



IMPORTANCE of RAW MATERIAL IN LOCALIZATION OF MATERIAL ORIENTED INDUSTRY: A CASE STUDY of BRICK INDUSTRY OF UMBRAJ AND SURROUNDING VILLAGES

Dr. Ananadrao S. Patil

(M.A., M. Phil. Ph.D., SET), Associate Professor, Chhatrapati Shivaji College, Satara

ABSTRACT

The Industrial Geography is one of the most important branches of the Geography. It deals with the studies related to manufacturing sectors and cottage industries and small scale industries too. Brick industry is here considered as small scale industry. Indian brick industry is the second largest brick producer in the world after China. The Western Maharashtra is agriculturally progressive region. This sugarcane growing region is prosperous and always dominated in different kind of economic activities. The agriculturists of this region are now shifted their investments in the brick manufacturing. The Umbraj is comparatively rich and prosperous town of the Satara district of Maharashtra. Brick industries around this town are dominating in the rural economy. The workers plays vital role in the bringing the brick industries as important source of employment and investors seems that it is important subsidiary activity for agriculture sector. It is mainly because availability of different kinds of raw material and ample water. Localization of any industry is mainly depending upon the availability of raw material, market, and labour. Here attempt is made to reveal importance of raw material in development of brick industry and ultimately development of region. (Key Words; Manufacturing sector, localization of industry)

KEYWORDS

INTRODUCTION:-

The Industrial Geography is one of the most important branches of the Geography. It deals with the studies related to manufacturing sectors and cottage industries and small scale industries too. Brick industry is here considered as small scale industry. Indian brick industry is the second largest brick producer in the world after China. The industry has an annual turnover of more than 10,000 corers and it is one of the largest employment generating industries.. Bricks are one of the important building materials. Bricks are produced in traditional, unorganized small scale industries. The brick production depends on various factors such as availability of water, market and other raw materials required in brick making process. Availability of good quality of soil is crucial for brick making.

The Western Maharashtra is agriculturally progressive region. This sugarcane growing region is prosperous and always dominated in different kind of economic activities. The Real state industries and construction activities are growing faster in the Western Industrial Belt of India; it further leads to boost the brick industries as subsidiary activity for agriculture sector in this region. The agriculturists of this region are now shifted their investments in the brick manufacturing. Initially this industry is confined to certain villages now it spread all over the Western region. The nature of this industry is also changed remarkably as it is important industry rise for providing large scale employment to the rural people. It is becoming a major source of livelihood of the hundreds of the poor people. It is important industry for both the investors and the workers, because it required more capital and more labour force.

The socio-economic development of the Umbraj and surrounding area is get influenced by the brick industries. The Umbraj is comparatively rich and prosperous town of the Satara district of Maharashtra. Brick industries around this town are dominating in the rural economy. The workers plays vital role in the bringing the brick industries as important source of employment and investors seems that it is important subsidiary activity for agriculture sector. It is mainly because availability of different kinds of raw material and ample water.

Adequate capital with the proprietors and credits by Co-operative, and Nationalized banks stimulates the industries in this region. The brick industries are still in the traditional form and

modern equipment's not used. They can afford to invest on modern equipment's but it not happened. It resulted in the employment generation for huge number of people. These industries have not possessed skilled managerial expertise, consultation, expert teams, proprietors and skilled workers and clerk handles all the industries.

CHOICE OF STUDY REGION:

Satara is one of the progressive districts of Western Maharashtra. Agriculturally prosperous region supports other economic activities. Umbraj is important centre of brick industry. The brick industries are concentrating in and around the Umbraj. The other important aspect is that the people involved in this business are economically sound and tried to grab the opportunities of establish subsidiary occupation. Natural condition was favorable to the brick industry. The largely scale availability of water resource soil, raw material; workers etc. are supporting the activity. Migrated people as labour force required is easily available because the original sites from the Sangli district are closed. To study all these facts we have chosen the same study area, which will be more applicable for the study of other places.

STUDY REGION:

Umbraj is an important village in Karad Taluka of Satara district. This village is nearer to National Highway-4. This village is mostly important or favoring for brick manufacturing because many brick kilns setups are united.

Umbraj Village is Located between 17° 24' 8" North Latitude and 74° 6' 1" East Longitude. Umbraj is situated in Karad tahsil in Satara district of Maharashtra. It is Located North-West 17km away from Karad. Umbraj is located 38km distance away from Satara. The Average height of the study area is 592 meter above mean sea level. Karad is administrative center of the Tahsil.

Umbraj village is situated in comparatively plain area with 600 to 700 m. height above mean sea level. The Vadoli Bhikeshwar village is located at the bottom of Kharjul Aai hills, north-east direction 4km away from Umbraj. Hills are offshoot of Mahadev hill range. Umbraj and surrounding village are three river comprises basin; Krishna in the south, Tarali in the north and Mand in the west. Three types of soils are spread in the

region, mainly alluvial, black and laterite, useful for brick manufacturing. The climate of the Umbraj village is monsoon type. The favourable period of the brick manufacturing is mostly the winter and summer season. The canal and lift irrigation facilities, wells and bore wells all are good developed in the region and hence provides ample water to the brick industries.

POPULATION:

According to 2011 the total population of the study region is 14431 and in this female population 6966 and male population 7965. Average literacy rate of Study region in 2011 is 83.20% gender wise male and female literacy rates are 91.02 and 77.29.

TRANSPORTATION AND COMMUNICATION:

The study region is well connected with National Highway, State Highways and District Roads.

The National Highway in Satara district started at Northern border of Neera River and it runs through the Shiraval, Khandala, Satara, Karad tahsile of district. The total length of NH-4 in Satara district is 131km. State highways connects region with central Konkan as well as northern Konkan and north Karnataka. South Central Railway passes through this region and Karad , Masur , Satara station are close in vicinity linked with it.

Objectives:

The Study is deals with the following objectives;

To study the importance of the raw material in the localization of the brick in industry in the study region.

To study the physical factors responsible for the development of brick industry in the study region.

T assesses the problems of brick industry and suggests some solutions.

Data collection and Methodology:

The entire study is empirical study and depends on the primary data collected from the fields. A set of questionnaire is used to collect the data and observation made during the field work on which analysis is based. Data is compiled and tabulated to analysis purpose. Certain graphs and diagrams are use in support of the analysis. Inferences drawn are totally based on logical and experimental analysis.

IMPORTANCE OF RAW MATERIAL:

Starting any business or manufacturing unit requires input or raw material. Raw material is crucial part for any business. Raw material is necessary for producing any production. Likewise, for brick manufacturing soil, bugasse, coal, molasses, are the essential raw materials. These raw materials are distributed unevenly. But access to such raw material through transportation and capital investment is possible.

SOIL:

Soil is one of the basic and most important elements in brick manufacturing. Hence manufacturing setup is established at places where soil can be easily available e.g. river bank farms etc. Red and black soil is used for bricks making.

REQUIREMENT OF SOIL:

Brick Industry is mainly depend upon raw material and labour. So, Soil is important raw material; quality of soil is good then the bricks are also good. The transport of soil from different areas is carried out by trailers, dumpers, truck. In general 25 trailers soil is required for manufacturing 50,000 of bricks. It means requirement of soil in brick industry is very much high and essential.

Table No. 1

UMBRAJ AND SURROUNDING VILLAGES

REQUIREMENT OF SOIL FOR BRICK PRODUCTION

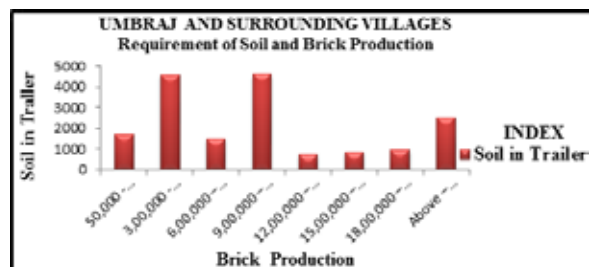
Sr. No.	Brick Production	Soil in Trailer's	No. of Kilns
1	50,000 - 3,00,000	1725	15
2	3,00,000 - 6,00,000	4575	18
3	6,00,000 - 9,00,000	1500	4
4	9,00,000 - 12,00,000	4600	8
5	12,00,000 - 15,00,000	750	1
6	15,00,000 - 18,00,000	850	1
7	18,00,000 - 21,00,000	950	1
8	Above - 21,00,000	2500	2
	Total	17450	50

Source: Compiled by Author

Above Table No. I give an idea about the range of bricks manufacturing and number of kilns and trailer of soil required for manufacturing bricks. Total 50 kilns are involved in brick manufacturing and about 17450 trailers of soil are required annually for brick manufacturing in these brick kilns. Category wise variation is noticeable. The maximum soil is utilized by the small to moderate brick producing kiln units. Out of which 15 kilns belongs to first category producing 50,000 to 3,00,000 bricks annually, 18 kilns belong to second category producing 3,00,000 to 6,00,000 bricks annually. These two categories have lion share in using soil. 4 kilns ranging from 6, 00,000 to 9, 00, 000 brick manufacturing category also use 1500 trailers of soil annually. Out of which 8 kilns belongs to forth category producing 9, 00,000 to 12, 00,000 brick's annually, using 4600 trailers of soil annually. This category is very much significant sharing of soil use is concern. The kilns including in this category shows that consistence performance in manufacturing of bricks. The large size five kilns are belongs to next categories and they are also sharing remarkable percentage of use of soil in brick manufacturing. In all these kilns are few in number but share of soil used are about 5050 trailers to manufacturing major share of bricks of the region.

From this discussion reflects that the requirement of soil is significantly more, it is more than 40 to 50 thousand tons of soil is required every year in this industry. The kiln owners are making deposition of soils at the manufacturing site. It causes adverse effects on environment as well as on the agriculture in the region. Thin quality soil layer is vanishing rapidly and more cultivable lands are becoming uncultivable. Degradation of soil and increase in erosion of soil are the main problems arising in this region.

Fig.NO.-I



AVAILABILITY OF SOIL

Soil is main important raw material in brick kilns. Umbraj vil-lage is situated in the Krishna river basin. Krishna river basin is main source of soil. Umbraj and surrounding vil-lage have availability of soil for brick industry.

Table No. II
UMBRAJ AND SURROUNDING VILLAGES
LOCATIONS OF AVAILABILITY OF SOIL(Percantage)

Sr. No.	Location	Availability of Soil	Percentage
1	Taswade	7	14
2	Kavathe	10	20
3	Shirawade	9	18
4	Korti	5	10
5	Konegaon	2	4
6	River Basin	12	24
7	Chopdi	1	2
8	Karad	2	4
9	Self-Farm	2	4
		50	100

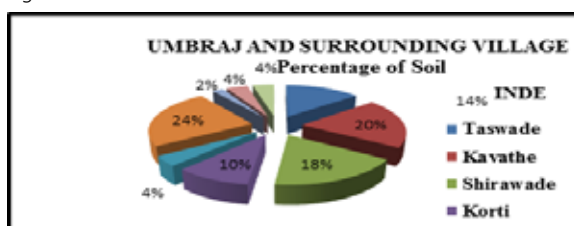
Source: Author

Table No. II reveals that the brick industries owner makes available maximum soil from nearby villages it reveals the situation of availability of soil for kilns. The maximum brick owners bring soil from three prime locations Kavathe, Shiravade and Taswade. The other important source of the soil is river basin itself. Both, the river basins Krishna and Tarali have very fine good quality soil deposition. The frequent flooding is responsible for such kind of soil deposition along the river banks. Maximum 24 per cent kilns import soil from the river basins as these sites are located along the banks of river basin.

The second largest region provides soil is Kavathe, near about 20 per cent bricks industry owners brought the soil from this location. Shirawade is other village provides soil to 18 per cent bricks industries of this region. Taswade village is another source provides soil to 14 per cent kilns. It is mainly because these Kavathe, Taswade and Shiravade villages have less irrigated lands. The MIDC and commercial use of land is increases. Instead of these sites Korti, Konegaon, Chopdi, Karad, sites are available for soil. Few farmers are using soil from their own fields. It is mainly because their sites are either barren land or in the "Mali" area of the river basin.

Soil excavation is one kind of over exploitation of the natural resources. It affects not only the soil erosion but also affects the river channel. In some parts of the river basin it is found that meandering of river is distracted and hence river channel shifted. It may responsible for encroachment of river course on cultivable land.

Fig.NO.-II



COAL:

Coal is an important mineral. This is used as raw material for brick manufacturing. Lignite type of coal is used for brick baking. The raw brick are stacked and after each 5 layers lignite powder is spread over bricks and then it is ignited for backing process. Coal is important fuel used by maximum kiln owners.

Table No. III
UMBRAJ AND SURROUNDING VILLAGES

Requirement of Coal of Brick Production

Sr. No.	Brick Production	Coal in Tons	No. of Kiln
1	50,000 - 3,00,000	542.75	23
2	3,00,000 - 6,00,000	1278.5	15

3	6,00,000 – 9,00,000	675	6
4	9,00,000 – 12,00,000	337.5	2
5	12,00,000 – 15,00,000	200	1
6	15,00,000 – 18,00,000	270	1
7	18,00,000 – 21,00,000	312.5	1
8	Above – 21,00,000	450	1
	Total	4066.25	50

Source: Author

REQUIREMENT OF COAL:

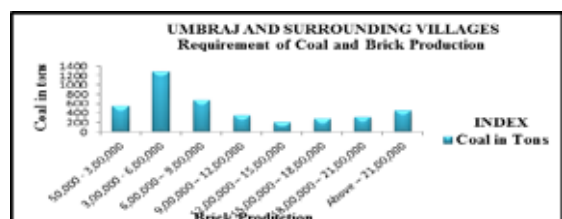
Coal is one of the basic and most important elements in brick manufacturing. The demand of coal in bricks industry is full fill from Chandrapur and Gadchiroli. Bricks kilns mostly use lignite type coal for brick roasting process. Rates of coal depend on quality and quantity.

Above table gives the data about the range of use of coal in brick manufacturing and number of kilns. There are eight categories of kilns on the basis of use of coal. In the first categories 23 kilns are belonging which manufacturing 50,000 to 3,00,000 bricks per year, required 542.75 tons of coal. There are 15 kilns in the second category, that manufacturing 3,00,000 to 6,00,000 bricks per year, required 1278.5 tons of coal. There are six kilns, manufacturing 6,00,000 to 9,00,000 bricks production per year, required 675 tons of coal.

Table No. III reveals the information that the use of coal in brick industries in Umbraj region. Coal required in these industries annually required coal is 4066.25 tons. The first group involved the 44 kilns, these kilns consume maximum coal it means 61.37per cent of the total coal is required in these brick industries. The second grope involved 4 kilns and they contribute 25per cent of total coal consumption. The third group includes 2 Kilns and they are contributing 13.25per cent of the total coal consumption. In recent days few big kiln owners are started using of scarp tyers and hence their share seems less as compare to others. Excessive use of coal is lead to exploitation of resources in one hand and air pollution, water pollution in other hand. Gases produced by combustion of the coal include emission of Nitrogen oxides, sulfur dioxide, and carbon dioxide etc. It also emits small particulates of carcinogenic and mutagenic substances. Unhygienic conditions are increasing illness in the workers and their children.

During the rainy season raw material mixed in the nearby water resources and contaminated the water. The potable drinking water scarcity compulsorily binds to use contaminated water. Water borne diseases are increasing in the surrounding settlements.

Fig.No.-III



4) BAGASSE

Bagasse is obtained from crushed sugarcane it is one of the bye products of sugar making process. This is used for reinforcement of brick. Bagasse is mixed while mud material is prepared. This particular raw material is used because bricks dried quickly and help in burning process.

Table No. IV

UMBRAJ AND SURROUNDING VILLAGES

Requirement of Bagasse of Brick Production

Sr. No.	Brick Production	Bagasse in (tons)	Total No of Bricks
1	50,000 - 3,00,000	510.6607	22
2	3,00,000 - 6,00,000	775.5	14
3	6,00,000 – 9,00,000	408	4
4	9,00,000 – 12,00,000	248	2
5	12,00,000 – 15,00,000	460	3
6	15,00,000 – 18,00,000	580	2
7	18,00,000 – 21,00,000	240	1
8	Above – 21,00,000	500	2
	Total	3722.161	50

Source: Author

The Table No. IV shows the requirement of Bagasse in brick production process in this region. It is divided into eight categories. There is a variation in the use of baggase by different. It means that more than 40 kilns using Bagasse in more percentage they are from lower to moderate production of bricks category. The share of there is more mainly because soil is of low quality. It helps to improve brick colour and burning becomes rather easier.

REQUIREMENT OF BAGASSE:

The Baggase is an important raw material in the brick industry. Baggase is available in the study region from different source mainly from sugar factories of Karad and Satara Tahsil. In general about 20 to 25 tons Baggase is required for 50000 bricks production. The total production of bricks in this region is 336 lacks and hence for processing and mixing soil 3722.161 tons of Baggase is required.

There are 22 bricks kilns who are manufacturing 50,000 to 3, 00,000 bricks per year required 510.6607tons of Baggase. There are 14 kilns required 775.5tons of Baggase in range of 3,00,000 to 6,00,000. The third category in that 4 kilns is manufacturing 6,00,000 to 9,00,000 brick. The larger is the production unit larger is the quantity of use of Baggase. They used proportionate Baggase along with the other raw material used while mixing the soil and making the mud. Excess use of Baggase is also responsible for the environmental degradation. Many times excess use of Baggase resulted in burning of bricks and joints of bricks take place. These bricks are kept aside destruction of raw material takes place.

5) REQUIREMENT OF KHASAVA:-

The Khasava is important raw material in the brick industry. Khasava is available in the study region from different source mainly from Satara MIDC. The Khasava is use to better roasting of bricks. In general requirement of the Khasava is about 2 tons for 50000 bricks production. The total production of bricks in this region is 336 lakh and hence for processing and better roasting 1514.45 tons of Khasava is used in 50 kilns. The following Table No. III-V shows the category of kilns; uses Khasava in different proportion. There are four categories of kilns on the basis of use of Khasava; there are 37 bricks kilns who are manufacturing 50000-300000 brick per year required 590.7 tons of Khasava.

Table No. V
UMBRAJ AND SURROUNDING VILLAGES

Requirement of Khasava of Brick Production

Sr. No.	Brick Production	Khasava in tons	Total No of Kilns
1	50,000 - 3,00,000	590.7	37
2	3,00,000 - 6,00,000	300	7
3	6,00,000 – 9,00,000	23.75	3
4	Above 9,00,000	600	3
	Total	1514.45	50

Source: Author

In kilns who are manufacturing 3,00,000 to 6,0,0000 brick per year. There are 7 kilns require 300 tons of Khasava. The third category of kilns are manufacturing 6,00000-900000 brick per year required 23.75tons of Khasava. Khasava provides from the Taswade and Satara MIDC.

3.2WATER USAGES

Water plays an important role in domestic, industrial and farming purpose. Similarly it is also important for brick manufacturing process. The more number of manufacturing units are located at water reservoirs such as on riverbanks. In this manufacturing setup it seems that as water is important for bricks in manufacturing likewise it is also important for the employees. Usually 100 to 1000 liter water is required for employees and for brick manufacturing process 900 to 12000 liters.

1) BRICK MANUFACTURING USE OF WATER:

Water is a prime requirement in the brick industry. It is required for manufacturing brick's as well as residential purpose. It is found that requirement of water in brick manufacturing is varied and it depends up on the production and labour involved in manufacturing. Taking into consideration, we have formed four categories as shown in Table No. VI.

Table No. VI
UMBRAJ AND SURROUNDING VILLAGES

BRICK MANUFACTURING: USE OF WATER (in liters)

Sr. No.	Class	No. of Kilns
1	Below 1000	11
2	1000-5000	21
3	5000-10000	17
4	Above 10000	01
	Total	50

Source: Author

WATER REQUIREMENT IN BRICK MANUFACTURING:-

The above table shows the requirement of water for brick manufacturing in Umbraj and surrounding villages. Water is used for mixing of raw materials mainly soil, Khasava, Bagase, Molasses, in peat. One peat (gara) requires 1000-2000 liter of water. There are 11 brick kilns included in first category. In this category, water requirement for manufacturing bricks is below 1000liters. It means that every day in every kiln at least 1000liter water is utilized in different brick manufacturing process. There are 21 kilns included in Second category. In this category water requirement for manufacturing bricks is 1000-5000liters. It means that every day in every kiln at least 1000-5000 liter water is utilized in brick manufacturing process.

There are 17 kilns included in third category. In this category each kiln requires at least 5000-10000 liters water in brick manufacturing process. There is a single kiln of fourth category, requires above 10000 liters of water per day for manufacturing bricks.

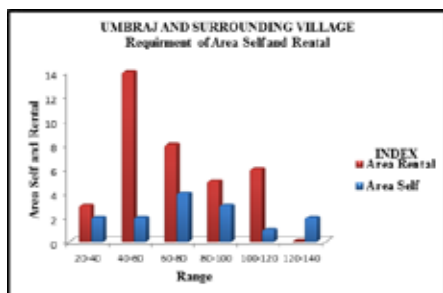
Water is also required for the residential use of families working at the sites. The total use of water is near about one lakh liter in the brick kiln sites for residential purpose for 148 families. The use of water by these families ranges from 300 liters to 1200 liters per family, it depends upon the number of families working at that particular site and availability of water.

To development of this industry provision of water is the main aspect along with the soil. This region has good resources and hence they are supporting the establishment of such units and its process. Above information reveals that use of water in brick manufacturing process is significantly more. Fifteen to twenty lakh liters of water is required in this industry. It means that the use of water for agriculture may suffer.

3.3 LAND UTILIZATION

For brick manufacturing minimum 20 are area is required and 120 are area is more than sufficient with such available land manufacturing set up can be established. For the workers residential purpose some part of land is reserved and remaining is used for bricks.

Table No. VII



UMBRAJ AND SURROUNDING VILLAGES

REQUIREMENT OF AREA (SELF AND RENTAL)

Sr. No.	Range	Area	
		Self	Rental
1	20-40	2	3
2	40-60	2	14
3	60-80	4	8
4	80-100	3	5
5	100-120	1	6
6	120-140	2	0
	Total	14	36

Source: Author

Above table gives information about use of land. For the making of brick industry 20 Are land should be use on this land barely 50,000 bricks manufacturing kiln, brick industry can develop. In this region some owners are manufacture maximum 10 to 20 lakh bricks at a time and they required more land. They are using their own land or take land on lease or rental basis.

There are 14 brick manufacturing units developed on the own land. The proportion of utilizing land is varied in nature and on the basis of it we formed six categories. In this area 2 kilns owner are using their own property. They are using 20 Are to 40 Are own land as brick manufacturing site. The next category 40 Are to 60 Are, here to own land is utilized by the 2 brick industry owners, then it followed by third category 60 to 80 Are and 4 kilns owners included in it. Then the next category is 80 to 100 Are and 3 owners included in it. The

100 to 120 Are own land is devoted by two owners for set up manufacturing units.

There are 36 brick manufacturing units set up on rental or leased land. The first category 20 Are to 40 Are here to rental land is utilized by the 3 brick industries owners. The next category is of 40 Are to 60 Are and 14 brick kiln owners take land on rent. The maximum number of owners are belongs to this category. They are manufacturing moderate number of bricks, i.e. up to nine to twelve lakhs of bricks annually. In the third category 8 kilns owners take 60 to 80 Are land on rent. The next category followed by five kiln owners and next to it by six. The Range of rental land increases in the same manner.

It means that availability of own land is no much more as compare to the rental basis. It is mainly because the owners are inclined to use rental land which is in the vicinity of water sources as well as availability of soil. Many times they choose land which is more accessible for the importing of raw materials and distribution of produced goods that is bricks.

RENTS:

For any business land is necessary. The land is necessary for variety of reasons, it require for brick manufacturing process, residential space for the workers and sometimes for making provision of water. The land may be either owned or taken on rent/lease. Also for water arrangement there may be bore wells, wells, a pond may be constructed by the owner or it may be taken from rivers.

Fig.N0-VIII

Table No. VIII

UMBRAJ AND SURROUNDING VILLAGES

RANGE Of ANNUAL RENT

Range (Annual Payment)	Rent
20000-40000	6
40000-60000	8
60000-80000	17
80000-100000	4
100000-120000	4
120000-140000	7
Above 140000	4
Total	50

Above Table No. III-VIII gives idea about the possession of land for brick industry. Many times land required for brick industries are taking on rent or lease and sometime own land is utilized by the owner. The rent of this land is minimum 20,000 and maximum 1, 80,000 Rs/- for in give one year. Above the table indicates that 6 owners are giving 20,000 to 40,000 Rs/- rent. The following next category 8 owners are giving 40,000 to 60,000 rent for the brick industry. There are 17 brick industry owners are giving 60,000 to 80,000 Rs/- as a rent and 80,000 to 1,00,000 Rs/- rent giving for the land there are 4 owners for brick industry. In this table show forth category 1, 00,000 to 1, 20,000 Rs/- rent giving there are four brick industries owner. There are seven owners are given rent between 1, 20,000 to 1, 40,000 Rs/-. The last category following indicates more than 1, 40,000 RS/- giving for land there are four owner.

Conclusions:

Bricks are most crucial and bare minimum requirement of any construction project or for building houses. Brick manufacturing is growing day by day because of increasing population and demands too shelter and homes. Satara district has many brick manufacturing places which are spread all over in the

district. This has happened because the raw materials and resources required are available abundantly in the district. Umbraj and surrounding villages are also important locations of the brick manufacturing. Natural resources and environment is favorable for brick manufacturing in this area.

Localization of any industry is very much associated with the raw material, labour and market. This case study reveals that this the brick industry is mainly depend on availability of aw material. Development and progress of this industry is depends upon the raw material like soil, water, coal, khasava, baggasse, land etc.

The Soil required for manufacturing 336 lakhs of bricks is about 17450 trailers. Soil is the most important component. Hence manufacturing setup is done at places where soil can be made easily available e.g. river bank farms etc. Red and black soil is used for bricks making. So, total observation through in study region the erosion of soil was maximum and the total effect on the environment. Coal is an important mineral lignite type of coal is used for brick backing. The use of Coal in brick industry mainly roasting of brick. The main source of transport facility for coal is a railway the Masur railway station nearby area of brick kilns. Generally total use of coal about 4066.25 tons in the Umbraj and surrounding areas brick kilns. The coals provide from Chandrapur, Gadchiroli etc.

The Khasava is important raw material in the brick industry. The Khasava use to better roasting of bricks. Khasava is available in the study region from different source mainly from Taswade and Satara MIDC. The total production of bricks in this region is 336 lacks and hence for processing and better roasting 1514.45 ton of Khasava is required. The baggas is easily available in the Umbraj and surrounding villages. Because sugar industries are located near by the region. The total use of Bagasse in bricks sites is 3722.161 tons.

Water requirement for brick industries in below 1000-above 10000 and this water use for 50 kilns. Water requirement for residential used in below 300 liters- above 1200 liters. 148 families use for this water. Water is a prime requirement in the brick industry. It is required for manufacturing bricks as well as residential purpose. Water arrangements are by bore wells wells a pond and river. The owner makes arrangement according to his convenience. Many times he choose site is the vicinity of water resources but it is not used optimally. There will need to be enough water must be available during brick production.

For any business setup land is necessary. The land may be either owned or taken on rent, lease. For establishment of brick manufacturing industry land is required. Land required for brick manufacturing unit is minimum 20Are area and 1.20 Are area is more than sufficient. For the labours, workers residential propose some part of land is allotted.

PROBLEMS OF BRICKS INDUSTRY

In the brick manufacturing many problems are faced by owner, labour, and environmental problems. There are some problems are as follows

A) OWNER-

There are many issues in working and getting work done by the kilns owner such as the below: They have government permission in brick industries use of soil, water and electricity

- 1) The permission have granted to the brick manufacturing such as pollution board, water board and administrative department of the district.
- 2) Irregularity of workforce and manpower availability is major issue.
- 3) Sometimes advance payment is taken and workers flown away.

4) Due to this financial losses start to end affect to production of the bricks.

5) Sometime the owner faced the problem was bricks are not sold out in the market.

6) Builders and contractors negotiate rates at minimum results in lower profit margins.

7) The raw material is to be safeguarded from rain and the left along with prevention of contamination of foreign material. For this it is usually covered with polythene sheets or kept under shed.

8) Medical expenditure on the accidental case.

9) Sometime owner faces the financial problems, banks are not easily provided financial assistance.

10) Sometime due to ignorance of the workers bricks roasted more and they joints used only for stacking and not for sale.

C) SOCIAL PROBLEMS-

1) Form the bricks industry it exhaust carbon monoxides smoke it is harmful for the people.

2) These brick industries are encroaching government land and rivers.

D) ENVIRONMENTAL PROBLEMS-

1) In the brick industry the use of the natural resources is more, so the exploitation of the resources.

2) All the bricks kilns are polluted the surrounding environment.

3) Effects of pollution on, land, water, human being in the surrounding region.

5) River channels changes due to excavation of soil may cause flooding in the rainy season.

SUGGESTION:

Suggestions to overcome problems are following-

- 1) Brick industries must be away from the habitat area.
- 2) Medical facilities as well as mental treatment should be provided to labour.
- 3) All the information about labours must be kept by the owner a social responsibility.
- 4) Child labor should not be kept on the work.
- 5) Make educational provision for the children at the site.

REFERENCES

1. Alpa Shah; Department of Anthropology, Goldsmiths: The labour of love: Seasonal migration from Jharkhand to the brick kilns of other states in India.
2. Ashish Kumar Parashar, Rinku Parashar: Comparative study of compressive strength of Bricks made with various materials to clay bricks; International Journal of Scientific and Research Publications, volume 2, Issue, July, 2012.
3. Bandyopadhyay Bijetri, Sen D.: Occupational stress among women moulders: A study in Manual Brick Manufacturing Industry of west Bengal, volume 4, Issue-6, and June 2014.
4. Bhat Mohmad Skinder, Afeefa Qayoom, Sheikh K. Pandit and Bashir Ahmad Ganai: Brick kiln emissions and its environmental impact: A review: vol.6 (1), p.p.1-11, January 2014.
5. Dr. Gursharan Singh K.: Push and Pull factors of migration: A case study of Brick kiln Migrant workers in Punjab.
6. Dr. Sharanappa Saidapur: Informal Brick Industry in the North Karnataka Flourish of Perish; volume 1, Issue 8, November 2012.

7. Fuyane B.F., Athlopheng J.R., Mulale K: Impact analysis of informal brick production on the environment: Gaborone Dam Area, Botswana; volume 2, Issue 9, September, 2013.
8. G.M.Martinez, Gonzalez and H. Jimenez Islas: Experimental study of the firing of red clay bricks using liquefied petroleum gas; volume 73, October, 2014,p.p.661-666.
9. Guddi Tiwary and P.K.Gangopadhyay: A review on the occupational health and social security of unorganized workers in the construction industry.
10. Hein De Haas (2007):"The Impact of International Migration on Social and Economic Development in Moroccan Sending Region: A Review of the Empirical Literature"
11. Manash Das: industrial accidents in bricks industry: A case study in Karimganj District of Assam; An online Journal of Humanities and Social Science:-published by Department of Bengali, Karimganj College Karimganj, Assam, and India.
12. Muhammad Javaid Iqbal: Bonded labour in the Brick kiln Industry of Pakistan; The Lahore Journal of economics 11:1 (Summer 2006), p.p.99-119.
13. Mukhopadhyay S.and Ghosh B. (1982): Sources of Variation in female labour force participation. Technical seminar on women on Women's work and employment, ISSI, as in Gandhi, N. and Shah N. 1991.
14. Suman Kumar Pariyar, Tapash Das, and Tanima Ferdous: Environment and Health Impact for brick kilns in Kathmandu valley; International Journal of Scientific and Technology Research volume 2, Issue 5 may, 2013.