laws for unorganized sector but these laws are not implemented completely.
- **Chopra (1998)** studied condition of workers in Muzaffarnagar brick kiln industry. In his work he explains that most of the workers in the Muzaffarnagar brick kiln industry are belongs from backward classes especially from the Scheduled caste and Muslim weavers. They are mainly dependent on landlords of the area who mainly belongs to Gujjar, Jats, Pathan and Baniya caste.
- **Nanda, A. & Kumar, P. (2016)** in their work “Women worker in informal economy: a study of brick kiln in Haryana” emphasized on the problem of brick kiln workers. They explain that women play an important role in economic activity of family but this fact is not acknowledge by their family member. Main problem of the backwardness of women worker is low level of education. They suggests that with the help of female education this condition can be controlled.
- **Jerin, M., Mondal, S., Sarkar, B., Rimi, R. & Aktar, S. (2016)** In their research paper “Impact of Brick Fields on Environment and Social Economy at Bagtipara, Natore, Bangladesh” they reported that crop loss, decreased soil fertility and subsequent reduction in crop production are the immediate impact of brick industry. According to them despite

creating work opportunities for local people, brick field of the study area adversely affected the environment and social economy.

## VI. Statement of the Problem

For firing of green bricks coal is used as main source of fuel which leads to particulate matters and other gaseous pollutant emission. The primary raw material use to bricks is the soil which is often taken from the prime agricultural land causing land degradation as well as economic loss due to diversion of agricultural land. Use of traditional technologies in firing the bricks results in significant local air pollution. Emission of huge quantity of toxic element from the stack of brick kiln is causing serious environmental health hazards. Across most of the developing country like India, it is seen that brick kilns mostly use low cost waste materials as a primary source of fuel. The inappropriate design of kilns, use of low cost fuel, lack of complete combustion and pollution control technology at source area are causing release of contaminants and high concentration of pollutant from brick kiln in the form of flue gases. The flue gases which are emitted from the stacks of brick kilns mainly comprise of ash, SO<sub>2</sub>, CO<sub>2</sub>, NO<sub>x</sub>, particulate matter etc. are the important source of carbon-di-oxide emission in the country. Various water quality parameters including TDS, TSS, pH, hardness etc. may affects due to the disposal of waste of the brick industry into the natural water bodies.

## VII. Result and Discussion

### A) Occupational Structure of the study area:

The diagram (Fig. 1) shows occupational structure of the study area. According to the primary survey among the total economic activities around 14 percent is primarily depends on agriculture, 13 percent depends on fishing, 25 percent entirely depends on brick making industry and rest of the people in this study area are depends on service, business and other activities. As the most of the brick field remain closed during rainy season due to excessive rainfall, in this time people use to engage with fishing and agriculture like activities.

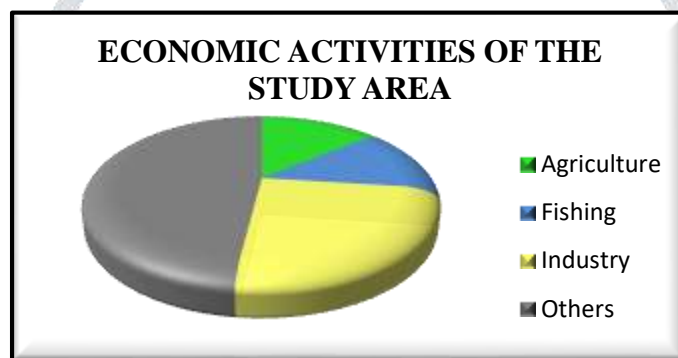


Fig. 1 Source: Primary Survey, 2018

### B) Growth of the Brick Kilns in the Study Area:

Brick making is a traditional industry of West Bengal. Brick is as old as civilization itself. The silted topography of West Bengal is uniquely suitable for making bricks. In the past, the riverine delta region of south Bengal provided quality-soil as a cheap source of raw material and the in-land canal functioned as the mode of low cost and easily accessible local transport. The hinterland of Kolkata, the district of Haora, Hugli, North and South 24 Parganas thus became suitable location for brick field as the city grew in size. With more and more construction activities the demand for bricks also increased. Consequently, these brick fields in South 24 Parganas District sprouted within short period of time and became immensely popular.

### C) Number of Worker in the Brick Industry

According to the primary survey a huge number of people work in brick field. Majority of the brick field around 62 percent have 200-400 labour and around 38 percent of the brick making industry having more than 400 labour. So depending on the above said primary data it has been said that almost all the brick fields have well number of labour and production also.

### D) Gender Wise Distribution of the Workers:

The gender wise distribution of workers can be easily understood from figure number 2. From the diagram, it can be demonstrated that the number of male workers is more than the female counterparts around 27 percent of the male workers and 23 percent of the female workers are 15 to 30 years of age. This age group has the maximum share of the workers. In the age group of 0 to 15 years most of the workers are a woman which reflects that girl children are forcibly send by their parents and families to work in these hazardous sites at an early age.

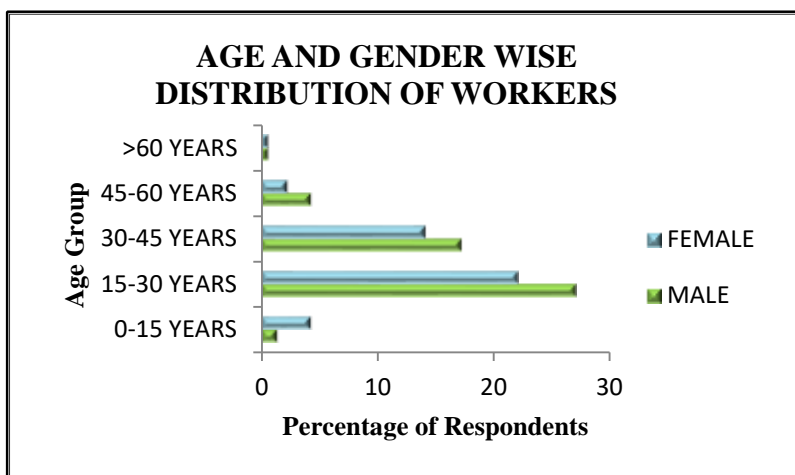


Fig. 2 Source: Primary Survey, 2018

**E) Literacy Status of the Women Workers:** In order to social development female literacy plays prime important role. It can be observed from the diagram (Fig. 3) that maximum male workers are educated up to primary level and maximum female workers are not even educated up to the primary level. Only 0.6 percent of the female workers are educated up to primary level. 10 percentage of male and around 12 percentage of the female workers have been found to be illiterate. Thus the level of education among workers is very low. It is worth mentioning here that the male workers have been found to be more literate than the female counterparts.

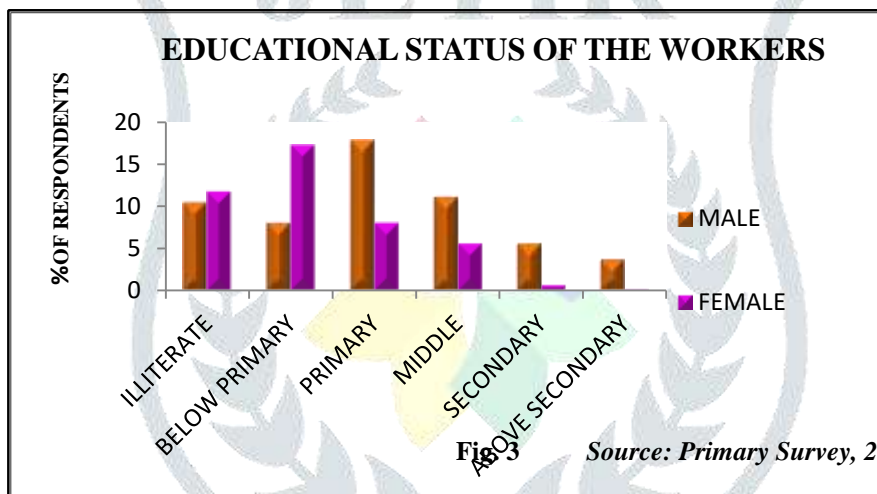


Fig. 3 Source: Primary Survey, 2018

**F) Migrants Workers and their profile:**

Most of the workers of the Brick industries are migrant labourers. They came from different parts of the country. It is shocking to note here that the migrant labourers have outnumbered the local labourers. Around 43 percent of the workers have been locally employed while the rest 57 percent of the workers are migrants who have come here from various districts, states and even from countries like Bangladesh.

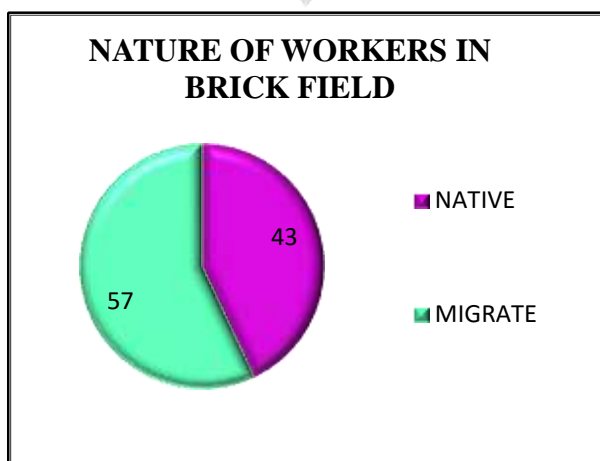


Fig. 4 Source: Primary Survey, 2018



Depending on the source region of migration the migrant can be categorized into four sub-divisions. Firstly an International migrant labourer, who has mainly come from Bangladesh, second type of Inter-state migrant workers, basically come from Bihar, Jharkhand and Odisha. The next type is the Intra-state migrant who are coming from Paschim Medinipur, Purba Medinipur and Haora Districts. Majority of the migrants have come from Bihar, Jharkhand and Odisha. Substantial proportions have come here from Bangladesh. These people have entered the national boundary of India as illegal refugees in search for earning and living.

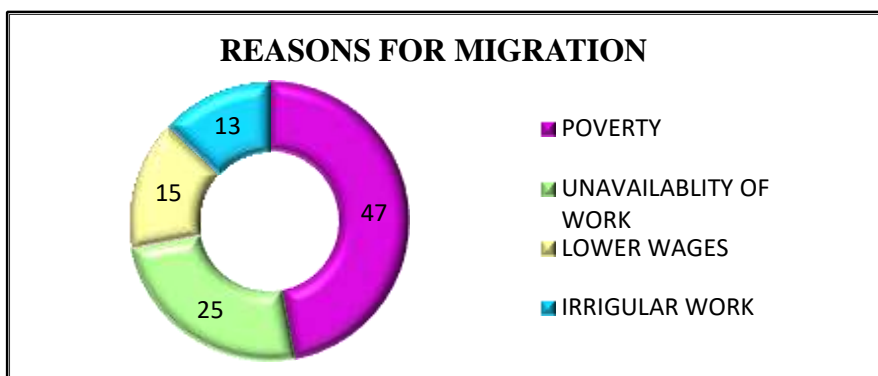


Fig. 5 Source: Primary Survey, 2018

There are several reasons which have compelled the labourers to migrate from other source regions. Major problems include Poverty, non-availability of work, lower wages and disguise management it can be seen here that around 47 percent of the workers have migrated to these brick fields due to poverty, 25 percent of the workers migrated because of unemployment. Lower wages is another problem which was faced by 15 percent of the workers. Rests of the workers have migrated here due to the irregular work period.

**G) Monthly Income of the Brick Field Workers:**

There are huge differences in the income level per months. In spite of doing same work, spending same time period, giving same labour women workers receive much lower wage than men. This reflects clear picture of exploitation of the women workers in the brick kilns. Only 1 percent of women workers earn highest payment of Rs. 7500 per month and 3 percent of the male workers enjoy this earning. 22 percent male and 16 percent female workers earn Rs3000-4500/ month. 7 percent, 17 percent and 9 percent male workers and 10 percent, 9 percent and 3 percent of the female workers earn Rs1500-3000, Rs4500-6000 and Rs6000-7500 per month respectively.

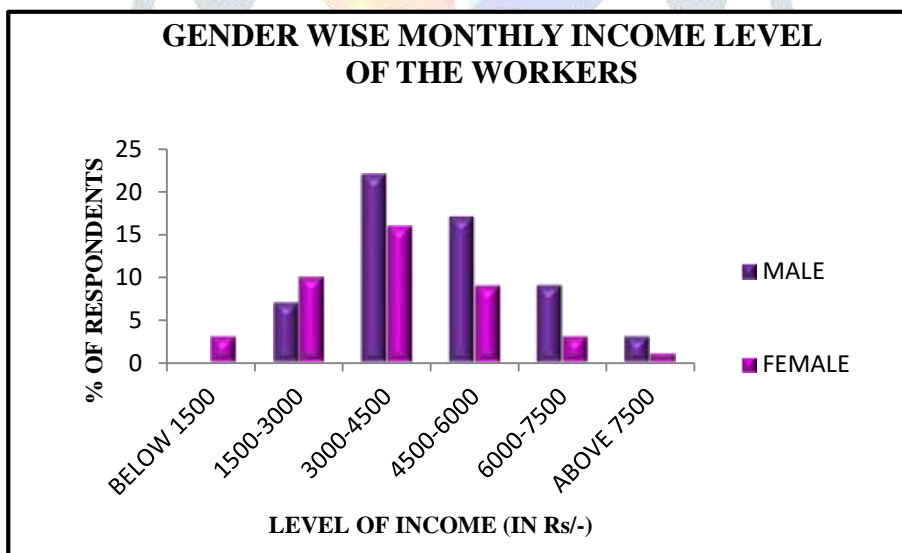


Fig. 6 Source: Primary Survey, 2018

**H) Raw material**

Soil and sand are the basic raw material of any brick making industry. The primary survey is reveals that around 48 percent of the brick making industry collect soil from river bank area which enhance the rate of river bank erosion. Rest of the 52 percent industry gets it from the fertile agricultural field. Thus the agricultural field loss their fertility and become degradable. Most of the raw materials are collected from the nearby agricultural field and cultivated agricultural land. Even sometimes they are not taking the permission from villagers.

**I) Environmental Concern**

This diagram (Fig. 7) reflects the fact that the most of the owner of brick field are not much more concern about the surrounding environment. Because of this they throughout the ash in reservoir, pond, canal and river and the water became badly affected. According to the primary survey, 12 percent brick making industry of the study area throughout ash into the pond, 8 percent in nearby canal and most of them i.e. 80 percent into the river. The primary survey shows that the village is polluted by the brick

field as most of the brick industry use fossils fuel especially coal and it is one of the main source of air pollution. Most of the respondents (88 percent) opined that brick field is the responsible for pollution, though 2 percent of villagers thought that there is no pollution in village. But actually the environmental pollution is held by the ash, smoke and dust which are spreading from the brick industry.

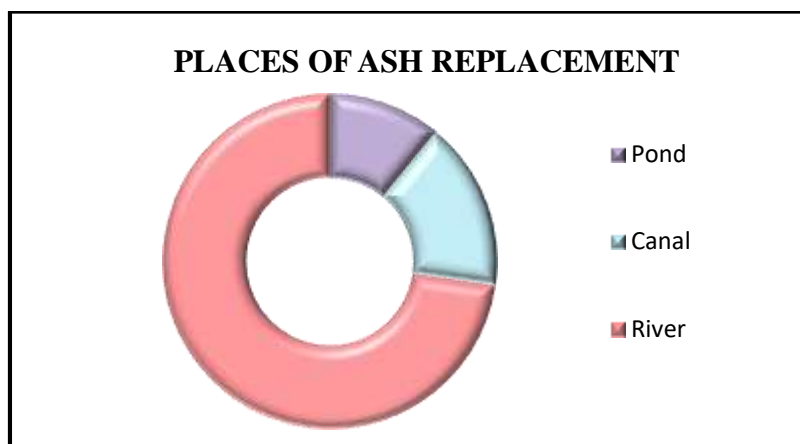


Fig. 7 Source: Primary Survey, 2018

### VIII. Findings of the Study:

On the basis of the long-term study including field survey there are some major findings. Such as a large number of married women are engaged in brick kiln activities. An overwhelming majority of the worker and their children are illiterate. Migrant workers are large in number. Annual and monthly family incomes of the women worker are not adequate to maintain their livelihood. When the brick kiln remains closed, they engaged themselves especially in agricultural activities. Women workers work in the kilns due to extreme poverty. Most of the workers are involved in soil molding and bricks making. Moreover all the brick fields in this study area are create severe impact on the surrounding environment.

### IX. Problem Identified

The major problems of the study area are as follows:

- ✓ All the brick fields are used fossils fuel i.e. coal which creates air pollution.
- ✓ Human health effect caused by brick field.
- ✓ The level of education of workers is very low especially among female worker.
- ✓ There are huge differences in the income level per month. In spite of doing same work, spending same time period, giving same labour women workers receive much lower wage than men.
- ✓ Water pollution due to chemical leakage.
- ✓ Most of the brick field collects soil from the nearby companies open field and river bank. Thus the agricultural field which held fertile soil is getting degraded.

### X. Possible Remedies

After taking the following steps the present condition can be improve:

- ✓ Proper planning should be implemented in overcoming the problem level.
- ✓ Proper regulation should be suggested to stop child labour.
- ✓ The infrastructural facility of the brick kiln must be improved.
- ✓ Equal wage system among male and female workers should have to be implemented.
- ✓ The entire brick field should have to follow some scientific steps in case of collecting sand and soil from the river bank by which land degradation as well as river bank erosion can be checked.
- ✓ Brick field would have to collect soil from the fallow or waste land instead of fertile agricultural land.
- ✓ Governmental help is very necessary to reduce the impact that is produced by the brick field.

### XI. Conclusion

Brick making is an energy intensive process. From the study it is found that majority of the brick fields of the study area were located near agricultural lands and residential area those were responsible for loss of agricultural production, fish cultivation and local community's health problem in great extent. Besides brick fields were considered as the principle reason of top soil degradation and environmental pollution of the area. In this condition the government should come forward to establish a platform in which stake holder can developed their industries in a sustainable manner. Hence, there is an urgent need for social concern to frame measures to improve the living and socio economic and good working condition of brick kiln workers for inclusive growth.

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