

# Chapter 1

## Introduction

### **1.1 Background**

By society, we mean a group of people who share a common culture, occupying a particular territorial area and feel them to constitute a unified and distinct entity. Man is a social animal. He/she cannot live alone. So, from the very beginning of human civilization even man realized that their wants can fulfilled by living in group shelter has been one of its basic needs. Even today for we people to live food, shelter, clothes and sound health are the primary or basic needs.

If we turn the history of civilization of human in past to protect from sunshine, rain, wild animal natural calamities they used to stayed in caves which had them to build houses with stones and wood to make their life safety, to get rest and to maintain secrecy and storing.

As the changing of time human civilization also went on developing their living standards or way of living was also changing. They learned to cultivate food and stopped to eat raw meat of animals for food and they looked for better durable and attractive place to live in. In early days, they carved stones and used them for building which was very difficult. Later, they used mud as building blocks. In the beginning they used dried blocks of mud later they learned to burn the bricks for durability.

As the most convenient for handling, the easiest for bonding and providing aesthetic appearance, over about 6000 years ago uniform dimensional mud bricks were invented.<sup>1</sup> Studies show sun dried brick dating back some 5000 years have also been found in Peru. A pre Harappur head brick found in the

ancient city of Kalibangan in the Indus River valley is estimated to be 5000 years old and it may well be the oldest fired brick on record.<sup>2</sup> Walls of heated bricks similar in shape to today's products have been uncovered at Mohenjo-daro in the Indus River Valley, Pakistan, that are about 4500 years old. Bricks of same date are also found in Iraq.<sup>3</sup>

Brick making probably was the second earliest industry of mankind after agriculture.

Sun dried bricks were used 6000 years ago in Syria. Decorations and adornments were applied to bricks about 5000 years ago when firing of bricks were introduced.<sup>4</sup>

The technology of baking clay to provide bricks and tiles for building construction is more than 4000 years old. It is based on the principle that clay soil containing 20 to 50% clay undergoes irreversible reactions when heated at 850<sup>0</sup> -1000<sup>0</sup> c in which particles is bound together by a glossy ceramic material.<sup>5</sup>

Bricks are mainly made from clay calcium silicate (normally known as sand limes) and concrete.<sup>6</sup>

An improvement in brick mold design had been made 945 B.C. as is evident from the visible appearance of baked Egyptian brick, the brick from Babantis in the Nile delta.<sup>7</sup>

Brick is just (handy sized) dried and heated moist clay, for building walls, pavements etc. Baked or dried clay is brick.<sup>8</sup> Handy sized units for building bricks is typically rectangular and about 2 ¾ x 3 ¾ x 8 inches made of moist clay hardened by heat.<sup>9</sup>

Clay bricks can be defined as earth mud which forms sticky coherent mass when mixed with water. Clay is plastic and readily mouldable when damp but when dried it becomes hard, brittle and will retain its shape. When it is heated at a high temperature it becomes harder, is no longer susceptible to the action of water, and by no known process can its plasticity be restored.

The chief constituents of clay are silica (60%) and alumina (20%) (Average figures), in addition to which there are smaller proportions of iron oxide, magnesia lime etc.<sup>10</sup>

During the 1<sup>st</sup> century, the Romans transported their art of brick making to Great Britain. By the 13<sup>th</sup> century the English began making bricks using their own techniques. 1666 was a great time for London, transformed town of wood to city of bricks, safer city. By this time the art of brick making was exported to USA, and then the rest of the world. Iron shod molds were used in USA in 1629.

Wood baked brick Kilns were operated as a part-time occupation by farmers, who made bricks at odd moments during the season, which closed in the early fall with the burning time set as a social festivity during October. Capacity of the largest Kiln was from 20000 to 100000 taken 3-5 years for sales.

About 1856-70 the 1<sup>st</sup> steam powered soft mud brick machines were invented in the U.S. The bricks were hand-molded.

In 1903 the U.S. introduced a continuous straight line tunnel kiln for brick baking. The Kiln was 576 feet long and probably used coal as fuel.

Structural clay products have has a place in the history of civilization like bread and cloth. By 1900 electric motors were operating the equipment in the plant by 1920 many internal combustion engines were being used for mining and for transportation equipment both in and outside factories.

Brick industry is slow to adapt itself to the scientific revolution. Unlike a new industry created by change, the traditions of thousands of years seem to be hard to break in the brick industry.<sup>11</sup>

The manufacturing of bricks by individuals in private enterprises for example, 'Awales' in Kathmandu Valley was prevalent until 2025 V.S.<sup>12</sup>. The early brick was cooked in simply, then modified Thadobatha (Clamp Kiln). In Nepal chimney (Bulls Trench) was introduced during the period of PM Chandra Samshere Rana. Harishidhi (Chinese Brick) production started from 1965/66.<sup>13</sup>

The ancient craft of Kathmandu valley is brick making. The intricate bricks of various shapes and sizes in temples, palaces and other buildings constructed during Licchavi and Malla periods are the strong for this. Compared to cement block these bricks are considered to be strong, durable and attractive too. The mud found in valley floors and flood places, adequate water and demand in the market are the reasons for the operation of large number of bricks industries found in the valley.

Today, we can find uniform soil blocks which are baked in systematic way so as to get quality bricks.

(In Kathmandu) valley, different (size a old style bricks of like and hachi brick, decorative, crafty bricks are produced) Previously Chinese size bricks

were more popular but currently it is replaced by (eg: Newa accommodation house of Kwalkhu Patan and Dwarika Hotel).

As the population increase of our country more clamp kilns were established and more bricks were produces. As the demand for construction grew many contractor started launching their own temporary kilns. But the bricks produced there were not as qualitative as produced in early days.

### **1.2 Focus of the study**

Due to the establishment of more industry and trade business world is becoming too competitive and more complex. As the demand of time different new technologies, methods idea, are developed and started to face challenges. Marketing is one of basic need of business which facilitates production and distribution of goods and services in whole world and it help a lot in trade diversification. Because of marketing and trade diversification now a days people of the world are able to buy the goods of their choice among many. In simply if we have to define about marketing it is the process of production and distribution of goods and services. According to the Prof. Dr./ Govinda Ram Agrawal of T.U. define marketing as “Marketing encompasses all activities aimed at satisfying the need of the customers through the exchange relationships to achieve organizational objectives with social responsibilities in a dynamic environment.”

According to the American marketing Association- Marketing is the process of planning and executing the conception, pricing, promotion and distribution of ideas, goods and services to create exchanges that satisfying individual and organizational objectives.

In summary marketing is the process of production and distribution of goods and services as per desire of customer/ consumer and on the same time to

take care of social welfare also. And (4Ps) production, pricing, promotion, places are the main components of marketing.

Marketing is important for consumer, business firm, to society and nation. For consumer if provide information and help to rise in standard of living, for business firms it is the main source of revenue earning, information for planning an decision making , mass distribution and to increase in goodwill and it help nation to provide employment. Break the vicious circle of poverty creation of utilization optimum utilization and rise in standard of living etc.

For construction of building, rest houses, temples, hotels, etc in traditional and modern may brick is the main element. So, the obstacles and difficulties which are seen on both buying and selling as well as in production are the studies and researches of this study.

We hear many complain regarding production of brick by consumer and found their dissatisfaction also on brick production burning, in their sizes, colours, and way of selling and among all construction material. Now, this research is showing some of the main barriers of brick with some advices.

While asking about the quality and satisfaction of brick to the consumer it was found that finally they are not totally satisfy because of broken bricks, price fluctuation and also quality and some time improper size in brick and they complain that they are not getting total satisfaction regarding quality of the brick as they paid total amount for it and at the same time producer and seller says that sometime they have to deliver bad lot of brick in expensive price then the good quality due to seasonal variation and sometime in the low price they are able to deliver the good lot. At present time (2064-10-28) price of brick had gone down by about 30% compared to 2 and 3 months

ago. So, consumers are not getting the kind of brick they want easily. Even by paying as per the sellers demand consumers have to hear sellers saying they cannot deliver bricks without certain percent of broken bricks in any cost on a lot. Sales depots are concentrated in certain places only depots have been developed in past few years. In early days people used to travel a long way to the factories to do order of bricks. Most of the consumer does not get the deliver in time after their order.

### **1.3 Statement of the problem**

In Kathmandu valley brick manufacturing is done by farmer class people like Awales Jyapoos. In our valley if we compared to Terai region there are many more complaints from customer on quality of brick. Our country is developing country so lack of technology, qualified man power, poor economy, lack of education, producer are not able to adopt new systematic and scientific method of manufacturing brick and ideas for marketing. There is no study done about brick marketing and very few studies done regarding brick and pollution due to it. Factory establishment procedure made by government of our country very impractical. No systematic calculation of production cost done. Pricing of brick is based on season clay products, brick marketing are far behind as we compared to other thing. If we watched old inscription we could find brick were demanded when valley was formed by Manjushree after drying water from lake. Today, also we people are able to find brick of about 1000 years old in temples, monuments, palaces of old periods. But still there are a lot of complaints regarding about quality, delayed deliver of bricks.

As population increased its production technique and quantity has grown today. Now in valley 50 bull's trench kiln and few numbers of dumps kiln produced local brick more than 60 billion every year.

Now environmental protection, lack of production area, traffic awareness of the people, government of our country make new rule and regulation and also more new rule and regulation and also more regular taxes increases the cost of brick production which is the major problem for production which is the major problem for producer and increases production cost are the new challenges in brick marketing.

As we all know that the development of country is depended upon the industry and trade. Yes, actually that country also benefited by construction business. So, Brick one of the main materials of construction should be marketed well. Therefore, problems related with marketing of brick should be overcome.

#### **1.4 Significance and importance of the study**

Nepal is developing country. Being developing it needs studies and research in every field to find out different problems and their possible solution for the smooth development in every field.

Before 10 and 12 years people in brick business are mostly uneducated they used very traditional old fashioned ways to produce and supply bricks in this modern day. But now a days many qualified person are performing their best performance to overthrow the complain of their consumer. Then also problem and difficulties to establish brick factories, investment, rules of govt. conflicts with land lord, bad relation regarding all pollution with local people, labour availability, good relation with labour lack of promotional ideas, price fluctuations complains on quality of brick, late delivery and difficulty in selection or according to get choiced brick are very usual complain form customer.



During the research it was found from a brick expert that a single bad quality brick can cause problem to total building. Before in Kathmandu Valley there was no segregation of bricks in type A, B, C classes according to its quality but now a days people can choice the quality in different classes and they have to pay price according to quality. It also causes problem only high level people are able to offer for better quality and the remain is for low level who cannot offer more for the major part of construction. Therefore, the study will be an important step towards better brick marketing.

### **1.5 Objectives of the study**

Brick is the main important construction material. So, studies researches must be done about it's marketing and qualitative varities as per demand by time, need, people and proper delivery in proper place. Specially, in the southern part of Asia and in developing country like Nepal there is almost no marketing awareness in brick and it's business.

The following are the major objectives of the study

- 1) To find out the way of satisfaction of consumer regarding bricks
- 2) To analysis the seasonal price fluctuation on brick.
- 3) To evaluate the effective promotional tool.
- 4) To find out the role of government regarding brick industry.
- 5) To see the social welfare of the producers.

### **1.6 Limitation of the study**

To carry on the research work smoothly without any disturbance and to complete the work in time as per the plan the researcher has to barricade his/her research from some limitation. Following are the limitation to my studies:-

- 1) This study is concerned only with the brick making in Kathmandu.
- 2) The study specially focused on production of brick in Kathmandu to traditional method of production.
- 3) The study does not include the new method of production.
- 4) The study does not include new Chinese brick and curved brick.
- 5) The study is limited to product attribute price fluctuation, promotional tools and role of sales depots of local bricks.

# Chapter 2

## Review of literature

### **2.1.1 Marketing**

Marketing means selling and buying of goods and services. Marketing doesn't include all human activities. It encompasses only those activities which are aimed at facilitating and expediting exchanges. These activities are of individual and organizational nature. So, marketing encompasses all those activities which help satisfying needs and wants.

William J. Stanton and Charles Futrell in their book Fundamentals of Marketing writes, "In a business firm, marketing generates the revenues that are managed by the financial people and used by the production people in creating products and services". The challenge of marketing is to generate those revenues by satisfying customer's wants at a profit and in a socially responsible manner.

They also elaborate marketing is a total system of business activities designed to plan, price, promote, and distribute want satisfying products, services and ideas to target markets in order to achieve organizational objectives in business dimensions of marketing.

Philip Kotler, in his book marketing management, writes beautifully "The marketing concept holds that key to achieving organizational goals consists of being more effective than competitors in integrating marketing activities toward determining and satisfying the needs and wants of target markets".

Dr. Govinda Ram Agrawal states' Marketing encompasses all the activities aimed at satisfying the needs of the customers through the exchange

relationship to achieve organization objectives with social responsibility in a dynamic environment. Here, I would like to quote U.S. President George W. Bush .I was really impressed by his giving another word for marketing. He said 'MARKETING IS FREEDOM'. He said, people wore uniform clothes then but now people wore different clothes, clothes of their choice. People have freedom to choose such products produced and supplied, therefore, now I can see people wearing beautiful different types and beautiful different colors of clothes in this hall.

### **2.1.2 Marketing Mix**

Marketing mix is everything that organization can do to influence the demand for its products in the target market. So, it is set of controllable variables that a firm can use to influence the buyer's behavior with in a given marketing environment.

According to Philip Kotler: "Marketing mix is a set of marketing tools that the firm used to pursue its marketing objectives in target market."

Marketing mix can be classified into four parts:

- |                |                     |
|----------------|---------------------|
| 1) Product mix | 3) Distribution mix |
| 2) Price mix   | 4) Promotion        |

Which are also known as major elements, 4Ps or tools of marketing. While the marketing mix is largely controlled by company management this mix still is constrained by external environmental forces.

All elements of marketing mix are essential equally important and interdependent. Decision on the four elements must be taken simultaneously and together they give us total marketing programme. Customer's satisfaction can be achieved only by designing the marketing mix suitably for the customer's group.

**Product:-** Product is the heart of marketing mix. It fills the needs of consumer or user. Sales success is assured if a marketer offers a right product to a right customer at the right price, time and place. It consists of right product design (size, shape, colour) product variety (line and items), Quality (standardization and grading), features, branding out trademarks, packaging, Services (before and after purchases) warranties. So, under product mix product line product planning and development etc are included.

**Price Mix:-** Management should determine a right price for its products. Price is the amount of money that customers pay for the product. Price should always be affordable and acceptable to the customers. Under this mix formulation of pricing objectives, setting the price and determining terms and conditions of sales etc are included.

**Place Mix:-** Effective distribution is also necessary to sale products. So, to distribute products to the right place and efficient distribution system should be developed. Place includes the various activities undertaken to make the product accessible and available to target customers in right time and right place. Components of place mix consists of channels(direct or middlemen, whole seller, retailers etc), physical distribution activities such as order processing, warehousing and location material handling, inventory management transportation etc.

**Promotion mix:-** To sale product to the target customer, management needs to inform and persuade through right promotional media. It includes all the activities undertaken to communicate and promote products to the target market. The main components under it are advertising sales promotion,

public relations, personal selling, direct marketing, publicity through remix paper, radio, margarines, T.V etc.

### **2.1.3 The Marketing Environment**

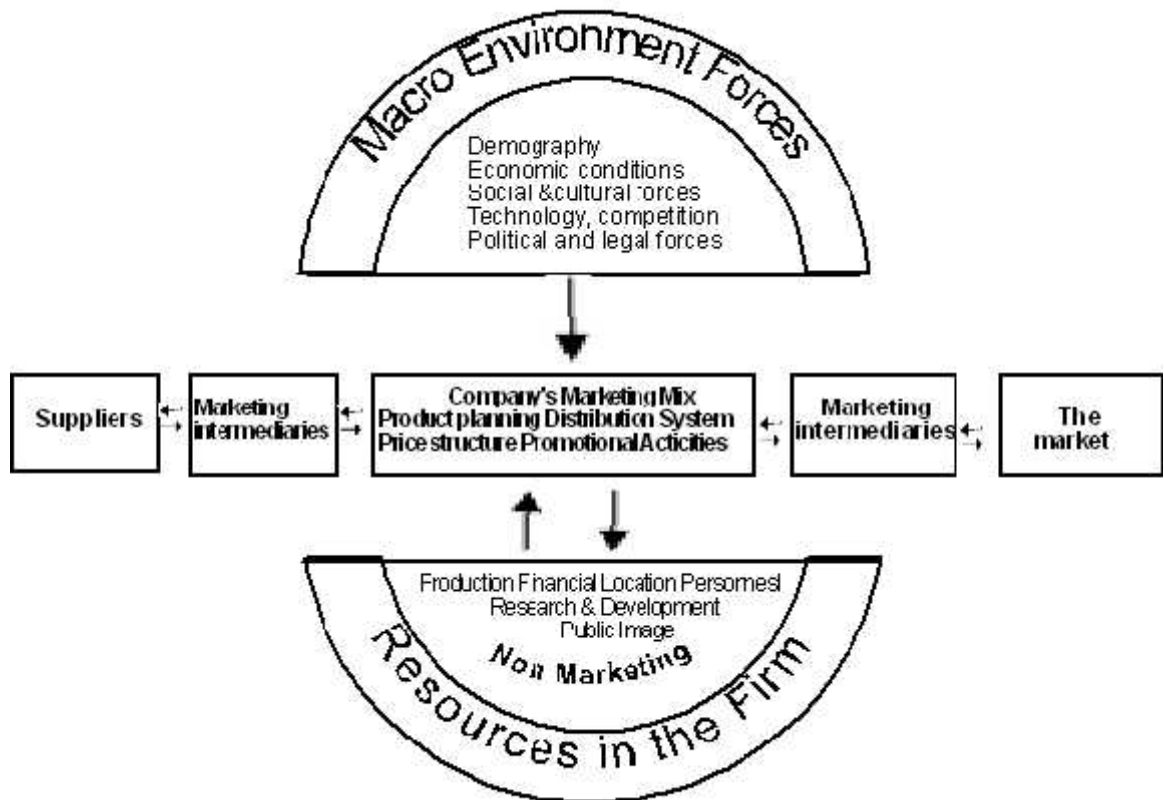
Marketing Environment means different entities or forces which may directly or indirectly affect the marketing activities. The environment of any organization is the aggregate of all conditions, events and influences that surround and affect it. Environment is complex, dynamic, multifaceted and a far-reaching impact.

The marketing must design a strategic marketing mix that enables the company to satisfy the wants of its target markets and to achieve its marketing goals.

Company may market one item or several related or unrelated. They may be distributed through wholesalers or directly to retailers and so on. Ultimately, from the multitude of variable management must select the combination that will

- 1) Best adopt to the Environment.
- 2) Satisfy the target markets.
- 3) Still meet the organizational and marketing goals

Fig.



Environmental forces are known as strategic variable because they are dynamic and they change with time. Marketing environment is ever changing forces within its framework, marketing system operates.

Marketing Environmental forces are of external or internal to firm. Those forces make internal environment which are located within the company and which are controllable using different strategies in long run. These forces are inherent in the organization and are controlled by management like production facilities financial capabilities. Human resources, company location, company image, research and development capabilities. The external forces which are located outside the organization and are uncontrollable by firm may be divided into two groups. The first is a macro

such as demography, competition, society, culture politics laws technology and economic conditions (business cycle, inflation, interest rates, unemployment etc). The second are micro which includes suppliers, producers, marketing intermediaries and market itself is also external to the firm. But these customers can be controlled to some extent by firm.

For successful and efficient marketing of the product right steps, plans programmes, policies and strategies should be prepared. Marketing research helps in getting the good and useful important information to make right choice on step or decision.

#### **2.1.4 Marketing Research**

Marketing research is concerned with product, advertising, sales and motivation and attitude. It is the systematic design, collection analysis and reporting of data and findings relevant to a specific marketing situation facing the company.

The American Marketing Association defines marketing research as follows “Marketing Research is the function which links the consumer customer and public to the marketer through information, information used to identify and define marketing opportunities and problems, generate, refine and evaluate marketing as a process.

Marketing Research specifies the information, manages and implements the data collection process, analyzes the result, and communicates the findings and their implications.

From 1960 companies started forming Marketing information system.



### **2.1.5 Marketing Information System**

MIS is simply a logical computer based extensions of marketing research. A marketing information system is a continuous and interalting structure of people, equipment and procedure design together, sort, analyze, evaluate and distribute pertinent timely and accurate information for the use by marketing decision maker to improve their marketing planning, execution and control. So, A MIS is an ongoing, future oriented structure designed to generate, process, store and later retrieve information to aid decision making in an organization's marketing program. If a company has a formal MIS unit then the marketing research activity is probably treated as just one part of thesis information system.

## **2.2 Review of related studies**

### **2.2.1 Product**

A socialist in a forgotten novel, South Riding, by Winifred Hottby, says "I believe in bricks and Mortar". He means a good deal more. He means that there can be no good education without good secondary school: that there can be no good secondary school without good buildings: that here can be no good building with out good bricks and mortar.

Chinese size brick is generally of 2 types as following

1. Chinese bricks
2. Nepali bricks

The production of Chinese bricks was stated by Chinese government collaboration is Harishidi Ita Tile Karkhana in Harishidi in 1965. Chinese brick is qualitative and does not need to cover with plaster; it is smooth, attractive and stronger.

A Nepali brick which is the subject of my study is basis brick even when building is made of Chinese bricks. Chinese is only used for outer side of the wall (facing).Also, quality of Chinese bricks is being diminishing and of less demand at present compared to past high demand. Therefore, at present scenario Nepali brick is becoming important factor in construction.

#### **a. Decoration**

##### **Sanded Surface**

Better coverage and a wider range of colors are produced by adding clays, coloring oxides, ceramic pigments and fluxes such as soda, ash and borax to molding sands. Unevenness in the brick shape, surface texture, and outer color application is common to add a flux to the sands for application to stiff-mud bricks in order to promote adherence.

Ancient products were also scratched or embossed for esthetic effects. Different proportion of chemical composition in clay and sanding could produce different color textures, The wide variety of color textures available to –day allow architects to express the purpose of building in their design, also allows blending into the landscape so that the building seems to belong. While clean looking bricks are often used for hospital, food preparation plants research facilitates and utility buildings where cleanliness is of prime importance in successful operation.

Brick must bare freezing and any hot temperature. Bricks soaked in water before applying mortars have stronger bond but with thin glazed wall tides and unglazed floor tiles best bonds are made cement mortar if they are not pre-wetted.

Efflorescence and staining of brick work is due to presence of salt in clay itself.

For cleaning first we have to know type of stain. First is done soon after construction & mortar dried. Some stains are washed by few rainfalls. Generally 10% hydrochloric acid solution is recommended and later cleaned with water. Bricks are good building material for long life, low maintains, high comfort factor for buildings because of their high heat capacities which ultimately means lower energy costs to heat and cool buildings. The fire proof with no sacrifices, aesthetics and with extensive variability in color and textures.

Raw material for structural clay products are cheap and in exhaustible and these conditions are not likely to change (it is quite possible that suitable clay deposits are forming on the earth as they are being used by this industry).

In technical changes, coal then gases and fuel oil is in use and electric energy is inevitable for drying & banking bricks. There will be automation and improvement in quality.

Research of the future; improve quality, productivity and lower construction costs.

Lack of research is due to lack of wealth since small enterprises doing it, conservatism therefore resists change and innovations, no governmental activities. These are true in USA too. Small enterprises should unite merge to solve the problems in this field. Compatibility of baked phases to reduce micro cracks, improved face brick design to simplify wall construction,

production of low cost partition and foundation bricks research recommended are still in developed country like USA.

### **b. Measurements of bricks and joints**

Aurold Bailley and David Hancock in their book Brickwork and associated studies 2<sup>nd</sup> edition writes.

“A brick is defined as a walling unit not exceeding 337.5mm in length of a brick to equal twice the width plus one joint and three times the height plus two joints”.

### **c. Qualities of bricks**

Aurold Bacley and David Hanock points out following requirement for a brick.

1. Brick should be well
2. Have good arises
3. Have an even colour: all bricks simultaneously needed.
4. Be easily cut
5. Have regular size
6. Have no time blows
7. Be salt free
8. Be unmarked (due rough handling)
9. Have adequate strength and density below D.P.C need to be dense and well burnt, for manhole construction should preferably be class B engineering & for brick on edge coping a smooth engineering is too preferred. Well burnt brick gives clear ringing sound when stuck with a trowel.

### **d. Classification of bricks**

They also write about numerous methods by which are classified for example

## Classification

### a) Place of origin

- i) Leicester
- ii) Accring tons
- iii) Staffordshire blues
- iv) London stocks

### b) Methods of manufacture

- i) Handmade
- ii) Wire cut
- iii) Pressed

### c) Uses

- i) Common
- ii) Facing
- iii) Engineering

### d) Color

- i) Blue
- ii) Red
- iii) Buffs

Colour bricks should not have holes but may have frogs or cavities not exceeding 20% of the gross volume of the brick.

Everett in his book Mitchell's materially has classified bricks in the following way.

### **I. Classification by variety**

Common: For general building work having no special claims to attractive appearance.

Facing: specially made or selected to give an attractive appearance without surface treatment such as rendering ordinary or special quality.

Engineering: Having a dense vitreous and specified strength and absorption is special quality.

### **II. Classification by quality**

1. Internal : suitable only for internal use. Frost resistance is such that the bricks may require protection if exposed during one winter.

2. Ordinary : Normally durable in external faces of building.

3. Special : Durable in severe exposures where they are liable to be wet and frozen e.g. retaining walls.

### **III. Classification by type**

1. Solid brick: Solid brick should not have holes, cavities or depressions, a cavity being a hole closed at one end.

2. Cellular brick: Cellular bricks should not have holes but may have frogs or cavities not exceeding 20% of the gross volume of the brick.

3. Frogged bricks: Frogged bricks should have depressions in one or more both faces but their total volume should not exceed 20% of the gross volume of the brick.

4. Perforated brick: Perforated bricks should have holes but not exceeding 25% of the gross volume of the brick and the area of one hole should not exceed 10% of gross area of the brick.

1. Hollow : Hollow bricks have larger holes than above, passing through.

2. Special shape: Special shapes bricks are bricks other than rectangular prisms.

3. Standard specials ; Special shapes which are in general use and may be held in stock e.g bats closers, squints, bullnoses, coping bricks.

He also writes bricks are made in 4 materials

1. Clay bricks (burnt bricks)

2. Calcium silicate

3. Dense concrete

4. High weight concrete

### **e. Clay bricks**

Clay bricks can be defined as an earth which forms sticky coherent mass when mixed with water. Clay is plastic and readily moldable when damp but if dried it becomes hard and brittle and will retain its shape. When it is

heated to high temperature it becomes even harder, is no longer susceptible to the action of water by no known process can its plasticity be restored.

The chief constituents of clay are silica (60%) and alumina (20%) (average figures), in addition to which there are smaller proportions of non oxide, magnesia, lime etc. silica (sand) produces hardness, resistance to heat, durability and prevents shrinkage, cracking and warping but excess to this constituent makes a brick brittle and porous. Alumina gives the plasticity which is necessary for proper molding, but this shrinks and warps and becomes extremely hard when burnt. From these two qualities it will be obvious that the chemical constituents of the clay will have a profound effect on the type of brick produced. Where the clay has an excess of either of these constituents it may be necessary to blend with clay from other district.

#### **f. Tests**

1. Comprehance for dimensions
2. Compressive strength test
3. Efflorescence test
4. Soluble salts test
5. Water absorption test.

As cement did not make beautiful buildings, facing of brick, tile and stone were applied.

Basic principles of mineralogy are extremely important in the production of high quality clay products.

Nepal National Building code says the brick should be of a standard rectangular shape, burnt red, hand formed or machine made and of crushing strength not less than 3.5 N/mm<sup>2</sup>. The higher the density and strength, the



better they will be. The standard brick size of 240\*115\*57 (mm) with 10 mm thick horizontal and vertical mortar joints is preferable. Tolerances of - 10 mm on length,-5 mm on width and  $\pm 3$  mm on thickness shall be acceptable for the purpose of thick walls in this market.

Brick is produced from Oct. to April (seasonal production) since the producer has to pay less rent for land (i.e. wheat crops and remaining period land lords could use this land for rice crops) and to avoid less damages in rainy season.

Mr.Kimbell, in his book, “Principles of Industrial Organization”, (6<sup>th</sup> edition) writes "the most advantageous location for brick production is that at which the cost of gathering materials and fabricating it plus the cost of distributing the finished products to the customer will be minimum".

Location governing factors are

1. Availability of fuel
2. Availability of raw material
3. Availability of cheap labour
4. Nearness to market for products

Mr.Brownell in his book structural clay product classified books as following.

A. Facing

1. Extruded stiff mud process
  - a) Solid plain textures or glazed
  - b) Cored plain textured or glazed
  - c) Panel plain textured or glazed

## 2. Sand molded soft mud process

- a) Sand textured
- b) Glazed over sanded surface

## 3. Dry pressed

## 4. Height weight

## B. Common

## C. Paving

Each of these general types of bricks requires special properties suitable to their intended use and has different price.

In Nepal, sand molded bricks made by the soft mud process are formed in damp wooden molds lined with sand to prevent stitching of the clay.

Soil should contain 35% clay for extrusion bricks .50 to 40% clay for soft mud bricks, more than 50% clay results to excessive shrinkage.

For better looks of bricks, some additional materials are used. Like there is no mould release problem in sanding a different colour, grits with a narrow particle size range can be employed for special effects to add a flux to sand in order to promote adherence. Bricks are scratched/ embossed for esthetic effects and strong plaster (mortar) banding.

Different brick making technologies are in use in Kathmandu valley. These vary from the simple intermittent type manual operations, which use age-old clamp kiln (Thado Bhatta), to continuous type Bull's trench Kilns

(Chimney Bhatta) and semi mechanized Hoffmann kilns. Clamp Kilns are less fuel efficient field kilns and bricks product from these kilns are poor quality Bulls French kilns do not require permanent construction, hence they are set up on leased agricultural land. The entire brick making process from soil excavation to brick burning is manual and are done in rented land. Most of the kilns in Kathmandu Valley are bull's trench. Few semi mechanized Hoffmann kilns with cleaner production process and quality bricks, are in operation in valley. They use combined extrusion machines fro brick making. Bricks are baked in kilns built an permanent shades with fired chimneys. Though Hoffman emission, the initial capital investment which make bricks expensive due to high share of capital in the overall production cost make these klin and other latest modern western technologies less attractive to entrepreneurs.

Besides coal, basic fuel types include fuel wood, saw dust and rice husk are used. Nepalese labourers do the unskilled job such as clay digging, moulding and transportation to and from the kiln. Skilled labourers from India do jobs such as kiln firing and feeding fuel which affect the quality of bricks.

The fugitive and stack emissions from these kilns have been of great environmental concern. To achieve a sustainable health air quality both stack and fugitive emission have to be reduced by improving the existing kilns, using cleaner fuels, adopting improved technologies and retro fitting pollution control units.

#### **g. Brick Manufacturing process**

Brick manufacturing process can be broadly divided into two parts:-.

Brick making: This includes brick making methods- starting from clay digging to drying of bricks.

Brick firing: This refers to type of kilns and the technology used for brick firing.

## **1. Brick making**

Manual method and use of machines are both adopted for clay winning, preparation, moulding , and drying in the valley. Clamp and Bulls Trench Kilns are manual bricks making method, where as Hoffmann Kiln use combined extrusion machines.

## **2. Manual Brick Making**

### **i) Clay winning**

A spade (Kodali in Nepali vernacular) is used to dig the fire able soil. Digging is usually done to a depth of about 5 feet, because brick making is seasonal work and after each season after the soil excavation, the land is to be leveled and returned to farmers for agriculture use.

### **ii) Clay preparation:**

This includes sorting, wetting and damping the soil. Sorting is done by pinching out roots, stones and other foreign particles. The clay is wetted in a puddle dug near the working area. This process known as tempering allows chemical and physical changes to take place, improving the molding characteristics. Manual winning is done by treating with bear feet. Mechanical equipment driven by animal and machines such as the pug mills are not in use in the valley.

### **iii) Molding**

Simple wooden mould is used in hand- molding method. The clay is formed into the clot, thrown into the mould using both hands and excess of clay is cut off.

### **3. Machine Bricks making**

Hoffmann kilns use combined bricks extrusion machine to extrude clay through dried to form a clay column, which is wire cut into brick sized pieces. Bulls Trench Kiln in Kathmandu Brick Factory at Siddhipur in Lalitpur is using combined brick extrusion machine for brick making and these machine produce denser and stronger bricks.

### **4. Brick firing**

In Katmandu valley intermittent type clamp kiln and continuous type Bulls Trench and Hoffmann kilns are in operation.

Clamp kiln; clamp kiln is Thado Bhata in Nepali vernacular. These kilns are basically a pile of bricks interspersed with combustible fuels (e.g. crushed coal, rice husk, cow dung etc) .The structure of kiln is arranged with alternative layers of fuel and green bricks. The usually rectangular firing clamp has some holes at the bottom from where the fire is lit. The size of clamp varies according to the bricks to be burnt, but the height varies from 3-5 meter. After the kiln is created, the outer later of the kiln are plastered with mud to trap fuel gases. Finally, the bottom holes are closed after the fire is lit and the fire allowed burning the bricks which take about 12 days to a few weeks. Like wise, bricks are left for few days to cool. The advantages of the kiln are its adaptability to bake bricks of all shapes and sizes, low level of skills required and low capital investment. The disadvantages are the burning process is very slow; there is no control on the kiln , quality of

bricks produced is not uniform, with higher percentage of over baked and under baked bricks.

### **2.2.2 Type of kiln**

- i) Hoffman kiln
- ii) Bull's Trench kiln

#### **i) Hoffman Kiln**

Hoffman kilns in the Kathmandu Valley are oval with chambers for setting up and removing bricks. In this kiln, combustion air is preheated by cooling bricks in some chambers and passes through firing zone. From which the exhaust gases preheat the green bricks. The cool bricks are removed from one side of the top through holes in permanent arched roof. The advantages of these kilns are, supply of bricks is continuous and regular, preheating is done by hot gases before they escape into the atmosphere and considerably reduce fuel consumption and stack emission likewise bricks are baked evenly and the quality of bricks are good, the height of chimney control particulates and fuel gases. The only disadvantage is the higher capital investment. These kilns use seasoned clay. Brick produces in these kilns are of bright colour, smooth surface, and are used as wall material, without rendering.

#### **ii) Bull's Trench Kiln**

The Bulls trench kilns operate on the principle of Hoffman Kiln, except that the expensive ached roof and dampers for drought control are omitted and the exhaust gases are drawn through about 16 meter high movable chimneys with a wide base. The movable sheet metal chimney mouth fill over the open able vent holes set in the brick and ash and rubble cover the top of the kiln. 12-15 persons move the chimney and at stationary, these are supported by steel and wire rope guys. In these kilns reuse of heat is achieved by drawing

exhaust combustion gases from being fired through to successive batches of bricks waiting burning. Draught is achieved by a pair of chimneys positioned ahead of fire, which sucks in the kiln gases from the entry point through fire and forward through the bricks. The cooled bricks are removed and green bricks set up in the kiln while brick firing is also in progress. The fuel generally a mixture of crushed coal and saw dust, is fed through the hole on the top. These kilns are of oval type. A trench is dug in and the walls constructed at dry elevated area and its size in the valley ranges between 23-32 feet wide and 6.5-7.5 feet deep. The production capacity of a kiln is directly dependent on cross sectioned area of the trench. Low capital investment compared to higher profits due to the technology which does not require machines and permanent structures, use of labour intensive brick making and firing process are the reasons for the operation of large number of these kilns.

### **2.2.3 Brick Quality**

In Bulls trench kilns about 60-65% of bricks is grade, 20% are second grade 15% low grades and about 5% wastes (under fired, over fired and broken). Bricks sold in Kathmandu valley are not graded. All grades are mixed and sold in the market at the same price. Such practice is prevalent due to lack of knowledge of grade and minimum standard of bricks to buyers. In the building construction supervised by engineer, brick standard and grades are taken into consideration.

### **2.2.4 Colour of fired bricks**

Red coloured bricks are generally preferred in Nepal & India. However, by altering the composition of the clay mix and kiln atmosphere it is possible to attain a wide variety of colours in fired product. In almost all instances, the colour of fired bricks may be attributed to the presence of iron compounds in clay. Iron produces different colouration, depending mainly on its state of

oxidation. In oxidant atmosphere (which is generally the case), non minerals are converted into ferric oxide by the beginning of the verifications period. The colour of ferric oxide is temperature is increased darker reds are produced until the colour is almost black at around 1300C.

### **2.2.5 Promoting bricks**

As mentioned earlier, marketing awareness is low in Nepal and its worse in brick sector. Most consumers have to go searching for brick factories, depot agencies or ask friends and relatives to find out about its location.

Recently, from last few months it has been seen that brick dealers are sponsoring traffic signal board, it is really very new. In the name of advertisement, we see name of the product and phone number written on brick carrying vehicles or see bone number on yellow page at free listing. Negligible contractor and mason are appointed as personal sellers. Publicity and goodwill has been only effective promotional tool. Transportation communication systems, storage, product processing are marketing infrastructure. These infrastructures can also be good promoter of brick industry itself.

### **2.2.6 Place: Distribution and Transportation**

Consumers are mostly complaining about late delivery and waste of time of their labour and mason. People have to go searching for bricks and its proper service. Depot agencies are helping to overcome those problems. We also find some customers from outside valley like Pokhara, Tanahu district, Narayan Ghat, Chitwan therefore, we could establish some counter over there. Due to traffic police rule inside the city it takes at least a day for brick delivery because goods carrying vehicle are not allowed at day time. This problem could be discussed with the government authorities and solved. May be smaller, covered vehicle could be used at day time. In 1982, 75% of



brick produced in Bhaktapur Chimney brick industry was consumed by Kathmandu district. Bhaktapur people just consumed 10% rest used Thada Bhatta brick. Then factories could not fulfill the demand of the consumer. The customer have to wait for even 3/4 months after depositing money in advance to get the delivery order of brick. Only market channel was directly through customer contacting producers.

### **2.2.7 Pricing Policy of Public Interprises in Nepal : A case Study of Brick & Tile Factory Ltd. Harisiddhi**

" It seems that market price of bricks in the private sector has been the guiding motive was felt that the size of the factory's (Harisiddhi's) bricks was comparatively bigger and smoother than of other bricks available in the market, hence the price of the bricks was recommended at "level higher than that of completing bricks (local bricks of private sector)" There is no separate pricing unit in the factory.' Even chartered accountant was hired later but price was never market based as earlier nor appropriately cost analyzed. And may be of the factory (public enterprises) was the reason. The factory is doing a good job.

Regarding demand and market study, the factory has never felt it necessary to study the short term and long demand for its product, since it was never able to meet the demand. This research has shown 20% to 25% of the annual sales revenue was advance deposited from consumer then. This research finds out NG has felt out necessary to have another factory in Bhaktapur. Researcher commends to have detailed demand and market study to determine the long term objectives and pricing, production policies. In such a study, if under taken separately BTF should have: Estimates of market demand elasticity's (price income and cross) for the whole industry and a also for the part (own products) including survey finding on private sector operations and recommendation.

This research has also checked in relation to price increment. Research also found local bricks indicates that are smaller and consumes more cement," The concept of scientific full fledged cost accounting and management accountancy system is singly non existent in BTF(brick and tile factories.)

### **Suggested strategy**

The price of brick and tiles should be established in accordance with the cost plus pricing principle and utmost effort should be made to resume the stability of price through internal subsidization, coordination with proposed factory at Bhaktapur and by restoring a balance in the scale of efficiency. The opportunity cost of capital should be taken as guiding principle in the determination of mark up, which by an analysis , comes to 7 ½% only on bricks. All the necessary reserves could be provided out of revenue from tiles. To sum up the most important strategy would be one where by there is optimum brick and roof tile production, with emphasis on cost control.

### **2.2.8 Brick making industry in Bhaktapur**

#### **Price**

Price fluctuation is owing to changing wage and cost of fuel (inter year fluctuation, here in this research is concentrating on intra year fluctuation). Transportation Communication Systems, Storage Product Processing are marketing infrastructures. Then 75% market of the chimney Bhatta in Bhaktapur district was Kathmandu district, local Bhaktapur people just consumed 10% rest used thado Bhatta bricks. Then factories could not fulfill the demand of the consumer, the customer had to wait for even ¾ months after depositing money in advance to get the delivery orders bricks. Only market channel was directly through customer contacting producers.

### **2.2.9 Demand and Supply**

Every year three to five thousand construction works are started in Kathmandu Valley. Almost about all bricks 50 billion pieces of brick produced from about 136 factories are consumed every year. In Kathmandu valley in the year 2002 to 2004 A.D annual bricks production was 344.65 million pieces by Clamp Kiln shown by survey of brick industry in the Kathmandu Valley. Almost all construction in Kathmandu valley consumes these bricks. Every year there is big price fluctuation. We hear one of the reasons for higher price is due to high demand but shortage of brick. This is true to some extent. About the beginning of the new production season most of the factories and depot are empty. But we never experienced brick absolutely out of stock. We get the brick with transform present brick firing technology to pollution less technologies. We found few new factories started illegally at present.

## **Chapter: 3**

### **RESEARCH METHODOLOGY**

#### **3.1 Research Designs:**

Research design is the systematic design collection analysis and reporting of data and findings relevant to a specific situation facing the company and industry.

It is planning of research programmed before it starts. It includes researching matter, when, why, where, how much and how research will be done kind of data, how, when, where will be collected how samples are collected, research time schedule, data analysis and reporting techniques etc. it helps the researcher to fulfill its objectives with in the available time and budget.

We know that marketing programmes starts from the product idea in mind and does not end until customer's wants are adequately satisfied. Learning more about customers and dealers and about marketing mix is the heart of research.

Hence, this research on brick marketing practices in Kathmandu valley what improvements; new marketing theories can be implemented to enhance brick marketing, which will help consumers get the kind of brick they want and produce as desired by consumers and easily get for their bricks. This research is basically exploratory in nature and at the end some conclusive remarks will be given on basis of conclusive research as well.

Mostly, data's are collected from consumers who will come to brick factories and depots to buy the bricks and some neighbors who are building their houses. Here, some data's are also be gathered, mostly primary some available secondary data's from producers and retailers (owners).

Conclusion and recommendations will be made analyzing developed and distributed some interviews will be done and collected. Data's are collected in production season and unproduction season of the same year.

### **3.2 Population and Sample**

In Kathmandu valley we have about 75 brick factories in Bhaktapur district, about 65 in Lalitpur and about 12 Kathmandu. About 150 depot agencies and every year about five to seven thousand construction were started in Kathmandu valley.

In this research population is all the brick consumers, all brick producers and brick dealers in valley. From all of there 50 consumers, 10 brick producers and 10 brick dealers all together 70 will be the sample size.

### **3.3 Sources of Data**

There are some research regarding brick marketing in Kathmandu valley, very few studies are done about brick by engineering students on environment impact and efficiency of present kiln. Therefore my study is mainly based on primary data.

#### **Primary Data**

Primary data are collected through questionnaire which was distributed in factories, depots, to be filled by visiting customer, and owners.

#### **Secondary Data**

Very few available secondary datas are in use in appropriate places gathered from Bhatta associations.

### **Questionnaire**

Structured and unstructured questions were prepared for the collection of data and distributed to producers, depots and consumers.

### **Observation**

While collecting data and studying brick marketing direct observation was done.

# Chapter 4

## PRESENTATION AND ANALYSIS OF DATA

### 4.1 Introduction

Brick is refined modified building blocks. Therefore, it should be convenient building material. Millions years ago our ancestors lived in caves, then they learned to build huts using stones, rocks etc. As agricultural age started they learnt the use of soil. They learned that soil mixed with water can be formed into any size and as it dried it hardens and strengthens. So they invented uniform size of sun dried mud bricks. We have proof of five, six thousand year old dried mud bricks in Iraq, Pakistan etc. We could still see some of the houses built with dried mud brick even side by side in Kathmandu valley.

If the soil is good, then something unfired bricks become stronger than fired bricks of bad soil. Kathmandu has a good soil, so bricks in valley are stronger.

When human beings learned that fired bricks are stronger, water resistant, they also give a good reddish colour to it to make it attractive and strong.

As the changing of time brick producing technologies changed on. Developed countries are using almost 100% pollution free technologies like gas chamber, electric cooking without firing technologies etc. But still today in our country due to lack of proper technologies brick factories used traditional method bulls trech.

Due to the lack of awareness most of the producer in Kathmandu are not able to produce appropriate brick as desired by consumer nor consumers are able to select and demand what they need.

Here we can realize the importance of the consumer in product design. Marketing deals with identifying and meeting human and social needs. It is demand management. It is meeting of customer needs to achieve organizational goals.

Over here in the study it has been tried to promote brick marketing concept and importance of consumer in it. Here I tried to point out.

**Table 4.1**

**Buying purpose of local brick**

Purpose	Response	Percentage
Personal use	29	72.5%
Contract work	11	27.5%
Total	40	100%

Different types of buyers according their buying purpose are found in the market. Some buyers buy goods to fulfill the personal use while other to complete their contract.

Above table shows consumer going to brick factories or depot agencies for buying purpose of local brick. Among them 72.5% of the respondent were agreed that they gone to buy for personal use and only 27.5% responded in favor of contact work.

Here it will be necessary to mention that all the questions were not responded by the respondent. Different numbers of responses to different questionnaires.



## **4.2 Brick as only alternative for construction**

If we turn our history from our ancestors period soil brick (without fired) was used to construct small hut to save their life from wild animals, enemies etc. As agricultural age started they learnt the use of soil. Then, they slowly leaned fired bricks are stronger water resistant, gives a good colour. And till today it has been used.

**Table 4.2**

### **Brick as only alternative for construction**

Reason	Response	Percentage
Cheap	4	10%
Stronger	6	15%
Everybody use it	26	65%
Don't know other alternatives	4	10%
Others	-	
	40	100%

The above table shows that among 40 responses most of them 65% have responded for local brick because everybody uses it. Then 15% responded they used due to its strong ness and 4% said they don't know other alternative or alternative that can replace brick with equal satisfaction and due to it cheapness than other Chinese brick and easily available, they used it frequently.

Since the period of our forefather brick is only one alternative for the construction of shelter. Having no other alternatives and the main cause of using it by everybody building purpose many consumers prefer the same.

### **4.3 Local brick against Chinese Brick**

From the very beginning of the human civilization place of living has been one of its essential needs. Brick has been most commonly used as construction material. Discovery of brick was found about five thousand years ago in Iraq, Pakistan etc. First they used sun dried brick later they learn to produce brick by baking clay.

In Nepal we can trace or get information about the manufacturing of brick was started before two thousand years which was mentioned in our historical monuments.

In Kathmandu valley usually Chinese brick or local bricks are used for construction purpose. Chinese bricks are especially used for facing purpose. From the collection data following information is received.

**Table 4.3**

#### **Local brick against Chinese brick**

Reason	Response	Percentage
Easily available	10	25%
Stronger with plaster	15	37.5%
Due to cheapness	14	35%
Can be coloured	1	2.5%
If any other	-	
Total	40	100%

Especially in the brick market of Nepal two kinds of bricks are found. They are Chinese brick and local brick. If we compare, there many consumers are found who choose local brick against Chinese brick due to its cheapness and it is stronger with plaster. Chinese bricks are too much costly on one hand, and it cannot be plastered.

Above table shows most people 37.5% choose local bricks against Chinese brick for its strength with cement plaster 35% have chosen local brick for its cheapness than Chinese brick. About 25% have chosen local brick for its easy access and only 2.5% preferred local brick because it can be coloured as they like to decorate their home after covering local brick wall with cement plaster.

**Table 4.4**

**Suggestions on improvement in local brick.**

Aspect	Response	Percentage
Improvement in quality	30	75%
Lower breakage	4	10%
Improvement in finishing	5	12.5%
Exact quantity delivery	1	2.5%
Total	40	100%

The above table shows clearly about the suggestions of consumers on improvement in local brick. We can take local bricks as basic requirements/needs of construction. Without it work of construction .without it work of construction is remained as a dream only. So, improvement on its quality, finishing, breakage and delivery must be cared by producer.

Consumer always want good quality of brick (reddish in colour, strong, good finishing) etc. consumers are the best advertiser who advertise the bricks of produces to their relatives, friends, neighbours etc.

Above table 4.4 shows improvement is mostly needed in quality i.e well cooked reddish in colour, 75% have complained about those then 12.5% have complained regarding bad finishing, 10% have complained about more of broken bricks which are delivered mixed with brick. About 2.5% consumers have complained about cheating on quantity number of bricks delivered to them.

#### **4.5 Price fluctuation**

After a detailed study about brick in valley a very surprising fact is found in brick price fluctuation. About 50% price differences is recorded in the same year and which make everyone curious about it.

Every year production season started in around Mangsir. Since this period brick prices decrease and goes minimum around Falgun. From Baisakh price starts increasing and price doubles up to Bhadra. And then again price start decreasing around Mangsir and this cycle is in going on. Price is an important element of marketing mix. It is the major determinant of customer choice. It is the only marketing mix of element that produces revenue. It helps to determine the profit and loss.

After the interviews with consumers about the awareness of price fluctuation the following information acquired.

**Table 4.5 (i)**

**Awareness of price fluctuation from consumer.**

Price fluctuation	Response	Percentage
Aware	32	80%
Unknown	8	20%
Total	40	100%

Table shows that only 8 consumers are unaware of price fluctuation and 32 are aware on it and frustrated as people have to buy it in high price due to their helplessness position. They don't have other alternative to fulfill their urgent need. Usually, people build a house which will take long time to complete. Some that kind of consumers are also found who are shifted to Chinese bricks due to high price of the local bricks.

**Table 4.5 (ii)**

**Buyer at high price**

Buyers	Response	Percentage
Yes	23	62.16%
No	14	37.84%
Total	37	100%

During the study about brick in valley two types of buyers are found. Some are ready to pay high price to local bricks to continue their work without any disturbance and some are not ready to pay who left their work and wait till the price decrease.

Above table shows that 62.16% consumers are buying or ready to buy local brick in high price due to the emergency and due to many other reasons and 37.84% are not ready and wait for decreasing the price of local bricks.

**Table 4.5 (iii)**

**Reasons for buying in high price season**

Reason	Response	Percentage
Helplessness	27	67.5%
Good construction season	6	15%
No much price & fluctuation	0	-
Get good quality	0	-
Unknown to fluctuation	7	17.5%
Total	40	100%

Above table shows 67.5% people buy in high price due to helplessness they don't have other alternative because of their urgent need, 15% buy in this season because they have urgent need, as well as they think this season is the best for construction work. 17.5% buys it because they are ignorant to price fluctuation. Some consumers are also shifted to Chinese bricks due to high price.

**Table 4.5(iv)**

**Bargaining Acceptance**

Acceptance bargains	Response	Percentage
Yes	34	94.4%
No	2	36%
Total	36	100%

While buying the goods and materials consumers start to bargain. Some bargains are accepted by producers or sellers and provided it. In this

competition world to sell the product in market bargains are accepted by producers and seller.

According to the consumers they start to bargain on goods to received goods on reasonable price and also they really don't want to cheated them from seller. And some such kinds of consumers are also found who never bargain on price and pay the price of goods.

Table shows 94.4% consumers could bargain on the price of local brick and only 5.56% have found who paid fixed price.

**Table 4.5(v)**

**Bargaining range**

Range per 1000 pieces in rupees	Response	Percentage
Rs 50/1000 pieces	28	70%
Rs 50/100 pieces	-	-
More than Rs 100 to 1000 pieces	12	30%
Total	40	100%

Consumers asked to bargain Rs 50,100 and more than Rs 100 on per 1000 bricks. Consumer really want bargain to save the money which they can use on other building raw materials and also to make themselves safe from producer by getting bricks on reasonable price.

Above table shows while buying bricks 70% have bargained Rs 50 per 1000 pieces of local bricks 30% could bargain up to Rs 100 per 1000 pieces due to their closeness and being relative.

#### **4.5 (vi)**

##### **Reason for price fluctuation**

Reasons	Producers		Depot agencies	
	Response	Percentage	Response	Percentage
Due to demand	0	-	0	-
Need of capital	1	20%	6	60%
Investment cost	1	20%	3	30%
Seasonal production	3	60%	1	10%
Competition	0	-	0	-
Total	5	100%	10	100%

Above table shows all reasons contribute to price fluctuation to some extent but among half producer pointed out seasonal production as a main reason for fluctuation. In production season due to lots of stock and sales competition price decreases and price rises. Some producers see need of capital scarce of working capital in production season force them to sell their bricks in cheaper price and vice versa. Some of them reasons inventory, double loading and unloading charges as the main reason for fluctuation. Many factories keep inventories near to cities away from their factories to attract city consumers and to solve their transport difficulties in rainy seasons.

Among total depot agents 6 agencies thinks need of capital to produces during production period is the main reason for high price fluctuation. 3 think the main reason is inventory charges and think main reason is seasonal production.



**Table 4.5(vii)**

**Suggestions in pricing**

Suggestion	Response	Percentage
Fixed price	32	80%
Cheap	8	20%
Total	40	100%

Above table shows 80% have spoken about for irregularities in price, they want the price to be the same everywhere and the some for some span of time. 20% have commented on high brick price, high margin taken by suppliers.

In other's category we have few producers they said in production season producers sell its product at loss due to all other mentioned reason in the table and to overcome that producer chargers high in other season.

**4.6 The most effective promotional tool**

To get information about brick during collecting data one of the producers said that his grand parents time his grand father produced bricks. Sometimes he went to the construction site to get the brick producing contract and some times he was called by projects. Many people used to produce bricks themselves sold as required and some used to approach the clamp klin. His father also followed the same. People come by searching for the Smokey chimney, whenever they needed bricks or they learned about the brick dealer from people, who are building or using brick around them. But today, he (producer) give or use his visiting card or e-mail address to every one he get introduced and to his customers.

Now the world has become more developed, complex and competitive. People buy bricks through nearly depot agencies. They learn from yellow pages, internet, newspaper, sign boards. Almost every transport vehicle has

advertisement painted on their body about their construction material they supply. Some of the brick dealers are sponsoring traffic signal board for publicity. Especially brick producer do their contact with masons, engineers, depot agencies to sell their brick. Many of the producer have their own depot outlets and their sign board near by market. All these are promotional activities.

Therefore, we can say promotional practices have began for bricks in Kathmandu.

Actually, promotion is the element in organizations marketing mix that is used to inform and persude the market regarding the organizations products and services.

To find out the most effective promotional tool among those practiced and to advice other prospective promotional activities the following datas may give some of light.

**Table 4.6(i)**

**Knowing the location of the suppliers**

Medium	Response	Percentage
Advertisement	2	5%
By searching	14	35%
Through friends	16	40%
Personal contact	8	20%
If others	-	-
Total	40	100%

To know the location of the supplier consumers used their friends, search by themself and do personal contact. Especially they prefer their friends to get

the qualitative goods, some bargaining etc. some consumers search the producers by themselves to get the right one who is ready to fulfill his wants like providing quality brick, proper delivery on fixed time and place.

From the above table we can see 40% through their friend's advice, about 35% know about the brick supplier or counter by searching and 20% through personal contact and 5% followed the advertisement and find it to get brick.

**Table 4.6(ii)**

**Attractive to counter**

Reason	Response	Percentage
Publicity	20	50%
Searching	10	25%
Good quality	10	25%
Total	40	100%

There are different types of consumers are found in the market. They have their own views on getting the goods from the counter. Some consumers prefer goodwill, while some prefer quality, price and some due to unknown ness about product they started in searching different counter to get the one.

Here from the above table we see most are attracted to factory due to publicity that is 50% and rest of the percentage people are attracted due to good quality and searching for the best.

**Table 4.6 (iii)**

**Decisive point**

Decisive point	Response	Percentage
Sales promotion	14	35%
Personal sales	16	40%
Publicity	10	25%
Total	40	100%

In the competitive world consumers are too much aware on facilities, discount, advertisement etc. provided to them by producers. By keeping in mind producers used many sales promotion activities. Some producers prefer their personal sales without emphasis sales promotion and some depend on goodwill and publicity help to sale their bricks in the market.

Here, we found 40% consumer made buying decision due to good personal sales it means good behaviour and services as easy availability. Out of total response 35% bought it because they could get a cheaper price and credit and 25% brought it because of goodwill.

**Table 4.6 (iv)**

**Most effective promotional tool (consumers view)**

Tools	Response	Percentage
Advertisement	1	2.5%
Through friends	4	10%
Sales promotion	9	22.5%
Personal sales	8	20%
Publicity	18	45%
Total	40	100%

Like in other product there is no big role of advertisement in brick. Many

more consumers follow the path of publicity and goodwill and some who are unknown about publicity they choosed sales promotion and their friends as tools to get the goods.

We found publicity is the most effective promotional tool in case of brick sales, i.e 45% have brought due to it or like to buy due to sales promotion. Then come good personal contact 20% only 10% go through their friends advice and 2.5% are attracted by advertisement which is so much influencer in daily use products.

**Table 4.6 (v)**

**Difficulty in finding location of brick suppliers**

Knowing location	Response	Percentage
Already know	32	80%
Has to ask	8	20%
Total	40	100%

There are many factories and suppliers of brick in Kathmandu valley from a very long period. Through friends, relatives, advertisement, publicity, visiting cards consumers know the location of brick suppliers.

Some consumers are unknown about supplier and location being new in community.

Data shows only 80% of the consumers were unknown and had to ask about the brick suppliers location, 80% known the location.

**Table 4.6 (vi)**

**Most effective promotional tool (Depot agents)**

Tools	Response	Percentage
Advertisement	-	-
Sales promotion	2	20%
Personal sales	2	20%
Publicity	6	60%
Total	10	100%

Many effective promotional tools (advertisement sales promotion personal sales, publicity) are used by producers, supplier to sell their bricks to consumers. Among them according to depot the most effective promotion tool is publicity. Many consumers visit in their depot according to their publicity and they are ready to buy such a brick which already earned goodwill in the market. Some consumers who do not know about publicity they preferred personal selling method and sales promotion method.

From the above table 60% depot agents feel they could sell their product due to publicity. Only 20% feel because of sales promotion and personal sales i.e site visit and convincing them to buy their product.

**Table 4.6 (vii)**

**Most effective tool (producer)**

Tools	Response	Percentage
Advertisement	0	-
Sales promotion	1	20%
Personal sales	0	0
Publicity	3	80%
Total	4	100%

In the competitive market there are many suppliers and producers who sell brick. But it is not easy to sell their brick to consumers in absence of goodwill and publicity which is released by brick used (good consumed) consumer. Brick is such a material which is used to build the house and house is one of the such a basis need of human which saves their life from thieves, robbers, wild animals etc for their long life or to their future generation too. So in case of brick market advertisement and personal sales do not play important role according to the producers.

Incase of producer 80% of them think they could sell their product in this competitive market due to their goodwill and public relation, publicity. Only 20% preferred sales promotion.

#### **4.7 Role of depot agencies**

Just producing and piled up goods are not of any use in this modern world. It should be available in places where it is desired and when it is desired. Hence, place factor is another important element of marketing. Place covers the proper distribution transportation and placement of product and services.

Customer never waits therefore product and services should be kept ready before consumer/buyers arrive.

Here in Kathmandu, one has to order the brick few days preprior to their need, because bricks are not delivered on same days after their order.

It's been little easier since depot agencies of bricks are growing around the town. Now, customers don't have to go for searching for factories. Most of the depots are established by brick entrepreneur's relatives and friends and some by themselves and very few by other.

Brick depot plays a role of middlemen between consumers and producers. Depot gives a lot of benefits to consumer by keeping bricks of different brands which help consumer to select the product as per their wish, need etc. nearness is beneficial when buying less quantity. It helps producer to increase their goodwill and advertisement etc.

But we also hear lots of complaints like, depot takes away the big part of profit consumers unnecessary competition are arises due to it. Unhealthy competition has lead to cheating and bad activities decrease the goodwill of the producers.

To analyze all these and find the right answers and make a judgment about them, to take a good advantage from their positives aspect and try to eradicate negative points of the study had tried to gather some useful datas. Following table show

**Table 4.7 (i)**

**Promoting brick with other products**

Types of depot	Response	Percentage
Want brick, concrete etc in same depot	28	70%
Want only brick	12	30%
Total	40	100%

Time is precious. Today being a busy in life consumers want to purchase their household goods like (rice, pulses, vegetable) etc under one roof to save their time and energy. So, many such kinds of consumers who are going to build their houses they also want all the required materials needed for construction of houses like brick, cement, iron, concrete etc under one roof for the easiness and to get rid of moving from place to place. And one



more thing due to it consumers are able to save their time and minimize the expenses also.

Here we find most people 70% people prefer to buy brick, if depot is with other construction materials like sand concrete, iron etc. Therefore, this could be one of the effective sales promotion techniques. And only 30% people prefer to buy brick only.

#### **4.7.2 Delivery of brick**

Here in Kathmandu valley one has to order the brick few days prior to their need bricks are delivered few days of their order. After the order of brick it is not possible to get the delivery of brick on the same day due to the rule of government, transportation etc. According to the rule of government on the day time heavy loaded trucks are not allowed to use. To minimize this problem brick factory use mini tata and small tractors to deliver their goods on time.

**Table 4.7.2 (i)**

#### **Delivery of brick at the spot consumer wants**

Delivery	Response	Percentage
Got it	26	65%
Did not get	14	35%
Total	40	100%

To get the publicity increase goodwill and satisfy the consumer delivery of brick at the spot as consumer wants also play a very important role. To fulfill the wants of consumers is one of the successful score of suppliers. Providing good quality brick to consumer does not totally serve the consumers if the delivery is not done on proper spot as per the wish of consumers. But due to

narrow road, traffic jam, careless work of driver, suppliers are not able to deliver bricks on proper spot, on proper time.

From the above table we got 65% consumers got the delivery at the place or spot they want and 35% of the consumers did not get the brick delivery at the place they want.

#### **4.7.3 Differences in delivery and buying place**

While asking about the brick from showroom to delivery site the following comments are received.

**Table 4.7.3 (i)**

#### **Differences in delivery and buying place**

Difference	Response	Percentage
Quality	14	35%
Counting	2	5%
Higher percentage of broken brick mixed	6	15%
Found no difference	18	45%
Total	40	100%

Brick is a good which could not purchase directly by consumers from showroom. To get goods, ordered must be made and after one or two days it will be delivered by suppliers on the spot where consumer wants. In the study it is found that many consumers are satisfied by getting goods like same in showroom and some are dissatisfied due to change in quality, quantity and colour.

The above table shows that 45% of customers have not found any difference and they are too much satisfied for goods. 35% complained that supplier

cheated them on quality, 15% complained about more broken bricks, 5% complained on quantity.

**Table 4.7.3 (ii)**

**Delivery time**

Days	Response	Percentage
Same day	10	25%
Second day	26	65%
Third day	2	5%
More than 3 days	2	5%
More than a week	-	-
Total	40	100%

Delivery of goods on time plays a very important role in the marketing of brick. When the bricks are already counted drivers as well as trucks are in good condition, delivery is done on the same day. If driver is new, unknown about places, bricks are not totally counted or due to other internal problem goods are delivered on second, third day and some time more than third days.

Here only 25% found the delivery immediately. Most brick suppliers (65%) took 2 days to deliver. Also many consumers found it really difficult to get the brick at right time. 5% of the responded said that they get their delivery after third day and 5% responded said that they get delivery more than 3 days after their ordering day.

**4.7.4 Percentage of broken brick mixed in delivery time.**

From many consumers we heard the complaints on broken brick during delivery time. Broke bricks are arises during load an unload of brick from vehicle, during production and shifting from one place to another.

We also found some consumers who are satisfy with the piece of broken bricks that they received during delivery time because broken bricks are also required during building the walls, flooring etc.

Following table shows about the amount of broken bricks during delivered.

**Table 4.7.4 (i)**

**Number of broken bricks delivered**

Number	Response	Percentage
Up to 20%	29	72.5%
Up to 50%	10	25%
Almost double	1	2.5%
More than double	-	-
Total	40	100%

Above table shows that 72.5 % consumer got up to 20% broken piece of brick and 25% got more than 50% and only 2.5% said almost double.

In real, suppliers really don't want to get any bad complaints from their consumer on their product. But to minimize their loss and by thinking some broken pieces are required in construction period they send few or up to 50% broken piece on 1000 pieces.

**Table 4.7.4 (ii)**

**Use of broken bricks**

Use	Response	Percentage
Useful	34	85%
Waste	6	15%
Total	40	100%

For 15% consumer broken pieces gone wasted out of use. During load and unload of bricks in factory and production period some broken bricks are arises. Broken bricks are used by mason during construction of wall, and flooring. In the absence of broken pieces mason broke the fine brick. So, if consumers are aware during construction and request mason to use broken bricks instead of breaking fine brick there will be no chance of waste of broken brick.

**Table 4.8 (i)**

**Impact of depot agencies on consumers**

Experience	Comment out of 40 respondent	Percentage
Mostly good (Positive)	36	90
Mostly bad (Negative)	25	62.5
Depot makes cheap	28	70
Gives varieties	40	100
Near facility	40	100
Cheap if less quantity	18	45
Helps choosing	36	90
Extra facilities	36	90
Will buy in factory	28	70
Depot make expensive	39	97.5
Depot cheats	20	50
Depot makes city dirty	22	55
Depot decreases quality	24	60
Depot is not trustful	16	40
Can't chose right lot at depot	20	50

From the above table 100% of the consumers found depots are more useful and gives the facilities of varieties and nearness. About 97.5% of the consumers complain depot makes brick expensive. 90% consumers shows their positive responded on extra facilities provided by depot agencies to consumers to choosed the bricks as per their choices. About 70% consumers responded that depot helps consumers by providing goods on cheap price and save 70% responded it's better to buy bricks from factory directly than

depots. From 60% to 40% consumers complains that depots cheats, makes city dirty, decrease quality of bricks and depot is not trustful.

**Table 4.8 (ii)**

**Impact of depot on producers**

Experience	Comment out of 5 respondent	Percentage
Depot help to know demand to producers	3	60%
Depot help reach consumes	5	100%
Depot help on Capital Investment	3	60%
Depot help increase goodwill of product	4	80%
Depot decrease inventory cost	2	40%
Depot take away producers profit	4	80%
Consumer had to pay additional commission	5	100%
Depots give extra facilities	1	20%
Depots pulls producer's client	4	80%
Depots help reach consumer	5	100%
Depot cheats	5	100%
Makes city dirty	2	40%
Mostly bad (Negative)	4	80%
Mostly good (positive)	1	20%
Depot saves from bad debt	2	40%
Creates unnecessary competition	4	80%

From the above table we see 100% of the producer accepts depot agencies

helping producer reaching customers. About 80% producer believes that depots help to increase goodwill of their products and 60% producers accepts depot agencies help to know the demand to producers, help to capital investment and 40% depot decrease the inventory cost of producers and save producer believes that depots give extra facilities to consumer. 80% producers think depot agents are taking part of their profit and creates unnecessary competition 100% of them feel consumer paying extra because of them 80% think depot agents damaging their goodwill 100% of them think depot agents cheats consumers and producers. 40% producers thinks that depots makes city dirty due to all above reasons producers think they don't want them.

#### **4.9. Difficult part of business**

While asking about the most difficult part of the brick factory in response it was found that due to smoke, dust particles from klin affected a lot to the people living about there.

To established brick factory about 100 ropani or more than 100 ropani field is required which is not found in this crowed city. So producer choose village side especially in Bhaktapur and Lalitpur. Being a poor and under developed country many more people in our country still based on agriculture. Smoke dust particle of kilns effect a lot to the farmers whose field are near to the factory. Because of this reason, there is always unfriendly behavior between farmers (whose field are near to brick factory) and brick producers. Smoke pollution hampers a lot on crops. It decreases the capacity of good soil and short the crops production.

Other main problem is scarcity of coal. Many more brick factories are closed down due to it.



**Table no 4.9 (i)**

**Difficult part of the business**

Reason	Response	Percentage
Non-availability of raw materials	5/5	100%
Technology	3/5	60%
Finance	1/5	20%
Marketing	-	-
Strict Government rules and regulation	1/5	20%
Total	5	100%

The above table shows that 100% producers agree with non-availability of raw materials required for brick production. Coal is the basic fuel used in all brick industry; wood, rice husks, etc. are also used as raw material for firing purpose while coal is the best one. Now, a day due to the scarcity of it many factories are closed down.

Lack of proper technology still brick and industries are based on traditional method of producing brick. So, 60% producers said lack of proper technology is also one of the most difficult parts of their business.

20% producers said finance and 20% responded strict government rules and regulation also affects a lot to business.

**4.10 Suggestions to solve:-**

To solve all above difficulties producers want government rule to be improved and increased in helping them to produce goods of standard quality product bring pollution less technology and good service.

**Table 4.11(i)**

**Cut throat competition**

Answer	Response	Percentage
Yes	4	80%
No	1	20%

Cut-throat competition is a challenge of business which is accepted by all producers/ suppliers to stay in the market. In the absence of competition, consumers are really not able to get quality goods.

Above table shows that 80% of producers are saying there is competition between producers and 20% said no more competition.

**4.12 Competent to prevent brick factory's pollution**

All 5 producers said that they tried a lot from their side to minimize the pollution. Due to lack of proper and advanced technology they are still not able to apply any systematic method. To reduce smoke pollution they increase the length of chimney.

**4.13 Cost- benefit Analysis**

It was not possible to get information on cost-benefit analysis from the producers.

**4.14 Social responsibility**

As modern marketing concept all the institutions should give attention on social responsibility. The study tried to find out how much contribution brick producers are giving on social welfare, as it is the most important part of the organization. In this connection, the following table may help us for clear ideas of the respondents, acquired during research period.

**Table 4.14 (i)**

**Contribution on Social welfare**

Given contribution	Consumers		Depot agents		producers	
	Response	Percentage	Response	Percentage	Response	percentage
Yes	25	62.5%	8	80%	5	100%
No	4	10	1	10%		
Don't know	6	15	1	10%		
To control pollution	5	12.5				
Total	40	100%	10	100%	5	100%

Among all consumers about 62.5% have seen brick factories donating needy people, helping in construction industry, seasonal employment to very poor people etc. Among producers 100% of them say they are doing social work, donating, helping specially locality in every field some producers say they can't survive without helping locality in every field some producers say they can't survive without helping locality and any Nepali needy person or organization coming to them.

In construction industry seasonal employment to very poor people etc. 10% have not seen any contribution. 15% says they don't know 12.5 of them say producers must realize their responsibilities regarding environment decreasing pollution.

Among depot agents 80% of them say yes they are helping donating around, 10% say producers don't know.

Our approach should relate marketing to the standard or goals of society as a whole. Marketing and goals of society.

- To provide an adequate standard of living for its citizens.
- To add to economic stability.
- To maintain as much freedom as possible in all aspect of life.

Most of their standard of living is equated in terms of dollars of income per capital. In general these countries with a high average income per capital have less of a disparity in income among their citizens. It is impossible to identify exactly an 'adequate' standard of living, but probably it would be specified ad enough to provide a healthy diet a comfortable shelter a reasonable education and a measure of the "better things in life. However, they may be identified in the society in question". Here who comes pollution free environment, donation charities to poor and needy, deprived people, social welfare are also a responsibility of the producer and suppliers and it is also a means of earning goodwill and attracting the consumers.

#### **4.15 Employment generation**

This industry is giving work for Nepali & Indian labourer for their bread & butter (employment).Brick industry is providing employment to uneducated rural masses, paying taxes and manufacturing cheap building materials.

To the last open question, what is your suggestion for brick marketing? The answer is presented on the following table.

**Table 4.16****Advice on brick marketing**

Advice	Consumers		Depot agents		producers	
	Response	Percentage	Response	percentage	Response	percentage
Reduce Pollution	7	12.28%	0	-	1/5	20%
Should be organized & responsible	24	42.10%	2	20%	2/5	40%
Quality should be improved	14	24.56%	2	20%	1	20%
Have marketing spirit	8	14.04%	0		1/5	20%
Government monitoring/help	4	7.02%	6	60%	5/5	100%
Total	57	100%	10	100%	5	100%

Here, in the table we see that 42% of the consumers advised to keep brick marketing well organized regulated and more responsible for its behavior and transactions. 25% of them have advised to improve quality of brick and transactions. 25% of them have advised to improve quality of brick and 14% have suggested creating marketing spirit good consumers type of service they want. Consumers complaints they don't get the required type of brick and service they want even though they are ready to pay any price dealers want. 7% of them want the government to improve its role to control monitor and guide brick dealers. Among depot agents 60% of them want government help fare in their business, to control, standard size regulate,

monitor brick quality and business. Most of them are tired of unhealthy competition and worried about trustless environment prevailing in brick business. They also want government cooperation and help to improve their business like in transportation ,tax and other possible govt.facilities.20%of them realize the bad maintained in factories and government monitoring them.25%have advised to be organized and responsible brick dealers.

40%of the producers too want the government's role to improve the brick business. They want clear and practical policy, easy licensing, help to get new pollution less technology and improving and developing the brick industry. They want good security, encouragement, training.40%of them want organized and responsible brick dealers, who will be regulated.20%of them also suggested brick dealers to have marketing sprite not only to dealer but also to consumer to consume good quality of bricks form good people with reasonable price.20%of them realized their failure to improve the quality of brick due to dependency on Indian technician in the factories and lack of knowledge.

## Chapter 5

### SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

#### 5.1 Summary

Brick happens to be the world's oldest and the most extensively used structural clay product. In fact, brick making is the world oldest 'industry' in the history of mankind. It is reported that hand shaped and sun dried mud bricks were made and used during the pre pottery Neolithic period as back as 10,000 B.C. Use of mould box-shaped, sun-dried and fired bricks started only around 3,000 B.C. Since then, structural clay products have made great strides with respect to scale/efficiency of operation and quality of finished goods.

From the very beginning of the human civilization place of living has been one of the needs. Brick has been most commonly used as construction material. If we turn the history of brick we have found that it was manufactured before 5,000 thousand years in Iraq, Pakistan etc. Firstly they used sun dried brick later they learn to produce brick by baking clay about four thousand years ago. In, Nepal we can trace bricks dating back about two thousand years, in our historical monuments. Manufacturing of brick has been done by individuals in private enterprise for example Awales in Kathmandu valley until 2025 Bikram Sambat. Brick used to be produced according to need.

In kathmandu, valley usually brick is used in almost all the buildings. Chinese bricks are just used for facing. The standard brick size is (240 x 115x57) mm given by Nepal National building code NBC 205. Brick can be

classified according to quality, decoration, place of origin, method of manufacturing, uses, colour, types, variety and content. Brick making procedure is science as well as little bit of art. In Kathmandu valley, mostly brick production is done by academically not so advanced people with agricultural background, and few graduates. Marketing spirit is low in brick business. We hardly find marketing awareness in general brick producers are not been able to address the weaknesses example regarding quality, consumer's choice, promotion, advertising, publicity, price regulation, well managed depot agencies etc.

The research is done basically exploratory. Questionnaire with some open ended questions were designed addressing the above mentioned problems and they were distributed in different factories, depot randomly and collected the opinion from consumers depot agents and producers. The research found all three categories giving almost same view. During the research period three categories of people are concerned about the low quality of local brick, poorly organized haphazard irresponsible brick industry.

The study shows consumers first prefer to check colour of brick.. If it is reddish they take it as good and strong. Local brick has been preferred then Chinese brick because it can be stronger with cement plaster cover, can be coloured, has availability and its cheapness. Most of them know about big seasonal price fluctuation and most of them seem helpless about it. Publicity was found to be most effective and promotional tool. Out of total respondants fifty percent consumers facing trouble by late deliveries. Depot agents as middle man are increasing in numbers every year in comparison to negligible growth of factories. Majority of the consumers are benefiting from them. Most consumers are willing to compromise on good quality and nearly service for extra price charged by depot agencies. Majority of the



consumers are positive about brick industry in Kathmandu valley even though they find lack of marketing sprit. Therefore, there is big scope for marketing in brick industry in Kathmandu valley.

## **5.2 Conclusions & Recommendation**

Brick is one of the most important construction materials from the very beginning of the human civilization. It plays a very important role in general people's life for the construction of their houses as well as it is also one of the main source of income as the government is able to collect different taxes and it also helps general people to get employment opportunities to improve their living standard.

Having advantages, there are lots of problems regarding local brick industry in Kathmandu valley and large scope for improving it.

The conclusion and findings of the study are given below according to the field based research activities. :-

- With the help of the study it has been known that there are two kinds of consumers visited in depot agencies and factories. Among them 72.5% consumers going of brick factories or depot agencies for buying local bricks for personal use to built the houses for shelter purpose. Only 27.5% responded in favor of contract work. They visited in factories or in depot agencies to buy bricks for the purpose of contract work to build bridges, colonies, public walls etc.
- The main reason for choosing local brick for the construction is everybody use it. Brick is only alternative for construction and since the begining civilization period it has been using to build houses. Out of the total buyers 60% of the buyers responsed that they choose local bricks

because everybody used it and it is cheaper than Chinese brick, more stronger, strength with cement plaster cover.

- In compare, local bricks are strength with cement plaster cover, cheapness and easily available than Chinese bricks so it is the main reason for buying local brick against Chinese brick

- Most of the consumers want improvement in quality of brick regarding colour strength mostly in reddish colour.

- Out of the total respondents 80% of the consumers knew about the high price fluctuation of local brick. Reason for purchase of local bricks in this period is due to their helplessness position, don't have other alternative to fulfill urgent need and lack of trust against dealer. Only 8 responses are unaware of the price fluctuation.

- Out of the total respondents 62.16% consumers are buying bricks in high price due emergency, and good reason for construction.

- Out of the total respondents 67.5% are buying bricks in high price due to helplessness, having no other alternatives.

- Out of the total consumers 94.4% consumers could bargain in brick price, usually in the range of rupees 50 to 100 per thousand number of brick.

- Main reason for price fluctuation is due to the need of working capital, investment cost and seasonal production.

- The whole consumers are unsatisfied with the uncertain range of price fluctuation. They all want fixed sort of price.

- On the most effective promotional tool out of total respondents 40% consumers responded that they knew about brick dealers location from their friends. 35% goes themselves for searching, 20% through personal contact and only 5% benefited from advertisement to locate the producers or to get brick.

- Among consumers about 50% are attracted to brick dealer from publicity, goodwill, and best services. But the decisive point to buy the

brick is determined specially by sellers attitude and convincing power and his good services, credit facilities, discounts etc.

- According to the view of consumers most effective promotional tool are publicity and sales promotion.

- According to the depot agencies and producers publicity and sales promotion are the effective promotional tool.

- About 70% of the consumers want brick promoted with sand, concrete, iron rod etc building materials at the same place or counter.

- Out of total, 35% of the consumers are not satisfied for not getting brick delivered at the spot they wanted.

- During the research, 45% of the consumers have not found any differences on delivered bricks as shown in showroom. But 35% complained on quality.

- About 65% of consumers get the brick only on second day from their order and 50% get it after more than three days later.

- During delivery of brick about 72.5% consumers found up to 20% broken bricks. Consumers suggested to the producer to minimize and control on broken pieces of bricks during delivery to maintain their goodwill and publicity.

- There is positive attitude towards depot through consumers. Many consumers are enjoying the facilities like near facility, varieties, and help in choosing right type of brick even they realize depot make brick expensive and are not must trustful.

- Producers really don't want depot even they contribute the help to consumers to get the bricks easily & helps with capital. All 100% producers complained depot agent took away a big part of profit, create unnecessary competition, they cheat and destroys the goodwill of factories and producers.

- Producers should sale bricks by their own efforts, own depot.

- The major difficult part of business is non availability of raw materials. To carry on this factory more than 100 ropanies field is required to hire and producers are not allowed to use all the soil from that field. After the certain percentage they have to leave such field to farmers or the owner of the field for the production of crops.
- Lack of technology is also other difficult part of business. Till today's due to lack of technologies producers are not able to use advanced technique to minimize pollution and other way of production of brick.
- Out of the total 40% of the producers want government role to improve brick business. Producers want clear policy, easy licensing, help to install pollution less technology good security and encouragement.
- Among consumers about 62.5% have seen brick factories are donating needy people, becoming helping hands to the construction industry etc.
- Among producers 100% of them said that they are providing seasonal employment to the needy people, which is an important task of the brick industry. Beyond this, they help to the development of the nation.

### **5.3 Recommendations**

Our country Nepal is one of the country in the world. There is lots of scope in every field for moving forward and as a result our country is achieving progress in every field. So, there is also a lot of scope to move forward local brick marketing.

- Since most brick customers are users themselves not the contractors therefore their will be large concern about quality of the brick. Therefore, producers should concentrate on good quality of brick rather than just price. Fact that more than 60% accompanying the experience of brick buying also suggests the good quality.
- Dark reddish colour is taken as well baked brick with good qualities, easily convincing. This is true to some extent as well. Therefore, to increase sales, producers have to fire their brick well to dark reddish colour, then concentrate on good finishing smoothness, clean edges and standard size (bigger than usual) classification in A, B, C like in Tarai.
- Classification of brick is possible since there are people who want cheap brick, people who are satisfied with present class and some consumers who are willing to pay any price for good quality of brick. Promoters should classify and divide brick into different classes.
- Brick producers should organize and convince the government to cooperate for licencing, easy financing, security, good regulations in raw material and labour cost which will help decrease high fluctuation in price and earn goodwill for brick industry.
- Publicity and good will should be gained by supplying good quality of brick doing social works and product service facilities like timely delivery, cordial behavior etc to gain bigger market.
- Brick should be promoted with concrete, sand, cement, rod etc.

- Use of poor quality brick in the valley might prove costly in an earthquake prone place like Kathmandu. Therefore, bricks should be produced to standard set.
- Since there is very less advertisement regarding brick. About 30% consumers are unknown to brick selling counters. Therefore, advertisement may help in sales and also can be proved as publicity stunt.
- Try to deliver the brick at the spot consumer wants and try to maintain the standard of brick at delivery site regarding quality counting, breakage to attract more customers.
- Concentrate on delivering brick as quickly as possible for gaining market because most are lacking in this job.
- Increase depot outlets in organized way in proper places to serve the consumer better, there is a good scope.
- Government has to release clear practical rule and regulations and policies to regulate manage brick industry and help them go into new pollution less technologies.
- Development and dissemination of appropriate in expensive method for proper clay preparation, fast and uniform moulding and most important of all maximum efficiency is required. Government should encourage a good deal of research and provide necessary assistance to improve brick industry in Nepal.

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## Questionnaire for Consumer

**Please tick in box on the right answer to a question to help to develop the good quality of brick as you deserve:-**

**Name and address .....**

**Date: ..... Phone No .....**

**1) What is your purpose of buying local brick?**

**i) Personal use**

**ii) Contract work**

**2) Why do you choose brick instead of cement block, stones metal, wood, plastic products?**

**i) Its cheap**

**ii) Stronger**

**iii) Everybody use it**

**iv) Don't know other alternatives**

**v) Write if any other.**

**3) Why do you select local brick against Chinese brick?**

- i) Easily available**
- ii) Stronger with plaster**
- iii) Due to cheapness**
- iv) Can be coloured**
- v) Write if any other**

**4) Do you have any suggestion regarding brick?**

.....  
.....

**5) Do you know seasonal fluctuation of brick price?**

- i) Yes**
- ii) No**

**6) Is there begaining in price yes no if yes what is the limit?**

- i) To Rs 50/1000 piece**
- ii) Rs 50 to 100**
- iii) More than Rs 100**

**7) Do you have any suggestion regarding price?**

.....  
.....

**8) How did you know about brick counter?**

- i) Advertisement**
- ii) Through friends**
- iii) By searching**
- iv) If others**

**9) Which day you get the delivery of brick after order?**

- i) Same day**
- ii) Second day**
- iii) Third day**
- iv) More than 3 days**

**10) Any difference in brick from showroom to delivery site? Yes No if yes what difference**

- i) Quality**
- ii) Counting**
- iii) Higher percentage of broken brick mixed**

**11) Percentage of broken brick mixed in delivery time.**

- i) Up to 50%**
- ii) Almost double (up to 100%)**
- iii) More than double (more than 100%)**

**12) Does Brick producer/seller contribute in social welfare?**

- i) Yes**
- ii) No**

**13) Do you think that quality of brick is satisfactory?**

**i) Yes**     

**ii) No**     

**14) Any idea about the advertisement of brick factory?**

**i) Yes**     

**ii) No**     

**15) Do you have any problem with the brick factory?**

**i) Yes**     

**ii) No**     

**iii) No idea**     

**16) If, yes, what type of problems (Environmental) facing now?**

.....  
.....

**17) Suggestion, if you have any to the brick factory owners?**

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## Questionnaire for Producers

Please tick in box on the right answer to a question to help to develop the good quality of brick as you deserve:-

Name and address .....

Date: ..... Phone No .....

1) What is the reason for price fluctuation?

i) Ratio of demand and supply

ii) Inventory cost

iii) Seasonal Production

iv) Competition

v) If other .....

2) Which is the most effective promotional tool used?

i) Advertising

ii) Sales promotion

iii) Personal sales

iv) Publicity

3) What do you think about depot agencies?

.....

.....

**4) Do brick producers contributing in Social welfare?**

i) Yes

ii) No

**5) If yes, what types of Social welfare?**

.....  
.....

**6) Do you have any delivery problem?**

i) Yes

ii) No

iii) If yes, what types of problem? .....

**7) Which is the most difficult part of your business?**

i) Non-availability of raw materials

ii) Technology

iii) Finance

iv) Marketing

v) Strict Government rules and regulations

vi) Others (if any) .....

**8) How it can be solved? Give suggestions.**

.....  
.....

**9) Is there cut-throat competition in this sector?**

**i) Yes**

**ii) No**

**10) Are you competent to prevent brick factory's pollution?**

**i) Yes**

**ii) No**

**11) What major steps have taken for avoiding pollution?**

.....  
.....

**12) Do you have any idea on cost benefit analysis? If yes, how it is calculated?(Per thousand bricks)**

- i) Cost of raw materials .....**
- ii) Cost of equipments (Soil) .....**
- iii) Labour .....**
- iv) Interest .....**
- v) Electricity, fuel(coal,wood) .....**
- vi) Advertisement .....**
- vii) Selling price (Rs..... per thousand)**



**13) Brick industry needs any support from the Government?**

**i) Yes**     

**ii) No**     

**14) What types of support requires?**

.....  
.....

**15) Do you have credit transactions or cash?**

**i) Cash**     

**ii) Credit**     

**iii) Both**     

**16) What are the problems of credit transactions?**

.....  
.....

**17) Compared to gone days, are Customers conscious on quality price?**

.....  
.....

**18) Suggestions for producer in marketing?**

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