

# CHAPTER - I

## INTRODUCTION

### 1.1 Introduction of the Title

Nepal is a land-locked buffer state between two giant neighbors India and China. It is endowed with varieties of medicinal plants from high Himalayas to low belts of Terai region. Bamboo is also an herbal plant as well industrial plant which is very important in our daily life mostly found in Nepal.

Bamboo is the most important grass and medicine too. Economic development will be sustainable if industrialization takes place based on the indigenous resources. If due efforts are not made to make the best utilization of what we have, only the slogan of “the need for modernization and industrialization” does not help lessen the poverty in the country.

Bamboo is a kind of tree-like grass, which grows to a large size in the warmer parts of Asia and America. The bamboos are a group of woody perennial evergreen (except for certain temperate species) plants (kingdom plantae) in the true grass family Poaceae, subfamily Bambusoideae, tribe Bambuseae. Some are giant bamboos, the largest members of the grass family. Bamboos are the fastest growing woody plants in the world. They are of economic and high cultural significance in East Asia and South East Asia where they are used extensively in gardens, as a building material, and as a food source (Wikipedia).

Some kinds are at least eighty feet high. It is used for a great variety of purposes, such as house building, ship masts, furniture, spear-shafts, ornaments, art and crafts, food for animals and walking sticks. As the stem is hollow and very strong, it is also used for water pipes. In some varieties a sweet juice is found, which in India is used for cooking. Mostly in Nepal, it is used for handicrafts, agricultural purposes (grass for animals, shoots as food (tama), fencing fields, giving supports for crawling plants) and housing (to support jastapata and steel). Besides, bamboo is used during some religious and cultural functioning, including marriage and bratabanda, for fuel and even for carrying the dead body for funeral.

## **1.2 Background of the Study**

Nepal is an independent nation with the population of 28,287,147 (July 2006 est.) with a growth 2.7% (2005 est.) per annum. About 48.6% of total population is literate in Nepal; of which male percentage consist of 62.7% and female 34.9%. About 38% of the total GDP of Nepal is based on agriculture, 21% on industry and 41% on services. Agriculture is the mainstay of the economy, providing a livelihood for three-fourths of the population and accounting for 38% of GDP. Industrial activity mainly involves the processing of agricultural produce; including jute, sugarcane, tobacco, and grain.

Nepal is bounded by longitude 80" to 88" east and latitude 26" to 30" north. The latitude ranges from 60 meters to 8848 meters above sea level. The area of country is 1,47,181 sq. km. and its length is 885 km from east to west, but its width is not uniform, 193 km. mean width north to south having two thirds of the country covered by hills and mountains. A study in 2003 assumes that the total length of roads in Nepal is 15,905 km of which 8,573 km is paved and 7,332 km is unpaved (Joshi, 2007:1).

Being an agricultural country, Nepal produces many products and this dissertation focuses on bamboo. As bamboo isn't a seasonal plant, we will find them throughout the year, mainly in mountainous area.

Bamboos in Nepal are generally classified into two types as bans and nigalo. Bamboo has been intimately associated with human beings since ancient times. People make practically everything and anything from bamboo. Every part of it has its own significance and can be used for various household and commercial purposes. Hence, bamboo is an important component of overall livelihood strategies of rural households.

Bamboo has a high score in terms of economy. It is described as the 'wood of the poor' (India), 'friend of the people' (China) and 'brother' (Vietnam) (Poudyal and Das, 2002 and Das, 2004). It is considered as an important component of livelihood strategies of rural households. The importance of bamboo in several major economic sectors such as construction, agriculture and handicrafts, micro enterprises,

transportation, can hardly be overemphasized (Stapleton, 1994). Bamboo also forms an ideal raw material for many industries like bamboo furniture, paper and pulp, textiles (rayon).

Bamboo is an environmentally friendly plant, producing more than 35% more oxygen than trees and absorbing as much as 12 tons of carbon dioxide per hectare annually (<http://www.inbar.int>). The dense structure of its root system makes it the best species for soil stabilization, thus protecting against erosion and landslides. Bamboos in combination with those tree species with deep penetrating roots are now considered as an important component of bioengineering techniques in Nepal, assessing an obligate application of a low cost means of slope stabilization and useful products as well.

Bamboo is a viable economic alternative to deforestation so that biodiversity and their other possible benefits can be conserved. The extensive consumption of wood from forests leaves them empty raising a need to be covered and protected. Bamboo serves an ideal plant specimen for this purpose. However, this high-strength woody perennial with many of its characters similar to trees, do not just act as a timber substitute but fulfill the demand of the very large, conventional wood-based industry as well. A large range of innovative items, previously manufactured from wood, is now being made from bamboo, and the list is rapidly increasing.

Another major advantage of bamboo is that, as a source of fuel, it is a significant material. Bamboo charcoal, which is generally used by goldsmiths are also used for water filtering and purification plants in several countries like China, Japan and South Korea (Shibata, 1988). It can also be used in electric batteries, while in special purpose electric lamps; bamboo is used as carbonized filaments.

Women are heavily involved in forest-based small-scale enterprises (FBSEs) in many developing countries (FAO, 1990). This is because bamboo-based products, such as woven products and incense-sticks easily fit within the average daily schedule of women. Such bamboo craft making has provided off-time and part time employment for women of rural communities. Most of the families with bamboo-based business have a strong family orientation. This helps in strengthening the social bond and at the same time, it also gives a platform for children, the possible enterprises to learn a trade to earn their living in the future (Karki *et al.*, 1999).

This conversion of socio-cultural traditions and indigenous knowledge into economic opportunity has a dual advantage. It helps preserve culture that are rapidly diminishing in today's context due to globalization and cultural homogenization of people, while in other way, it accounts high for reconciling the need of millions of job. Bamboo-based trades can create an enormous number of jobs for the poor and illiterates, as the business does not need higher levels of education.

There is a growing demand of bamboo and its products not only in the urban centers but also in the rural areas of Nepal.

Ninety percent of the Nepalese labor force is rural based, and they practice subsistence agriculture (Sharma, 1989; Amatya and Newman, 1993). It is estimated that about 3.3 million farming families are somehow involved with the bamboo sub-sector either as producers or as users of bamboo-based products (Pant, 2006). Development and encouragement of cottage industries based on bamboo have thus, a very high potential of providing the locals with much needed cash income and making a very important contribution to their household economy (Poudyal, 1992; Karki *et al.*, 1995; Sherchan *et al.*, 1996). Further, it can contribute much more to the regional and national economy.

Despite Nepal's geographical and cultural richness of bamboo, due to governments indifference, lack of support for subsistence farmers, disorganized market, limited skills, bamboo based economy only contributes 1-2% to the national GDP (Karki *et al.*, 1998).

Although statistics on the actual economic contribution of bamboo is not available, bamboos those are harvested from natural forests and from farmlands make significant contribution in household economy of many communities. It has been estimated that the total growing stock of bamboo in Nepal is around 15 million cubic meters with an approximate biomass value of 1060 metric tons ([www.inbar.int/country-report/ Nepal](http://www.inbar.int/country-report/Nepal)).

Bamboos play a major role in the rural economy and in sustaining livelihood. This group of plant species reaches its structural maturity in three years. Once established, it produces an annual crop for many years. Due to its fast growing rate, versatility in

producing a wide range of items and possessing all the qualities similar to trees, yet available in cheap cost rate put this renewable resource in a great demand by bamboo-based small enterprises.

### 1.2.1 Study Area Selection (Kirtipur Municipality)

The area taken for research is Katmandu district, in the Central Region of Nepal. The study has been focused in the above area based on MC size, population and marketers. Most importantly, bamboo marketing and its markets are focused inside the Valley. Kirtipur MC (ward no 8) is chosen as field observation only for number of bamboo sold in each year. In this Kirtipur MC ward no 8; especially farmers are using bamboo as cash crops. But in some areas, they are thinking it as bush only, not utilizing too. Due to the demand of bamboo, customers are visiting place to place, similar to this place. Thus farmers are getting opportunity to sell bamboo at high price.



Certain Area of Kirtipur MC-8

### 1.2.2 Marketing

The Oxford dictionary defines marketing as “**The act or process of buying and selling in a market.**” Or “**The commercial functions involved in transferring goods from producer to consumer.**” But marketing is considered to be the beating heart of any business organization. This is the age of marketing. Marketing includes sales, but encompasses much more. It is fundamental to the successful creation, distribution, promotion, and pricing of goods, services and ideas in all business and non-profit organizations. As business has evolved, marketing has changed from a selling orientation to a broader customer orientation.

Today, marketing is more and more focused on the development and implementation of competitive strategies ("game plans"). It is the marketer's responsibility to understand changes in customer needs and to get the right products to the market at the right time. The survival of companies depends on it. Marketing is an activity. Marketing activities and strategies result in making products available that satisfy customers while making profits for the companies that offer those products. Marketing delivers the strategic and tactical bridge between a company and its markets and customers. It makes the tactical job of selling very efficient and effective.

According to 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 satisfy individual and organizational objectives."

According to Prof. Philip Kotler, "Marketing is a social and managerial process by which individuals and groups obtain what they need and want through creating, offering and exchanging products of value with others."

Another Scholar Prof. William J. Stanton defines marketing as "A total system of business activities designed to plan, price, promote, and distribute want satisfying products to target markets to achieve organizational objectives."

The main focus is being on consumer need satisfaction as well as marketer's profit. "Business success is not determined by the producer but by the customer." - Peter Drucker

According to Prof. Philip Kotler, "It is no longer enough to satisfy customers. You must delight them."

### **1.2.3 Marketing of Bamboo**

This thesis is based upon the marketing of bamboo to Katmandu Valley from Kirtipur MC-8. The research in this topic is relevant as bamboo is going to be diminished as unused materials. The study focuses on bamboo marketing in Katmandu district.

### **1.3 Statement of the Problems**

The processing and commercial marketing of bamboo provides employment to many people and helps to boost the national economy.

The study of the woody perennials, bamboos open a dynamic path to improve the socio-economic condition of poor and rural inhabitants, thus leading to sustainable development. This multi-purpose species is used increasingly to earn the living. Certain villages in Nepal are involved in manufacturing woven products, while few even in producing authentic, higher value products (Das 1998). Several ethnic groups, especially those who are socially and economically underprivileged are dependent upon bamboo-craft making to sustain their livelihood. For them, it is the main source of family income, while for others it is a good source of off-the-farm and part-time income. Bamboo products produced by these craftsmen are sold in the local markets, as well as some have a good international market. No modern technologies have been introduced in this sector so far. Almost all the aspects, like production, processing and manufacturing of various items and marketing of products (both raw and processed) are in need of prioritization for development. There is lack of knowledge among producer's not just about marketing prospects of their products, but also about bamboo cultivation, its harvesting, fertilization, shoot protection, soil conditioning and weeding, thinning and pest control. Above facts suggest that the degrading condition of bamboo stands in the country is mainly because of excessive and unmanaged use and lack of basic knowledge about its regeneration. People are unaware of the importance of bamboo cultivation and its potential benefits other than economics.

No proper attention is given to the conservation of bamboo species. Nepal has established national parks and conservation areas in sub-tropical, temperate and alpine eco-geographic zones. These national parks and conservation areas cover 17% of the country's geographical area and fortunately, many of these national parks have some bamboo species being conserved. As such, there is no project focusing specifically on the conservation of bio-diversity of bamboo (Joshi and Amatya, 1999).

So far, only few studies have been carried out in the country regarding bamboo and its

perspectives. Taxonomically, a lot of work has to be done for the accurate identification of different bamboo species in Nepal, their distribution and uses. But I am focusing on only marketing of bamboo.

#### **1.4 Objectives of the Study**

The main objective of the study is to analyze, examine and interpret various aspects involved in bamboo business and its processing in Nepal in order to find out the number of employed persons and constraints that the market is facing at present.

The specific objectives are as follows:

- i. To study the present status of Kirtipur-8 area in terms of commercial marketing of bamboo
- ii. To find out the growing market demand of bamboo
- iii. To find out employment opportunities catered on bamboo

#### **Research Questions**

The Researcher aims to answer the following questions

- i. What are the prospects of bamboo business in Nepal?
- ii. How is bamboo processed to market?
- iii. When is the best time for seasonal collection of bamboo?
- iv. How many people are employed in processing of bamboo to market?
- v. Who will be directly /indirectly benefited from the bamboo?

#### **1.5 Justification of the Study**

Although, bamboos have been playing an important role, a systematic inventory of bamboos and their ethno-botany countrywide have not yet been done. No detailed studies have been conducted on the socioeconomics of bamboos other than in Eastern Nepal. The studies need to be expanded in Central and Western regions of Nepal. Such surveys are important to know the current status and to set future research priorities and appropriate strategies for proper development of bamboos in all aspects. Thus, the survey of bamboo resources and its marketing is required to quantify and evaluate their potential development.



## **1.6 Limitation and Scope of the Study**

This study is simply a partial requirement of Master in Business Studies (M.B.S) program. There are some limitations, which weaken the generalization, such as inadequate coverage of industries, time periods taken, reliability of the sources available, and reliability of the statistical tools used.

## **1.7 Organization of Research Works**

Since the study is carried out to different stages and procedures, the study is presented in the following chapters in order to make the study easy to understand.

### **Chapter - I Introduction**

This chapter contains the introduction of the main topic of the study and other introductory framework. Like background of the study, study area selection, statement of problems, objectives of the study, justification of the study and limitations of the study.

### **Chapter - II Review of the Literature**

In this chapter all the relevant books, journals and dissertations are taken into account as guidelines of the study.

### **Chapter – III Research Methodology**

In this chapter the entire methodology of the study such as research carried out in this size and shape. This chapter contains the methodology used in this research work. It includes research design, nature and sources of data, data collecting and processing procedure, population and sampling, and tools for data analysis.

### **Chapter – IV Presentation and Analysis of Data**

This chapter is the heart of this study in which all the relevant collected data are analyzed and interpreted. Analysis of data is mainly divided into headings as different tools are used for such as statistical tools. Major findings from the empirical research and secondary analysis are also mentioned here.

## **Chapter - V Summary, Conclusion and Recommendations**

In this chapter, based on the analysis and interpretation of data in chapter four, summary and conclusion of major findings of statistical analysis are presented and recommendations made for the concerned authorities and institutions.

Finally bibliography with references used in the study is added at the end of this research.

## **CHAPTER – II**

### **REVIEW OF LITERATURE**

Review of literature is an essential part of all studies. It is a way to discover what other research. It is also a way to avoid investing problems that have already been definitely answered. It refers to the reviewing of the past studies in the concerned field such studies could be thesis that are written earlier, books, articles, and or any sort of other publications concerning the subject matter, which were written prior by a person or an organization. The purpose of literature review is, thus, to find out what research studies have been conducted in one's chosen field of study, and what remains to be done. It also provides the foundation for developing a comprehensive theoretical framework from which hypothesis can be developed for testing and also minimize the risk of pursuing dead-ends in research and prevents duplication of previous word.

Thus, review of literature basically highlights the existing literature and research work related to the present research being conducted with the view of finding out what had already been explained by the previous researchers and how the current research adds further benefits to the field of research. While conducting the research study, previous studies can not be ignored, as that information would help to check the chances of duplication in the present study. Thus one can find what research studies have been conducted and what remains to go with.

This chapter highlights and deals with the literature relevant to this study and serves the following important functions:

- i. This study continues with the process in Chapter- 1 by providing readers background information needed to understand.
- ii. This study establishes the study as a link in order to fill the gap of research that is seen in this field.
- iii. This study assures readers that they are familiar with the important research that has been done by other in similar areas.

This review of literature has been classified into the following basic sub-groups, they are as follows:

## 2.1 Theoretical Review/Conceptual Review

### 2.2 Review of Related Studies

#### 2.2.1 Review of Related Topic

#### 2.2.2 Review of Related Thesis and Articles

## 2.1 Theoretical Review/Conceptual Review

The theoretical review or conceptual review is also known as review of related\_textual literature i.e. books.

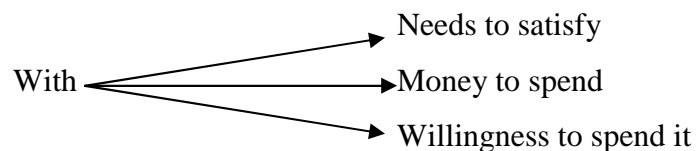
### 2.1.1 The Market

A market may be defined as a place where buyer and sellers meet, products or services are offered for sales, and transfers of ownership occur. The market is the arena for potential exchange. “Market is defined as people or organizations with wants to satisfy, money to spend, and the willingness to spend it” (Stanton, 1994). “A market consists of all potential customers having a particular need or want who possess ability and willingness to engage in exchange to satisfy that need or want” (Kotler, 2000).

In other words, there should be

- ) People or organization with needs or wants to satisfy
- ) Money to spend
- ) Willingness to spend through exchange

A market is people or organization:



### 2.1.2 Marketing

Marketing is the process of planning and executing the conception, pricing, promotion and distribution of ideas, goods and services to create exchanges that satisfy

individual and organizational objectives (Peter,1995). This is a management oriented definition of marketing. It recognizes marketing as a process.

Today, as business has evolved, marketing has changed from sale orientation to broader customer orientation. Marketing includes sales, but encompasses much more. It is fundamental to the successful creation, distribution, promotion, and pricing of goods, services and ideas in all business and non-profit organizations.

Marketing is a social and managerial process by which individuals and groups obtain what they need and want through creating, offering and exchanging products of value with others (Stanton,1994:6).

Marketing can be defined in a simple manner as the activities done by the company to deliver the product from the place of production to the place of consumption. It means that marketing is the process of the transfer of ownership of the product in exchange of something of value.

Different authorities define marketing in different ways. "Marketing is the exchange taking place between consuming groups on the one hand and supplying groups on the other" (Alderson and Richard, 1975:42).

Marketing is human activity directed at satisfying needs and wants through exchange processes (Kotler, 2000).

In light of the above definitions, it can be concluded that marketing is a process of delivering goods and services produced to satisfy the needs of consumers in an effective way so that the objectives of the producers are fulfilled. Marketing thus satisfies the objectives of the producers by making it possible to sell their products in the market on the one hand and helps consumers get the maximum satisfaction by providing goods and services for their consumption on the other.

### **2.1.3 Marketing System**

A system is a set of units with relationship among them. Marketing is a total system of business activities designed to plan, price, promote and distribute wants satisfying

product to target market to achieve organizational objectives. The term "marketing system" consists of two separate words "marketing" and "system".

Marketing is a human activity directed at satisfying needs and wants through exchange processes. On the other, the term "system" means regularly interacting group of activities forming a unified whole. In other words, system means systematic or regular flow of any thing directed at fulfilling basic goals.

"Marketing system deals with the smooth functioning of the marketing activities for the fulfillment of the consumer needs and wants". If marketing fails to do so, then one must know that there is something wrong with the marketing organization. And in this situation no marketer can work successfully. So, the marketing manager must be able to analyze the marketing system in a systematic manner (Shrestha, 1992).

#### **2.1.4 Marketing Environment**

Marketing environment consists of forces that directly or indirectly influence the organization's marketing activities. Marketing receives various inputs from the environment in the form of personnel, financial resources, raw materials and information. Marketing provides various outputs to the environment in the form of goods, services, ideas, information. Marketing environment can be internal as well as external.

##### **Internal**

Internal environmental forces provide strengths and weaknesses. The Internal environment of marketing, located within the organization, is not easily controllable by the marketing manager, at least in the short-run. Organization should be able to anticipate and predict the changing forces in the environment. Internal environment consists of marketing activities, organization structure, organization resources, organizational objectives and organizational policies.

##### **External**

External environmental forces shape opportunities and threats. It is located outside the organization and is uncontrollable to a large extent. However, they can influence them

and be influenced by them. External environment consists of political, legal, economic, technological, competitive, socio-cultural, demography and natural forces.

The importance of marketing environment to the management has been increasing these days than even before, because there are several opportunities and threats or challenges within the marketing environment, which should be, forecasted and rightly analyzed by the marketing manager to enjoy the opportunities. A successful marketer is one who can appropriately analyze these forces.

## **2.1.5 The Marketing Mix**

### **2.1.5.1 What is the Marketing Mix**

The term "Marketing Mix" refers to the control ingredients (subject to internal and external constraints) in a marketing plan that a marketing manager can control. These Marketing mix ingredients included product planning, pricing, branding, distribution channels, personal selling, advertising, promotions, packaging, display, servicing, physical handling, and fact finding and analysis.

Marketing mix is a total set of marketing tools (variables) that organizations used to pursue their marketing objectives in the target market. The marketing mix is one of the most fundamental concepts associated with the marketing process. It is well understood by most modern marketers and is systematically applied in many industries especially those that deal with physical products.

Marketing mix is one of the key concepts in modern marketing. It refers to the set of variables that the business uses to satisfy consumer needs (Agrawal, 1982).

The tools of marketing mix are known as 4 ps - Product, Promotion, Price and Place.

**Figure 2.1**

**Variables of Marketing Mix**



The four elements of marketing mix are interrelated. Decisions on one element usually affect actions in others (McCarthy, 1987). The marketing mix should not only satisfy customer needs but also should be cost effective. It should change with changes in the environment and customer preferences. Organization should offer different marketing mix for different segments of the target market. Ultimately, marketing management is the management of the marketing mix.

**Marketing Mix 4PS (Product, Price, Physical Distribution/Place, Promotion)**

**Decisions**

**Product Decisions**

The term "product" refers to tangible, physical products as well as services. Some examples of the product decisions include: Brand name, functionality, styling, quality, safety, packaging, repairs and support, warranty, accessories and services.

**Pricing Decisions**

Based on a company's pricing objectives, a company can have various pricing strategies and methods. Some common pricing decisions include: Pricing strategy (skim, penetration, etc.), suggested retail price, volume discounts, and wholesale pricing, payment methods, payment terms and discounts, Allowances seasonal pricing, product bundling, price flexibility and even price discrimination.



### **Physical Distribution**

A company must be able to deliver its good or service to the customer. Some examples of distribution decisions include: Distribution channels, market coverage (inclusive, selective, or exclusive distribution), specific channel members, inventory management, warehousing availability, distribution centers, order processing, JIT, speed of delivery, transportation costs and reverse logistics.

### **Promotion Decisions**

Promotion decision represents the various aspects of marketing communication, that is, the communication of information about the product with the goal of generating a positive customer response. Marketing communication decisions include: Promotional strategy (push, pull, etc.), advertising, search engine optimization personal selling & sales force, e-commerce and paid search campaigns, sales promotions, public relations & publicity.

### **2.1.5.2 Marketing Mix Modeling**

Marketing mix modeling is an analytical approach that uses historic information, such as syndicated point-of-sale data and companies' internal data, to quantify the sales impact of various marketing activities. Mathematically, this is done by establishing a simultaneous relation of various marketing activities with the sales, in the form of a linear or a non-linear equation, through the statistical technique of regression. These learning's are then adopted to adjust marketing tactics and strategies, optimize the marketing plan and also to forecast sales while simulating various scenarios.

### **Marketing-mix models decompose total sales into two components:**

**Base Sales:** This is the natural demand for the product driven by economic factors like pricing, long-term trends, seasonality, and also qualitative factors like brand awareness and brand loyalty.

### **Incremental Sales**

Incremental sales are the component of sales driven by marketing and promotional activities. This component can be further decomposed into sales due to each marketing component like television advertising or radio advertising, print advertising (magazines, newspapers etc.), coupons, direct mail, internet, feature or display

promotions and temporary price reductions. Some of these activities have short-term returns (coupons, promotions), while others have longer term returns (TV, radio, magazine/print).

### **Limitations**

While marketing mix models provide much useful information, there are two key areas in which these models have limitations that should be taken into account . These limitations are discussed below.

- i. The focus on short-term sales can significantly under-value the importance of longer-term equity building activities; and
- ii. When used for media mix optimization, these models have a clear bias in favor of time-specific media (such as TV commercials) versus less time-specific media (such as ads appearing in monthly magazines); biases can also occur when comparing broad-based media versus regionally or demographically targeted media.

In relation to the bias against equity building activities, marketing budgets optimized using marketing-mix models may tend too much towards efficiency because marketing-mix models measure only the short-term effects of marketing. Longer term effects of marketing are reflected in its brand equity.

Further, most approaches to marketing-mix models try to include all marketing activities in aggregate at the national or regional level, but to the extent that various tactics are targeted to different demographic consumer groups, their impact may be lost.

### **2.1.6 Buying Behavior of Bamboo**

"Buyers behavior is defined as the behavior that consumers display in searching for, purchasing, using, evaluating and disposing of products, services and ideas that they expect will satisfy their needs" (Leon and Leslie, 2000:8).

Any given property or process can be modeled in a variety of ways. We could model something by verbally describing it, by representing it with diagrams or mathematical symbols or by characterizing it with some physical process such as electrical current.

The most common consumer behavior models are verbal, often supported by a schematic drawing.

### **2.1.6.1 Models**

Models of buyer's decision making such as Nicosia (1966), Howard-Seth (1969) and Engel-Blackwell-Minard (1968) describe buyers' purchase decision making involving extensive informant search and evaluation of alternatives. These models agree that there are certain steps in buyers' buying decision-making process.

#### **2.1.6.1.1 Nicosia Model**

Francesco M. Nicosia provided a model of buyers' decision process in 1966. It focuses on the relationship between firm and its potential buyer's. It is all interactive design, according to which "the firm tries to influence buyers and buyers by their actions to influence the firm".

Nicosia Model is divided into four major fields

- ) Buyer's attitude based on the firm's message
- ) Search and evaluation
- ) The act of purchase
- ) Feedback

#### **2.1.6.1.2 Howard-Seth Model**

John A. Howard and Jagdish N. Seth provide another model of buyer's' decision-making, which is basically a major revision of an earlier effort to develop a comprehensive theory of buyers' decision making. This model distinguishes between three stages of decision making:

- ) Extensive problem solving
- ) Limited problem solving
- ) Routinized response behavior

The extensive problem solving behavior is characterized by a great amount of information needed and slow speed in decision making, that of limited problem solving is moderate and in routines response behavior little amount of information is needed and speed of decision is fast.

The more important conclusion of the model is that informal influence (particularly information acquired from friends) was more critical than information supplied by advertisements.

#### **2.1.6.1.3 Engel-Blackwell-Minard Model**

It is originally designed to serve as a framework for organizing the fast growing body of knowledge concerning buyers' behavior. Its latest version consists of four sections

- ) Decision process stages
- ) Problem recognition, search information, alternative evaluation, purchase and outcomes
- ) Information inputs
- ) Information processing
- ) Variables influencing the decision process

Buyers' behavior models can also be classified in terms of scope. Some are designed to represent a very specific aspect of behavior, such as buyers' repetitive purchasing of the same brand over a period of time.

Others are much more comprehensive because they attempt to include a great variety of buyers' behavior. These comprehensive models are less detailed in nature so that they can represent many diverse situations.

## **2.2 Review of Related Studies**

### **2.2.1 Review of Related Topic (Bamboo)**

Bamboo belongs to the grass sub-family of Bambusoideae. Bamboo is a self-regenerating natural resource. Bamboos occur in the natural vegetation of the tropical, subtropical and temperate regions, but are found in great abundance in tropical Asia. While bamboo taxonomy is still incomplete, it has been recorded that 75 genera and 1250 species occur in the world (FAO, 1978, 1987 cited in Kigomo, 1988). Eighty percent of the world bamboo resource is distributed mainly in the South Asian tropical region. Africa and South America are thus poorly endowed with bamboo resources, while there is total absence of the resource in the former Union of Soviet Socialist Republic (USSR), North America, Central and South Australia and the regions near the poles (Kigomo, 1988).

Bamboo is a perennial, giant, woody grass belonging to the group angiosperms and the order monocotyledon. The grass family Poaceae (or Gramineae) can be divided into one small subfamily, Centothecoideae, and five large subfamilies, Arundinoideae, Pooideae, Chloridodeae, Panicoideae, and Bambusoideae. In distinction to its name, bamboos are classified under the subfamily Bambusoideae stated that there are about 60 to 70 genera (Wang and Shen, 20). Most of the bamboos need a warm climate, abundant moisture, and productive soil, though some do grow in reasonably cold weather (below  $-20^{\circ}\text{C}$ ) (Grosser and Liese, 1971).

Bamboo is one of the oldest building materials used by mankind. The bamboo culm, or stem, has been made into an extended diversity of products ranging from domestic household products to industrial applications. Examples of bamboo products are food containers, skewers, chopsticks, handicrafts, toys, furniture, flooring, pulp and paper, boats, charcoal, musical instruments and weapons. In Asia, bamboo is quite common for bridges, scaffolding and housing, but it is usually a temporary exterior structural material. In many overly populated regions of the tropics, certain bamboos supply the one suitable material that is sufficiently cheap and plentiful to meet the extensive need for economical housing.

Bamboo shoots are an important source of food, and a delicacy in Asia. In addition to its more common applications, bamboo has other uses, from skyscraper scaffolding and phonograph needles to slide rules, skins of airplanes, and diesel fuels. Extractives from various parts of the plant have been used for hair and skin ointment, medicine for asthma, eyewash, potions for lovers and poison for rivals. Bamboo ashes are used to polish jewels and manufacture electrical batteries. It has been used in bicycles, dirigibles, windmills, scales, retaining walls, ropes, cables and filament in the first light bulb. Indeed, bamboo has many applications beyond imagination. Its uses are broad and plentiful.

With the advancement of science and technology and the tight supply of timber, new methods are needed for the processing of bamboo to make it more durable and more usable in terms of building materials. Studies have been done on the basic properties, and processing bamboo into various kinds of composite products. More studies are needed to aid and promote its application in the modern world (<http://en.wikipedia.org/wiki/Bamboo>)

### **2.2.1.1 Botanical Survey on Bamboos in Nepal**

Bamboos are one of the most widely distributed groups of species throughout Nepal. However, they are common in the eastern half of the country due to more favorable climatology. Bamboos in Nepal are generally classified into two types known locally as bans and nigalo. Some local people, particularly in eastern Midhills, also categorise them into 3 classes as bans, malingo and nigalo.

Hara et al. (1978) reported 10 species of bamboo belonging to 5 genera from east and central part of Nepal.

Poudyal (1992) listed 33 species of bamboo belonging to 12 genera from Nepal.

Manandhar and Bhattarai (1998) surveyed the bamboo distribution in twenty-six localities of Kathmandu Valley and reported 23 species of bamboos belonging to five genera.

Das (2004) described 20 economically important bamboo species belonging to 8 genera of Nepal. It includes 8 species of *Bambusa*, 4 species of *Dendrocalamus*, 1 species each of *Ampelocalamus*, *Cephalostachyum*, *Melocanna*, *Drepanostachyum*, *Yushnia* and 3 species of *Himalayacalamus*.

### **2.2.1.2 Work Related to Bamboo Cultivation and its Socioeconomic Aspects**

#### **Inside Nepal**

Acharya (1975) wrote a sensible feasibility study of bamboo as the basis of cottage industry expansion in Central Nepal without attempting specific identification. He used the three categories into which bamboo species are commonly grouped in Nepali as *bans*, *nigalo*, and *malingo*. These groups probably constituted a more rational taxonomy at that time than the official genera.

Metz, (1987) carried out a study in eastern Nepal to understand utilization and marketing pattern of bamboos.

Das, A.N. (1991) carried out a study on harvesting method of bamboo.

Karki *et al.*, (1995) described how marketing improvement needs to be done starting from bamboo production to processing possibility and marketing in national as well as international sector.

Das and Seeley (1996) carried out a research in eastern Nepal (in the hill district of Dhankuta and Terai (lowland) to assess the contribution of bamboos to the economy of rural people in Nepal making use of the wealth-ranking tool. Five wealth-ranking categories were made based on food sufficiency and income. They reported that bamboos, which are widely used by households in the region but particularly in the Terai, varied with the socio-economic status of the villages.

Das, A.N. (1998) reported that the main factors determining the household decision for cultivation of bamboo in the farmlands of eastern Nepal are (a) landholding (b) household size (c) household income and (d) old superstition and taboos, especially in the Terai (lowlands) region of the country.

Manandhar, and Bhattarai (1998a) reported *Bambusa balcooa* was the most commonly grown species in Kathmandu Valley. Out of the 23 species reported, 6 species were found occurring in wild state while the rest of species were cultivated.

Das (1999) reported that *tama* derived from *Tama bans* (*Dendrocalamus hamiltonii*), *Dhungre/Rachhasi bans* (*D. giganteus*) and occasionally from *Kalo bans* (*D. hookerii*) were collected and sold between June and September in eastern Nepal. The study also revealed that a well-managed single clump could provide 100 kg of bamboo shoots which means one hectare of bamboo plantation offers about 2000 kg or more *tama* worth about Rs. 20,000/year. The study also identified the main problem faced by the *Tama* traders, which is the non-availability of bamboo shoots the year. They lack cost effective packing facility to keep the bamboo shoots fresh and in good condition.

Adhikary (2008) conducted a study focusing on how traditional bamboo users, who amount to around 3.3 in Nepal alone, can be integrated into the modern market. He commented that though bamboo has historical and cultural association in Nepal, it is used in almost all aspects of life from construction, marriage, death to livelihood. The

use of bamboo, however, has been only subsistence, and the modern market for it is not well developed. With the growing bamboo demand in the world, abundant availability of the resources, vast traditional knowledgebase and cultural affinity of this material in Nepal, he concluded that there is a tremendous potential for it to contribute to the people's livelihood.

### **2.2.2 Review of Related Articles and thesis**

Mostly this thesis is based upon primary data; some data were collected from related thesis and articles too. According to collected information, some results were finalized which are mentioned below.

Most of the thesis research has been done in botanical aspect of bamboo. Marketing research has been dominated in those researches. Because of this, I have studied in this concept. Some findings from botanical research are mentioned below.

According to Grosser and Liese, bamboos grow particularly well in the tropics and subtropics, but some taxa also thrive in the temperate climate of Japan, China, Chile and the USA.

Abd.Latif and Tarmizi studied the anatomical properties of three Malaysian bamboo species, 1 to 3 year old *Bambusa vulgaris* (buluh minyak), *Bambusa blumeana* (buluh duri) and *Gigantochloa scortechinii* (buluh semantan).

#### **Processing:**

The bamboo was cut at about 30 cm above the ground level. Each stem was marked and cut at about 4 m intervals into basal, middle and top segments. Disks were cut and used for the determination of vascular bundles distribution and fiber dimensions respectively.

#### **Output:**

This study showed that the highest mean concentration of vascular bundles was observed in the top location of the 2 year old *B. blumeana* (365 bundles/cm<sup>2</sup>), *B.vulgaris* (307 bundles/cm<sup>2</sup>) and *G. scortechini* (223 bundles/cm<sup>2</sup>).



The lowest mean concentration of vascular 12 bundles was in the middle location of the 1 year old *G. Scortechini* (132 bundles/cm<sup>2</sup>), 2 year old *B.vulgaris* (215 bundles/cm<sup>2</sup>) and 1 year old *B. blumeana* (200 bundles/cm<sup>2</sup>).

### **Other Article Claimed**

That the average specific gravity of bamboo ranged from 0.3 to 0.8 (Chew et al: 9), gives the density of *B.vulgaris* at 630 kg/m<sup>3</sup>, which is relatively light compared to other bamboo.

Density is the major factor that influences the mechanical properties, and it is closely related to the proportion of vascular bundles. Shear, compression parallel to grain, bending at proportional limit.

The observation is that as moisture content decreases the mechanical properties increase, and as the density decreases the mechanical properties also decrease. This behavior is similar to mechanical properties of wood. Its anatomical features directly affect bamboo physical and mechanical properties.

Lee, determined the physical and mechanical properties of giant timber bamboo (*Phyllostachys bambusoides*) grown in South Carolina, USA. This study concluded that moisture content, height location in the culms, presence of nodes and orientation of the outer bark affect the mechanical and physical properties.

Shukla et al measured the shrinkage from green to air-dry (12%), as well as green to an oven-dry condition.

On the other hand, according to Abd.Razak et al and Tewari, bamboo will start to shrink both in the wall thickness and diameter as soon as it starts to lose moisture.

This behavior is unlike wood, where most of the properties will start to change when it reaches the fiber saturation point. All wood-based materials are closely affected by the amount of water present.

Thus, in order to satisfactorily use bamboo as a raw material for composite products, the physical properties of relative density, equilibrium moisture content and the shrinkage and swelling are studied.

D. Strictus is calculated using the equation below:

Relative Density = Oven dry mass/volume density of water

Shakya (2008), in her thesis related to “Various Bamboo Species in Badikhel VDC” with following objectives:

- ) To explore the diversity of the bamboo species in the study area and study their taxonomy
- ) To document the utilization patterns of bamboo species in the study area
- ) To assess the socio-economic impacts of the bamboo-based craftmaking on *Paharis*, an ethnic group residing in the study area

Has conducted anatomical studies only. She has finalized with different species and its local name. But small portion of marketing has been included in this thesis.

**Her conclusion points are:**

“Developing new products and diversifying to new bamboo enterprise is required to overcome the limitation of bamboo being used mostly in the production of the traditional house appliances like *Nanglo, Chalne, Dalo and Doko*”.

Bamboo handicraft making, based on their traditional practices is also assisting in promotion of indigenous knowledge and technology, development of craft-based cottage industry and improvement in socio-economic condition of marginalized and poor *Paharis* especially women and landless families in the area studied.

Thus different articles, internet sources and thesis studies have been focused only anatomical studies of bamboo. That’s why this thesis has been mainly focused in marketing purpose.

## **CHAPTER – III**

### **RESEARCH METHODOLOGY**

Research methodology is a way to solve the research problem systematically with the help of various tools (Kothari, 2001: 39). It may be understood as a science of studying how research is done. It helps us to find out accuracy, validity and suitability. The success and failure of every research work depends upon the research methodology employed by a researcher as it analyze, examine and interpret various aspect of research work. During the research, some subjective and objective questions were used to gather data. Marketing research is the systematic and objective search for an analysis of information relevant to the identification and solution of any problem in the field of marketing (Paul, 1995:2).

The basic purpose of the study is to investigate the demand and sales of bamboo in Nepal, to find out the level of awareness of different types of bamboo in consumer's mind, to evaluate the distribution network and to evaluate the marketing strategies, efficiency and effectiveness.

A research design is the arrangement of condition for collection and analysis of data in a manner that aims to combine relevance to the research purpose with economy in procedures (Kothari, 1992:25).

Thus it is not possible for the researcher to conduct a research project without research design.

The research design is a specific presentation of the various steps in the problems, formulation of hypothesis, conceptual clarity, methodology, survey of literature and documentation, bibliography, data collection, testing of hypothesis, interpretation presentation and report writing.

The present study is based on both Exploratory and Descriptive Research Design (Survey using questionnaire for the respondents who are or can be the potential consumer of the bamboo, as well to the farmer who is the owner of bamboo).

In both above-mentioned methods, some personal observation is also exercised in the cases where respondents lacked sufficient conceptual background and orientation and therefore, were not in a position to respond precisely.

The other main purpose of the study is to identify the purchase behavior of consumer who purchases bamboos in Nepal.

### **3.1 Nature and Sources of Data**

To meet the objective of this research several types of data were collected through several sources. Although research is based on primary data, related secondary data were also obtained. The sources of data are:

#### **) Primary Sources**

This study has been conducted on the basis of primary data given by the marketers and farmers. These are collected by asking questions to the people, interviews, inquire informal talk's, opinion etc and through participant observations. The data relating to marketing of bamboo, total turnover of the persons in different years and number of employees were directly obtained from field observation.

For this, some sets of questionnaire were developed and distributed to the targeted group/s. Target groups have been chosen from sampling method.

#### **Sampling**

A small portion chosen from the population for studying its properties is called sample and number of units in the sample is known as the sample size. The method of selecting for study a small portion of the population to draw conclusion about characteristics of the population on the basis of which a judgment or inference about the universe is made. Here it is said that kirtipur MC-8 throughout the Katmandu district has been taken for the research study. Approximately 25% of the bamboo bushes from the MC-8 have been taken as the samples. Kirtipur MC-8 is the study

sampling frame and every individual bamboo bushes and the owner of those bushes is the key sampling unit for the study.

### J **Secondary Sources**

Supplementary data and information were collected from different articles, journals and websites. That is secondary data on the study area and study issues were collected from previous researches, books, governmental and non governmental organization profiles, reports. Unpublished references are also the sources for the secondary data.

The major sources of secondary data include:

- i. Publications of different organizations
- ii. Official publications of Nepal Government
- iii. Central bureau of statistics
- iv. Reports of committees
- v. Publication of the research centers and universities theses
- vi. Newspapers, journals, books, articles, magazines
- vii. Websites

### **3.2 Details of the Research Tools**

Important references relevant to the subject matter were identified and collected accordingly. Most of data were collected from primary sources (informal talks and interviews) and some relevant information was collected from secondary sources. Primary data was collected by using questionnaire method which was distributed to different concerned area in order to get accurate and actual information.

Systematic Information Collection and Analysis Approach (SICAA) are used in collecting information and reviewing them. The key methods of data collection are given below:

**Table 3.1**  
**Methods for Data Collections**

<b>General Method</b>	<b>Specific Method</b>	<b>Specific Technique</b>
Interview	Personal interview	Use of interview schedule
	Group interview	Use of discussion guide
	Structure interview	Use of close ended questions
Observation	Participant observation	Use of check lists
	Unstructured observation	Field notes

### **3.3 Survey/Questionnaire/Interview/Observation**

Structured questionnaire was used to elicit information about prospects of bamboo business in Nepal from marketer. Similarly, it was based upon market, marketers, buyers and users. Furthermore library consultation, valuable suggestion and relevant internet sources and concerned commentators were supporting materials. The questionnaire is attached at the end of this thesis.

### **3.4 Tools of Data Analysis**

After collecting raw data, data is processed for further analysis. The data has been edited before aggregating them. Errors and omissions have been detected to correct them. After editing the responses are coded. Information coding is done only to questions containing fixed response questions and data that could be analyzed in the computer. Simple statistical and analytical tools are used to achieve the objective of the study. The analysis of the data has been done according to the pattern of data available. Because of limited time and resources, simple statistical tools such as graph, mean and correlation analysis are adopted in this study. Descriptive method is used for qualitative data. Different types of tools are used for analysis. The major steps in data analysis include:

- i. Tabulation of the data collected
- ii. Coding the information obtained
- iii. Data processing computer software: Simple data by excel
- iv. Graphs and tables
- v. Simple statistical tools are used.

Some statistical tools are:

$$3.4.1 \text{ Mean } (\bar{X}) = \frac{\sum X}{N}$$

Where  $\sum X$  = sum of all the values of X

N = number of pairs of data given in different fiscal year.

$$3.4.2 \text{ Correlation}(r) = \frac{\sum xy}{\sqrt{\sum x^2} \sqrt{\sum y^2}}$$

Where,  $x = X - \bar{X}$

$y = Y - \bar{Y}$

X and Y are the given values for different purpose.

Value of r lies between -1 and +1. If r = 1 then there is a perfect positive correlation between the variables. If r = -1 that implies there is a perfect negative correlation between the variables. If r = 0 then the variables are uncorrelated. But r = 0 does not always mean that the variables are uncorrelated; they may be related in some other form such as logarithm, quadratic, exponential etc.

### 3.4.3 Probable Error

Probable error of coefficient correlation helps in interpreting errors value. With the help of probable error it becomes possible to determine the reliability of the coefficient. The value of coefficient so far lies on conditions on which the samples were drawn randomly. The probable error of the coefficient of correlation is calculated by using the following formula:

$$PE (r) = 0.6745 \frac{1-r^2}{\sqrt{N}}$$

Where,

$$\frac{1-r^2}{\sqrt{N}} = \text{Standard error}$$

This consists:

r = value of correlation coefficient

N = number of pairs of observations.

Reason for taking 0.6745 is that in a normal distribution 50 % of observations lie in the range  $\hat{\mu} \pm 0.6745\hat{\sigma}$  where,  $\hat{\mu}$  and  $\hat{\sigma}$  denote the population mean and standard deviation.

P.E(r) is used to test if an observed value of sample correlation coefficient is significant of any correlation in the population.

If  $r < P.E.$  correlation is not at all significant.

If  $r > 6P.E.$  r is definitely significant.

In the other situation ( $P.E < r < 6 P.E$ ), nothing can be concluded with certainty.

Coefficient of correlation is expected to be within the range of  $\pm PE (r)$ .



## **CHAPTER - IV**

### **PRESENTATION AND ANALYSIS OF DATA**

This chapter is the main and major part of the research. The essence of the study remains fruitful on the extent of the consistency and smoothness of the presented data and their analysis as well as interpretations.

In this chapter, the primary and secondary data collected according to the objectives of the study is analyzed, interpreted and presented with explanation, diagram, tabulation and charts.

Primary data are collected through questionnaire and interview of consumers and farmers or potential consumers of bamboo.

Secondary data (marketing practice and achievements) are obtained from internet and related thesis. But mostly this thesis is focused in primary data collected from field observation.

Nepalese bamboo markets have been covering an important place in the country's handicrafts and building company. It has succeeded in giving employment to a large number of people as well as to earn foreign exchange via handicrafts business.

#### **4.1 Existing Market of Bamboo**

In Nepal, commercial productions of bamboo still dominated. It is centralized within marketer as their wish. In spite of being a traditional product, the bamboo distribution is largely concentrated in Kathmandu Valley and the surroundings. The major areas of production in the Valley are village area of Kirtipur, Lalitpur and Bhakatpur. Outside the Valley, the production is found at different places of the country but still market is dominated. People are thinking bamboo as bushy plant neither cash plant.

#### **4.2 Market Composition**

Bamboos are being sold to different places of Katmandu Valley from Kirtipur MC - 8. According to different bushes observed, farmers have given different answers about a number of bamboo sold and its price per unit. According to primary data collected some are structured into given table.

**Table 4.1**  
**Quantity Sold With Price Per Unit**

<b>F/Y 2000/10</b>	<b>Bush 1(X1)</b>	<b>Cost/ Piece</b>	<b>Bush 2(X2)</b>	<b>Cost/ Piece</b>	<b>Bush 3 (X3)</b>	<b>Cost/ Piece</b>	<b>Bush 4 (X4)</b>	<b>Cost/ Piece</b>	<b>Bush 5 (X5)</b>	<b>Cost/ Piece</b>
2000/01	150	40	200	40	200	60	250	50	100	60
2001/02	300	40	250	40	150	60	150	50	200	60
2002/03	200	50	300	50	200	70	300	60	250	60
2003/04	250	60	200	60	250	70	200	60	300	70
2004/05	300	60	250	60	200	75	250	70	250	70
2005/06	300	70	300	70	150	80	200	75	250	75
2006/07	350	70	350	70	300	80	250	80	300	80
2007/08	200	80	250	80	350	100	300	80	350	80
2008/09	250	100	300	100	300	100	250	100	250	100
2009/10	300	100	250	150	250	100	300	120	250	100
<b>Sum</b>	x1= 2600		x2= 2650		x3= 2350		x4= 2450		x5= 2500	

*(Source: Field Survey, 2009/2010)*

#### 4.2.1 Calculation of Mean

**Bush 1:**

$$\bar{X}_1 = \frac{\sum x_1}{N} = \frac{2600}{10} = 260$$

**Bush 2:**

$$\bar{X}_2 = \frac{\sum x_2}{N} = \frac{2650}{10} = 265$$

**Bush 3:**

$$\bar{X}_3 = \frac{\sum x_3}{N} = \frac{2350}{10} = 235$$

**Bush 4:**

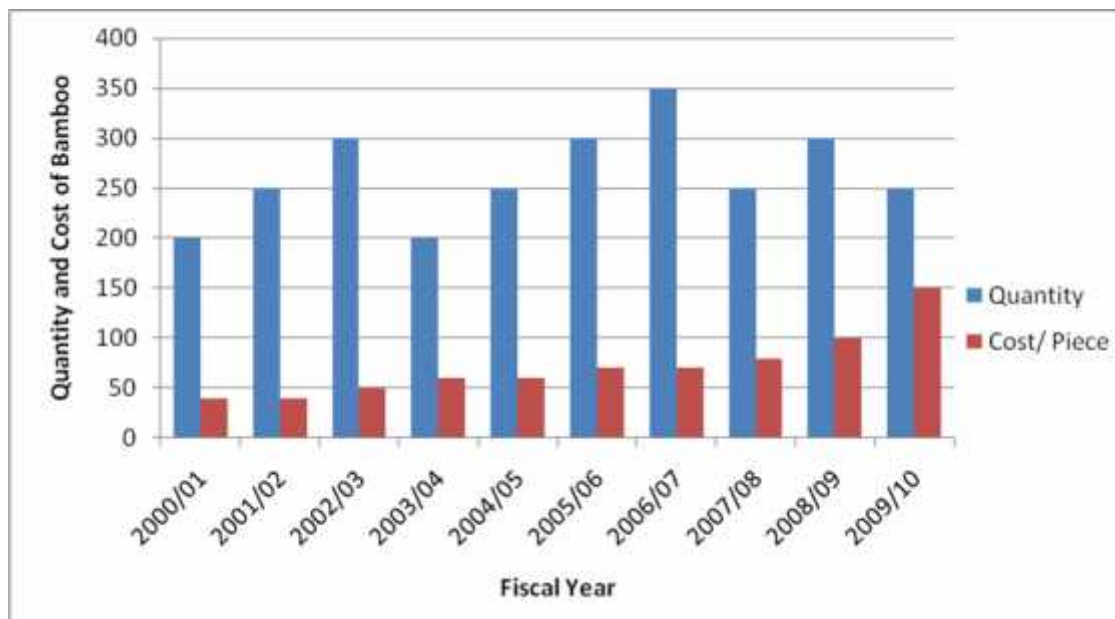
$$\bar{X}_4 = \frac{\sum x_4}{N} = \frac{2450}{10} = 245$$

**Bush 5:**

$$\bar{X}_5 = \frac{\sum x_5}{N} = \frac{2500}{10} = 250$$

Among all bushes, **Bush 2** is selected to find correlation between quantities sold and total cost in each respective 10 years interval. As it shows highest mean (265) among all bushes.

**Figure 4.1**  
**Bamboo Sold to Market in Different F/Y**



Source: Data from Bush2

#### 4.2.2 Correlation Analysis

It is obvious that there are low degree of consistency between sold quantity and price of bamboo. So the relation between quantity sold and its value should be seen. So in table 4.2 the co-relation between sold quantity and its value is shown. According to

correlation analysis between quantity sold and its value adopting "Karl person's coefficient of correlation":

**Actual Mean Method**

**Table 4.2**  
**Correlation Analysis**

F/Y	Qty X	Cost Y	$x=X-\bar{X}$ $=X-265$	$y=Y-\bar{Y}$ $=Y-19300$	xy	$x^2$	$y^2$
2000/ 01	200	8000	-65	-11300	734500	4225	127690000
2001/ 02	250	10000	-15	-9300	139500	225	86490000
2002/03	300	15000	35	-4300	-150500	1225	18490000
2003/ 04	200	12000	-65	-7300	474500	4225	53290000
2004/ 05	250	15000	-15	-4300	64500	225	18490000
2005/ 06	300	21000	35	1700	59500	1225	2890000
2006/ 07	350	24500	85	5200	442000	7225	27040000
2007/ 08	250	20000	-15	700	-10500	225	490000
2008/09	300	30000	35	10700	374500	1225	114490000
2009/ 10	250	37500	-15	18200	-273000	225	331240000
<b>Total</b>	X= 2650	Y= 193000	x= 0	y= 0	xy= 1855000	$x^2$ = 20250	$y^2$ = 780600000

**Mean**

$$\bar{X} = \frac{\sum X}{N} = \frac{2650}{10} = 265 \quad \text{and} \quad \bar{Y} = \frac{\sum Y}{N} = \frac{193000}{10} = 19300$$

$$\text{Correlation}(r) = \frac{\sum \phi_{xy}}{\sqrt{\sum \phi_{x^2}} \sqrt{\sum \phi_{y^2}}}$$

$$= \frac{1855000}{\sqrt{20250} \sqrt{780600000}}$$

$$= \frac{1855000}{142.3025 \sqrt{27939.21975}}$$

$$= 0.46657034$$

$$\approx 0.47$$

The correlation is found 0.47. It means that the correlation between quantity (sold volume) and the cost has positive.

### 4.2.3 Computation of Probable Error

The probable error of the coefficient is obtained as follows:

$$PE(r) = 0.6745 \frac{1 Z r^2}{\sqrt{N}}$$

By using the above formula, the probable error of Bush2 with cost is calculated below:

$$\begin{aligned} PE(r) &= 0.6745 \frac{1 Z r^2}{\sqrt{N}} \\ &= 0.6745 \frac{1 Z (0.47)^2}{\sqrt{10}} \\ &= 0.6745 \times \left( \frac{1 - 0.2209}{3.162} \right) \\ &= 0.166 \end{aligned}$$

Since the value of r is greater than its probable error (i.e.  $0.47 > 0.166$ ),

We have to do further calculation.

$$\begin{aligned} 6P.E &= 6 \times P.E \\ &= 6 \times 0.166 \\ &= 0.996 \end{aligned}$$

Thus, it shows  $P.E < r < 6 P.E$ . Nothing can be concluded.

## 4.3 Marketing of Bamboo (Field Survey)

### 4.3.1 Exploration and Distributional Pattern of Bamboo Species in the Study Area

From the survey, it is found that the two species of two different genera, *Bambusa nepalensis* and *Drepanostachyum annulatum* occur in natural as well as in cultivated forms, whereas the another *B. nutans* subsp. *nutans* exist only in cultivated stands.

To state the pattern of bamboo distribution in the study area five categories of frequency class has been mentioned by Manandhar and Bhattarai (1998) was used in which A: abundant with more than 20 culms; C': common with 10 to 19 culms; F: few having 3 to 9 culms; and R: rare with 1 to 2 culms.

**Table 4.3**

### **Distribution of Bamboos in Kirtipur MC and Their Local Names**

S. N.	Species	Local Names	Distribution (Field)	Distribution (Frequency )
1.	Bambusa Nepalensis	Tama Bans	WC	A
2.	B. Nutans Subsp. Nutans	Taru Bans	C	F
4.	Drepanostachyum Annulatum	Ban Nigalo	WC	C'

(Source: Field Survey, 2009/2010)

**Field:** - C: cultivated; W: Wild; WC: Wild as well as cultivated

**Frequency:** - A: abundant with more than 20 culms; C': common with 10 to 19 culms; F: few having 3 to 9 culms; and R: rare with 1 to 2 culms (Source: Field survey, 2009/10).

In the field of the study area, *Bambusa nepalensis* is the most common species occurring. Another species, *Drepanostachyum annulatum* is categorized as second widely occurring species and is found to exist in the same farmer's field where *B. nepalensis* exists. Whereas one of the species of *Bambusa*, *B. Nutans* subsp. *nutans* is found only in field not in the forest. From the survey, it is found that all the families aren't taking it as cash plant, it is naturally cultivated.

#### 4.3.2 Utilization of Bamboo Resource in the Study Area

There are no other plant species with as many utility as bamboos. Among the available three different species of bamboo, *B. nepalensis* is the most commonly used species in the study area. It serves as the main raw material for craft making business in the area. Various traditional household appliances like *Nanglo*, *Chalne*, *Doko*, *Dalo*, *Mandro* and *Ghum* are made from this species. It is also used for making different types of baskets, racks, dustbins, handicraft items and innovative value added products such as handbags, tea-cup mats, decorative items and flower vase for export purpose. Old and matured culms are occasionally used in scaffolding and other constructional works. The spilt culms of this species are used for fencing and roofing. Young shoots of this species are consumed as edible shoots. Its leaves are used as fodder for domesticated animals. This species assists in soil stabilization. The remains of handicraft work used as supplementary fuel. The species is useful in all kinds of general fieldwork.

Another species, *B. nutans* subsp. *nutans* is used sparingly in the study area. Local craftsmen hardly make use of this species in craft making and other purposes. However, the old culms of this species are harvested for constructional purposes. Occasionally, this species is also used for making different types of baskets, handicraft products and light furniture. Leaves of this species are used as good fodder at the place where they are found. Their growth helps to check soil erosion.

*Drepanostachyum annulatum* found in the area is used for making light furniture like bookracks and shoes rack. They are also used in weaving baskets and mats. The foliage of this species is fed to livestock as fodder. This species also helps in soil conservation. It is also used as garden props.

**Table 4.4**  
**Bamboo Species Preferred among the Respondents**

S .N.	Particulars	<b>Bambusa Nepalensis (Tama Bans)</b>	<b>B.Nutans Subsp. Nutans (Taru Bans)</b>	<b>Drepanostac-hyum- -annulatum (Ban Nigalo)</b>
1.	Weaving material	* * *	*	*
2.	Racks	* * *	-	*
3.	Edible shoots	* * *	-	-
4.	Construction	* * *	*	-
5.	Fencing	* * *	*	-
6.	Soil stabilization	* *	*	* *
7	Fodder	* * *	*	* *

Highest (\* \* \*), Medium (\* \*), Lowest (\*), Nil (-) (*Source: Field Survey, 2009/10*)

### **4.3.3 Socio-Economic Importance of Bamboo Based Work in Kirtipur MC**

Bamboos are one of the very important sources of livelihood for the rural people in Kirtipur area. Moreover, they have a unique and significant role in the lives of people. Bamboos have received high social and economical value in the study area.

The natural forests are the main source of bamboo supply. Over-exploitation and shrinkage of the habitat has resulted into bamboo resource depletion at an alarming rate. Nevertheless, an attempt to manage the resource and rehabilitate the forests technically is lacking. The main reason for this is the insufficient research on the field of bamboo sector.

The limited availability of the bamboo resource base in the study area has caused a profound socio-economic impact on community who depends on bamboo for their livelihood. With the depletion of forest, bamboo has also been dwindling fast as the forest management cared only for firewood, fodder and timber production. The bamboo in the forest has not received the attention of the forest managers as they deserved. There is thus a need of sustainable forest management that can provide timber, fuel wood and fodder and also the adequate raw material such as bamboos for local and industrial uses.

Human interference is the main cause of environmental degradation. Rapid growth in population exerts heavy pressure on limited natural resources. Bamboos at present are one such resource in a wait to receive proper attention. Bamboos, which have been playing a vital role in improving the economy of the rural people, especially the underprivileged people, are in need to be identified and prioritized in the present study area.

The potential role which bamboo could play in rural development and conservation of environment and bio-diversity is remarkable. There is a lack of proper management of bamboos, its cultivation and harvesting. Also, no measures are taken to enhance the quality of the goods and awareness to market value added products are not forthcoming as well. Likewise, efforts are lacking for increasing their production to



expand their business. Adequate measures for generation of employment and income are lacking due to poor management.

#### 4.3.4 Education Background of the Respondents

Female, uneducated persons are involved in business. Now there is need of better educated persons to run this business. They must develop community forest for bamboo business with new technology. The obtained data shown below in the table represents the educational background of the respondents and their responses for the research.

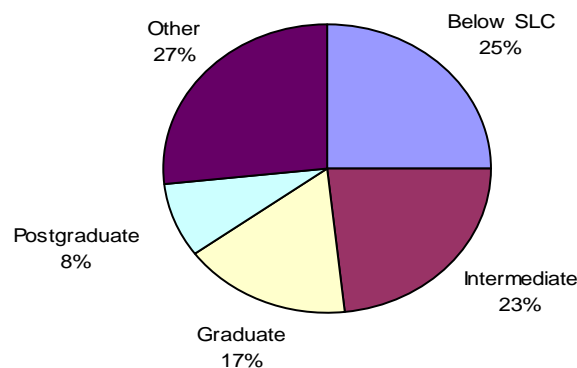
**Table 4.5**  
**Education Background of the Respondents**

<b>Education</b>	<b>No. of Respondents</b>	<b>Percentage</b>
Below SLC	15	25
Intermediate	14	23
Graduate	10	17
Postgraduate	5	8
Other	16	27
<b>Total</b>	<b>60</b>	<b>100</b>

(Source: Field Survey, 2009/2010)

Diagram for the above- tabulated data is shown below:

**Figure 4.2**  
**Education Background**



Above table and chart reflects the educational background of the respondents. Of the total 8% of the respondents are post-graduate, 17% graduate, 23% intermediate, 25% under SLC and 27% of the respondents are literate or even illiterate.

#### 4.3.5. Annual Family Income

Bamboo selling isn't fully their business; they have other income sources too. It is only part of small business. To fulfill the objective of the research, researcher took data on annual family income of respondents, which are shown in table-4.3.5. During the interviews, most of the respondents hesitate to disclose their actual monthly turnover. Majority of the entrepreneurs do not have proper balance sheets to keep record of the sales. They calculate turnover and profit-loss based on their judgment or simply guesses.

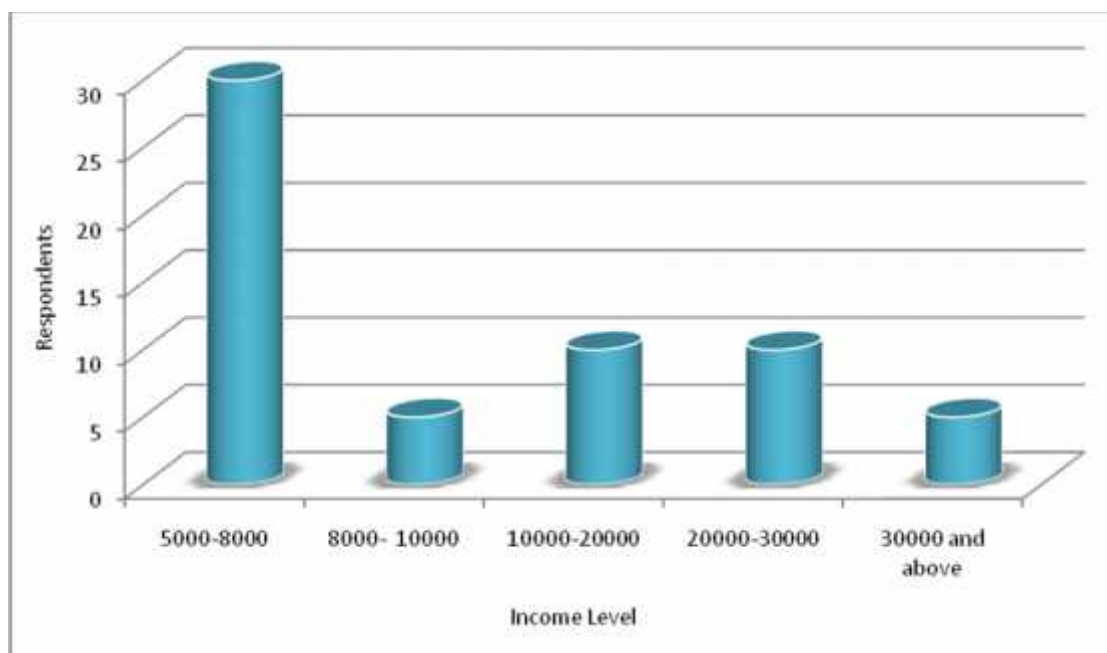
**Table 4.6**  
**Annual Family Income**

<b>Annual Family Income</b>	<b>Respondents</b>	<b>Percentage</b>
5000-8000	30	50
8000-10000	5	8
10000-20000	10	17
20000-30000	10	17
30000 and above	5	8
<b>Total</b>	<b>60</b>	<b>100</b>

*(Source: Field Survey, 2009/2010)*

Diagram for the above-tabulated data is shown below:

**Figure 4.3**  
**Annual Family Income**



According to research; high respondents have low annual income. Thus concluding they need to focus on bamboo business in a group.

#### **4.3.6 Cultivation and Harvesting Practice System of Bamboo in the Study Area**

In the study area, *Bambusa nepalensis* followed by *Drepanostachyum annulatum* are two bamboo species favored by the local villagers for cultivation. The plantation is carried out by vegetative multiplication method achieved by planting culm offsets with rhizomes. This is the traditional method of bamboo propagation in which 2-2.5m tall offsets with undamaged dormant buds at rhizome from 2 years old culms were selected for planting during the months of June-August.

Among the existing species in the study area, *Bambusa nepalensis* is the main bamboo species used and harvested. They selectively harvest culms of 2-3 years old for weaving twice or thrice a year during the months of November-February and much older culms are harvested for fodder and construction. Harvesting is also practiced in other months of the year as per work demand except in between mid-March to mid-May (Baisakh-Jestha).

#### 4.3.7 Availability of Raw Material in the Study Area

The study area fulfills only a very small portion of the raw material requirement of bamboo enterprises. But some farmers export to them to Katmandu Valley instead selling to local entrepreneurs. The main suppliers are outsourcers. Comparatively, supply from the homestead areas and farmlands are very low. They generally keep the culms secured for emergency need.

**Table 4.7**  
**Annual Harvesting of Culms of *B. Nepalensis* from the**  
**Field of Study Area (Average)**

S. N.	Source Area	No. of Culms Harvested at a Time	Frequency of Harvesting in a Year	Total Culms Harvested
1	Kirtipur MC-8	40-60	2-3	80-180

(Source: Field Survey, 2009/10)

Bamboo resource available in the study area is not sufficient to fulfill the requirement of bamboo based craft making business. Thus, the local craftsmen get supply of the raw material from various places including neighboring marketers like from different places of Katmandu Valley (Retail shops).

In contrary, the survey found that the annual consumption of raw materials by the sampled respondents exceeds greatly than the local production. Maximum respondents i.e. 15 respondents consume 150-200 culms; while in minimum, 4 respondents consume 300 culms in a year. In total, the annual consumption of the total surveyed respondents ranges to 5264-6700 culms.

**Table 4.8**  
**Annual Consumption of Bamboo Culms by the Sampled HHs (House Holds)**  
**in the Study Area and Surroundings**

S.N.	No. of Culms Purchased/Consumed	No. of HHs	Total Culms Consumed
1.	150-200	15	2250-3000
2.	201-250	10	2010-2500
3.	251-300	4	1004-1200
	<b>Total</b>	<b>29</b>	<b>5264-6700</b>

(Source: Field Survey, 2009/10)

Craftsmen usually visit bamboo forests directly to collect the raw material (bamboo culms) in a group composed of members of 3-4 households. Reaching the site, they talk preferably with the bamboo growers and make an agreement. Then they

themselves enter the private bamboo forest with cutting devices like axe and knives to fell, load and reload the materials from the site to their native village. Going together in groups allow them to save extra expenses spent in vehicle fare. Depending on the type of vehicle and the distance of the source site, a single reserved trip charges NRs 500-1500 excluding the price of raw material.

From the survey, it is found that there is considerable difference in the price of the bamboo culms purchased from outside and from the local village. Locally, the price of a single culm ranges from NRs 40 - NRs 150 whereas those bought from outside cost NRs.80 - NRs 160 per culm depending on culm size and species.

#### **4.3.8 Production and Marketing of Bamboo Artifacts**

##### **4.3.8.1 Bamboo Processing Technique and Methodology**

Fresh raw material is found to be used directly to make various bamboo artifacts. Local craftsmen in the study area have their own traditional method of bamboo processing and craft making. On average, the craftsmen in the study area are found to work for 4 months in a year.

For weaving, generally the craftsmen directly use freshly cut culms to prepare goods. They remove lateral nodes from the culms and smooth them with knife. Likewise, softer parts of bamboos are also removed to protect it from insect attacks. The culms are then cut into pieces as per required size, followed by splitting (*choya* cutting) them into thin stripes. Such stripes are dried in the sun for twenty four hours during summer and thirty six hours during winter and are used for weaving. While in case the craftsmen are to use the old stored dry culms harvested before, which are generally preferred for making racks and lighter furniture, such stored culms are first cut into pieces as required and immersed into water for about 2-3 months or even longer to soften them as well as to make it disease resistant.

Beside this, some craftsmen are found to expose the bamboo culms to smoke created in kitchen or by burning process. Besides, the local craftsmen in the study area are not found to use or be acquainted with any other advanced processing technologies that would add more longevity and quality to their local products.

The treated culms are further cut into the required size and are dried in the sun. Such well-dried materials are used to make the desired products with the help of various traditional tool/equipment. During the process, few other materials are used, such as *Listi* of *Alnus nepalensis* for framing, plastic stripes/ropes for binding and finishing, nails for joining and *Acacia catechu* (*Khair*) and soda for colouring purpose are used. These extra materials are purchased from the local place or from market places. Products made are checked thoroughly for the extra makeover as the final touch. Craftsmen prefer to sell the products in the market as soon as they prepare them.

#### 4.3.8.2 Major Products Dealt by Bamboo Entrepreneurs

Majority of the entrepreneurs deal with traditional household products like *Nanglo*, *Chalne*, *Doko* and *Dalo* and few new products like racks, dustbins and baskets (Table 4.9). These products have different demand at different time. From the survey, it is found that *Nanglo* and *Chalne* are in top demand priority. *Doko/ Dalo* lie in the second category followed by rack and dustbin. Similarly other innovative value-added bamboo products like Tray, Lampshade, Photo frame, fruit basket, clothes hanger, flower vase, pencil stands, worship baskets, and many other decorative items can be made using bamboo. The average cost price, selling price and production rate of some of the bamboo products they make given in the Table 4.10.

**Table 4.9**  
**Major Products Dealt by the Respondents and Their Demand**

S.N.	Items	Demand Ranks
1.	<i>Nanglo/ Chalne</i>	1
2.	<i>Doko / Dalo</i>	2
3.	Racks	3
4.	Dustbin	4
5.	Photo frame, decorative items, etc.	5

(Source: Field Survey, 2009/10)

**Table 4.10**  
**Economical Account of Some Bamboo Products**

S.N.	Name of Items	Avg.C.P. (NRs/ Piece)	Production Rate (Piece/Person)	Avg.S.P. (NRs/Piece)
1.	Small <i>Nanglo</i> (20" diameter)	25	½ day	45
2.	Big <i>Nanglo</i> (22" diameter)	35	1day	60
3.	Rack	80	1day	120
4.	Dustbin	100	2days	200

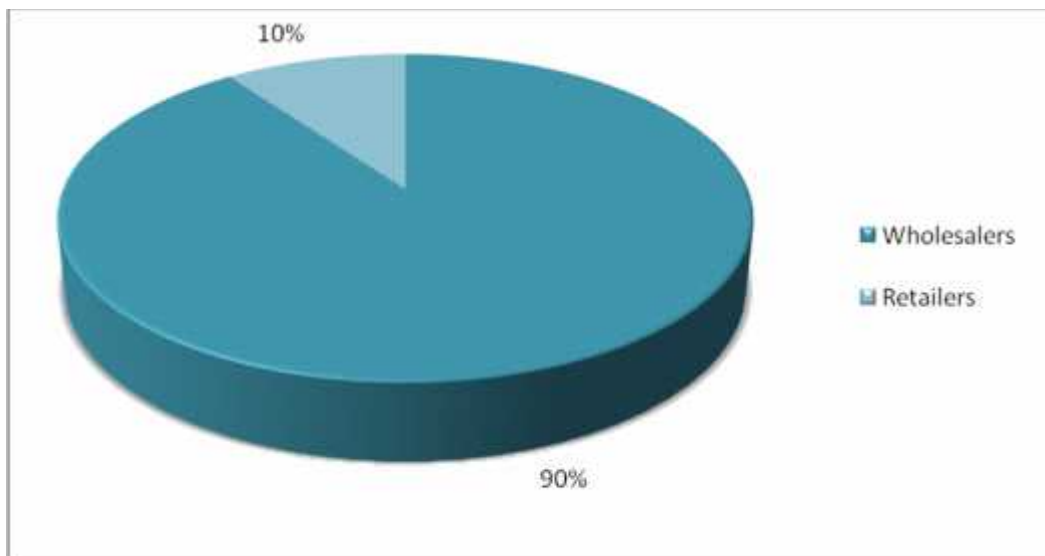
5.	<i>Chalni</i> (filter purpose)	20	½ day	40
6.	Small <i>Doko</i>	60	1 ½ days	100
7.	Big <i>Doko</i>	100	2days	150

(Source: Field Survey, 2009/10)

#### 4.3.8.3 Composition of Distribution Channel

The process being, when a buyer, (agent, wholesaler, retailer) place order to the farmer with a programmed contract of quantity, size, price and delivery time. The raw bamboos are accumulated by the buyer or his authorized agent and approves for transportation.

**Figure 4.4**  
**Distribution Channels**  
**(Sales through Retailers and Wholesalers)**



The farmers have not their own distribution sells in markets of countries. About 90% or more sales go to wholesalers and only 10 % sales go to retailers. One more area of investigation is market size. There is no official arrangement to ensure a permanent supply of raw bamboo to the ever-growing industry.

#### 4.3.9 Competitive Market Structure of Bamboo

A nation will specialize in the production of the goods of services, which utilize to a great extent its abundant resources, those which are relatively more plentiful. These are the resources in which it has a comparative advantage. But a business normally

does not operate in an isolated environment. For each product, there is other product(s) on the market, or in the process of being developed.

The structure of the market in which a country must operate is determined by the nature of the products being manufactured and sold as well as by the number and size of the countries in competition, and next, the types of consumers being targeted (Kotler, 1986:11).

Economists usually group market structure into four basic categories- **monopoly, monopolistic competition, oligopolistic competition and pure competition**. A simple study of the performance of competitors is not enough in the study of competitive market structure. It is necessary to identify the particular sources of success of each competitor in the market. Is it low price? Patents? Product quality? Extent of product line? Brand image? Service? Location? Company size? Channels of distribution? Effectiveness of promotion and communications? But to analyze all of them are out of scope of this study. So a simple analysis on some components of market structure as being in practice of markets of bamboo in Katmandu Valley.

#### **4.3.10 Compleitive Scopes**

The focus of all marketing effort is the consumer. It is not a simple job to identify and attract consumers. And the buying season of bamboo is winter season (Katrik to Poush). The consumer's taste and preferences are affected by the size, color and thickness. Another parameter of measuring consumer type is the economy of the people. "A market requires not only people and willingness to buy, but also purchasing power and the authority to buy". One of the important features of bamboo is that it is economically accessible to all class of the people, who need. It can attract the fallings of people for having a handicraft item. The consumers also used to buy Nepali handicraft but, there is no specific consumer group buying raw bamboo. They do compare the price, quality of the bamboo while buying according to their and market need.

#### **4.3.11 Price Structure**

Pricing is a crucial decision in marketing. In economics pricing has been approached in different ways, such as pure competition, oligopoly or monopoly. These constitute



the overall market structure. The price structure is the unified relationship of pricing on demand and time factors influenced by difference in consumer behaviors, competitive response, the firm's cost, structure, profit objectives, government regulations and exchange rate.

The price structure is influenced by following factors:

**Firm, Market, Product, Environmental Factors**

They must sell at the price, over which the buyers have more control.

**4.3.12 Sales Literatures, Catalogues and Sales Promotion**

Sale promotion of a diverse collection of activities having the characteristics of communication, short term incentives. They may be targeted to consumers or middlemen buyers. On the other hand, sales literature catalogues and brochures, also tools of communication and invitation are considered as direct marketing tools. But, Nepali bamboos are not in practice with indirect marketing. However, they use the tools such as direct contact by phone or field visit.

**4.3.13 Public Relation and Social Factors**

Public relation (PR), even though seen less utilized, is an important promotional tool. It has great potential for building awareness and preference in the marketplace. Public relation programs can improve, maintain or protect a company or product image. The image of the farmer regarding the product is essential for marketing. The public relation is concerned with the publicity of the product. Good PR is good corporate communication, diplomacy and behavior. More questions arose on the supply side like raw material, labor, finance – social values and norms, and environment. Public reaction is good reaction with the public, and the public of the firm are broader than its market. They include all those who are affected by the firm's operation and all of them can affect firm's success. They include customers, general public, investors, government, media, laborers, suppliers, lobby groups and distributors.

The concerns of public activities group and media were the child labor. Except female labor and pollution's, child labor is not a new source of labors. They aren't taken in consideration as buyers will bring bamboo cutters, as well transportation manpower.

#### 4.3.14 Transportation

Transportation plays a role of a facilitating agency in total distribution channel system. But, one of the major bottlenecks in development of Nepal, is its geographical condition. Difficult mountain terrain and the land-locked ness pose serious challenges for the development of the logistic system in the country. The country has limited modern transportation network and a major part of the country still depends on the human labor for transportation of goods. This is a major cause that most of the goods are concentrated in Katmandu Valley.

The problems of transit, transportation, warehousing and insurance have always been obstacles to Nepal's export trade. In regard to internal transport, there is lack of government incentive on transport. Procedures and physical facilities and services are other problems for farmers.

#### 4.3.15 Employment Opportunities

It is categorized as bamboo cutters and other side of bamboo business like in handicrafts, hut-makers, builders and transportation. Male and female both are engaged in employments. But there is more scope if utilized properly. Only some 1-2 percent of people are engaged in handicrafts, less than 1 percent as field observer. There is low rate of wages for field work. Some of the rates are organized below.

**Table 4.11**  
**Employment Opportunities (Average/Annual)**

	<b>Semi Skilled (Men and Women)/Rate</b>	<b>Unskilled (Men and Women)/Rate</b>	<b>Total</b>
<b>Daily Wages</b>	2/200	3/180	5
<b>Contract</b>	3/180	5/150	8
<b>Temporary</b>	2/200	3/180	5
<b>Permanent</b>	Not Countable	Not Countable	-

*(Source: Field Survey, 2009/10)*

Concluding with community forests, well managed by educated people is required to fulfill the employment opportunities as well to increase annual income and to upgrade the business whether raw materials or final products.

#### 4.4 Problems on Market

There are different problems in the marketing of bamboo. Major problems are discussed below briefly.

) **Lack of Research**

Research work on consumer's behavior on product and their needs and wants should be done. The research work in handicrafts industry (bamboo), in marketing and production is very essential, but it is lacking greatly.

) **Competition**

There are keen competitions among different handicrafts materials in market. Farmers must take attention of their production as well quality of raw materials.

) **Problem of Promotion**

Today's world is a world of promotion of the product. To take the market different types of promotional tools should be used like as advertisement, personal sells. and intensive promotion about the bamboo market and its qualities.

) **Lack of Information Technology**

The marketing strategies can be made based on information accessed through internet as well by using new techniques of production using modern tools.

) **Problems on Price Discrimination**

The pricing of raw bamboo should be done as market position but it has not found in practice. The price of bamboo cannot be discriminated according to market's position.

#### **4.5 Problems on Production**

There are significant effects of production on consumption of products. Production function is very important in marketing of any goods and services. The requirements of customers and their interest and ability to pay should be considered on production functions. Raw bamboo could not meet market's interest; as a result, it has lost its market share. The problems on bamboo productive can be listed as follows.

) **Child Labor Problem**

Child labor is being used in most places as bamboo cutters to get high profit by giving low wages to child labor. The government and private sectors whatever the facts, workplaces should be free from child labor.

) **Problems on New Technology**

Nepal has not been able to take new products except old bushes. Farmers are unable to use new tools in the field.

) **Lack of Skilled Manpower**

There are not adequate training facilities to develop the production skills, which have also affected bamboo marketing.

) **Social and Environmental Problems**

There is no doubt that bamboos have helped support the country's economic as well as provide employment to a large number of people. However, bamboo's has indiscriminate use led to environmental as well as social problems. People are using as fuel which has adversely impacted the environment.

#### **4.6 Other Problems**

Instead of these above mentioned problems, some other important problems are attached with

- ) Pressure of Maoist's trade union
- ) Child labor problems
- ) Intra-competition between domestic manufactures (Farmers)
- ) Lack of legal provision
- ) Lack of security for local market
- ) Lack of Establishment of employee training center for the production of qualitative product
- ) Import of low quality raw bamboo by the Nepalese entrepreneurs except using Nepalese product

#### **4.7 Future Prospects of Nepalese Market of Bamboo**

Bamboo is a main source of earning. The past has been studied and people have learned from it. They now know that they will grow steadily in the coming years if they controlled overproduction and maintained quality. Even through the prices may never be what they once were for some people. At this time, price ranges from farmer

to farmer and it is quite difficult to tell the fixed rate for a piece of bamboo. Being economically poor country, domestic sale of bamboo is negligible instead import is facilitated. The government recognizes the tremendous harm that the country's economy may take in the bamboo business if neglected. The most important step is to bridge the huge gap between the rates of different producers. Because some people are selling at a lower rate. Unhealthy competition has affected many. An important factor that may help the farmer is publicity. Every taste has to be studied thoroughly, whether it is in Katmandu or outside. Nepalese entrepreneurs can't afford to miss any business opportunities because of lack of information.

As long as there is full confidence among the manufactures, sellers and importers on the bamboo positive factors, there is little to worry about. The market is out there. One thing which is out to keep in mind is the quality of the product and the brand.

On the other hand the world's trade system has improved. The super power organization like WTO is doing well and it is providing the umbrella forum to penalize the trade norms violators.

Being a least developed country, Nepal can derive sound and reliable benefits by following the various WTO principles. WTO provides for a proper level playing field such as the most favored nation (MFN) status to all member countries. LDC like Nepal will not be discriminated with the other trading partners including DCs like USA, Germany and Japan. Similarly, the discrimination will exist between one's own and foreign products and services where by they are given national treatment.

It provides for free trade, gradually through negotiations by means of progressive liberalization whereby trade barriers like customs duties, import bans or quotas are lowered to encourage trade. It has made the business environment stable and predictable. The countries are bound by their markets for goods and services. This invites regular surveillance of the national trade policies and transparency in multilateral trade rules.

WTO promotes open fair and undistorted competition by discouraging 'unfair' practices, such as export subsidies and dumping products at below cost of gin market

share. It is more beneficial for a LDC like Nepal as more time has been given to adjust to WTO rules. Special privileges and greater flexibility have been allowed to accelerate market access commitments.

Nepal, having cheap and leisure labor force, has a competitive power on different industries which leads it to the world market. On the other hand, since WTO provides the regular monitoring duplications of the morality can be discouraged and the penetration on the world market may be continued instantly.

The concept of making Nepal a transit point between a India and china obviously plays vital role for the promotion of Nepalese market in the world. This consequently reduces productions and cost increases competitive power, which will be vital to compete in the world market.

In the future, the Nepalese bamboo needs to be exposed to fresh markets. Trade fairs and conferences will be very important resources for the Nepalese industry. With proper strategies, Nepal, may in time, take the first place among the world's top ten exporters.

#### **4.8 Major Findings**

- ) Agricultural sector alone is not sufficient to provide employment to the farmers and utilizes bamboo and their family for the whole year as farming does have a seasonal nature.
- ) Thus market based income generation activities are necessary. Desirable in this connection may be the two models - family based micro credit schemes and cooperatives based on group dynamics – to be implemented in a number concentration area. The government should take a lead role
- ) Direct sales strategy or personal selling method is most successful while selling the bamboo.
- ) Credit sales is very important to maintain the flow of sales
- ) Kathmandu is the main place to sell bamboo than other cities of Nepal.
- ) Customers ranging from 16 to 35 years of age are more likely to buy bamboo for their use.
- ) Due to the market problem, farmers aren't continuing the production.

- J Size, types and the features are the major factors affecting bamboo buying decisions.
- J Child labor is being used in most of the places as bamboo cutters to get high profit by giving low wages to underage workers.
- J The pricing of raw bamboo and its product should be done as market position
- J Respondents claim that they themselves are the decision makers for buying bamboo as their need and demand.
- J Need of new technology for production, harvesting, distribution and utilization too.
- J Need of better educated persons to run the business with development of community forest in the local area.
- J It is a main duty of the government to take necessary steps to solve the problem of market and field of bamboo production by providing special guidelines with new technology.

## **CHAPTER –V**

### **SUMMARY, CONCLUSION AND RECOMMENDATIONS**

Having completed the basic analysis required for the study, the researcher must point out the mistakes and errors and also give suitable suggestions for further improvement.

This study is mainly based on primary sources. All data are taken from concerned fields with some secondary data. After collecting data from different sources; it is analyzed by using statistical tools. Findings are drawn by applying various statistical tools have been used viz. mean and coefficient of correlation.

In an attempt to fulfill the objectives of the research work, all primary data are compiled, processed and tabulated as per necessity and figures, diagrams, different types of chart are also used.

This study suffers from different limitations; it considers only small field and time and resource are the constraints of the study. Therefore the study may not be generalized in all cases and accuracy depends upon the data collected and provided by the persons (farmers, entrepreneurs).

#### **5.1 Summary**

The economic growth was very slow in the previous year; it has caught its full selling with the restoration of democracy in the country. At present, overall economic growth rate still declines year by year. Reasons behind this decline are insecure situation faced by industry, decrease in tourist arrival, drop in the production and export of bamboo products and political situation and activities of Maoists.

Scattered resources have no meaning and importance until and unless they are mobilized and utilized efficiently in some productive sectors of nation's economy. The agriculture sector which would help uplifts the entire economic development of



the nation. The goal of economic development cannot be achieved without strong capital base entrepreneurship.

The first chapter of the research paper highlighted the introduction and background of bamboo and its species introduced by different scientists, the statement of the problem and set the objectives for the study purpose.

The second chapter reviewed the literature of the related studies, the study done by various researchers in the field of bamboo either anatomical or marketing purpose. Review of related books, journals and magazines that add to the efficiency of the present study.

Third chapter basically set the research methodology; various sequential steps, methods and tools that have been chosen for the research purpose.

Fourth chapter is the presentation and analysis of the primary as well as secondary data collected for conducting the study. This chapter is the main pivot on which findings of the study are based.

Fifth chapter is the Conclusions of the study on the basis of above interpretations and analysis of findings. On the basis of these findings, recommendations are made to the concerned authorities to make their functioning better.

## **5.2 Conclusions**

Being a land-locked country, Nepal is dependent upon agrarian economy. Nepali labor and skills are used mostly for agricultural purpose. Developing countries like Nepal are facing serious problems in the economic progress. Lack of sufficient financial resources is the main constraint for economic development of Nepal. The strong economic structure is needed for the rapid overall development.

The geographical structure of Nepal is a major bottleneck in the development of export sector. There is no government incentive on the transport. The financial constraints and lack of technical knowledge are the main causes.

Ending child labor, reallocating industries, pollution control and employees' welfare by developing infrastructure and incentive package. Some policies then adopted also

could not be implemented because they were conflicting and discouraging the entrepreneurs.

In the research paper various financial tools have been incorporated to show its marketing and financial performance. Its respective growth, strengths and weaknesses, opportunities and threat areas, management of human resources strengths, marketing and socio-political weaknesses, organizational difficulties and its progress have been incorporated in the research paper in the subsequent chapters. The literature has been reviewed and the opinions of different fellow researchers been incorporated to emphasize the subject matter and arrive at more meaningful conclusion.

On the basis of the findings of the study, few recommendations have been made, which would provide good opportunity for all persons or marketers to analyze its strengths, weaknesses, opportunities and threats and learn from their past weaknesses.

The rapid growth of industries in Nepal has created its own problems and competitions. The entrepreneurs of bamboo product have faced different trouble in production, exporting channel and marketing. They do not feel safe on their business, in production, they cannot get bank loan easily. Due to lack of capital and government support they have been facing serious problems in market promotion activities.

They are working without proper guidance and effective plans. Lack of activities on market survey, information and marketing intelligence system, promotion and publicity campaign have further snagged the bamboo's marketing and promotion.

Last but not least bamboo marketing is very important for country's development. Despite being a very important factor, marketing of bamboo has not been effective. So entrepreneurs should be very active in marketing activities and the government should safeguard bamboo market.

### **5.3 Recommendation**

The targets of all marketing efforts are the consumers. But, the task is concerned with promotional planning. A promotional strategy requires information flow from several sources, such as markets, competitors, government and other external institutions and

publics as well as from inside the firm. These are impinged by the demographical, technological, economic, socio-cultural, legal and political factors. To be operational, promotional strategy decisions must be communicated to all members responsible for its implementation, including the distribution channel members and lobby groups, since feedback is essential to control results in accordance with planned objectives. For these marketing activities like, marketing research, promotion and product delivery must be done.

Market promotional activities like advertising through different media and demonstrations, trade fair are very essential to promote of bamboo marketing.

It is also necessary to solve infrastructural constraints, such as transportation in domestic market, efficient manpower development, quality control and checking before expecting standard market and good supply.

Entrepreneurs should be transparent in labors' welfare and wage system. The government should develop appropriate infrastructure, incentives and policies to encourage the entrepreneurs to re-locate industries and control environment pollution.

The government job is not to act as a private business sector. But it has to create good environment and safeguard private business firms and farmers.

The government should provide loan and other facilities to entrepreneurs without hassles; would encourage them to produce bamboo in required quantity.

The mail-marketing and personal visits are, nevertheless, good practices to create good channel relation. Still, comparative advertising and consumer influencing publicity campaign is needed in continuous operation. The campaign should be in the new potential areas as well as in the existing markets.

The planners and entrepreneurs should understand the comparative advantage of the product, pricing, distribution and product development. Product competitive scopes and market potential, conterminous information, persuasion and influence of product quality and new strategies should be stressed.

## BIBLIOGRAPHY

- Adhikary, N. *Economic Potential of Bamboo for the Traditional Users in the Modern Economy* in [www.abari.org/economic](http://www.abari.org/economic).
- Agrawal, G.R.(2004). *Fundamentals of Marketing*. Kathmandu: M.K. Publishers & Distributors.
- Agrawal, GR. (2009). *Marketing Management in Nepal*. Kathmandu: M K.Publishers & distributors,
- Alderson, W. (1975). *Marketing Behavior and Executive Action*. Richard D. Irwin Home Wood.
- Community Forestry Case Study No. 4*. FAO, Thailand: Bangkok. ([www.inbar.int/documents/country\\_report/nepal.htm](http://www.inbar.int/documents/country_report/nepal.htm)).
- Das, A.N. & Seeley, J.A. (1996). *Bamboo Use as the basis for Wealth Ranking in Eastern Nepal, Banko Janakari*.
- Das, A.N. (1991). *Training Manual on Bamboo Propagation*. Prepared for Rapti Integrated Rural Dev. Project, Nepal.
- Das, A.N. (1998). *Socioeconomics of Bamboos in Eastern Nepal*. PhD Thesis, University of Aberdeen, UK.
- Das, A.N. (2004). *Manual of Bamboos of Nepal. Community Forestry Component. Tree Improvement and Silviculture, Ministry of Forests and Soil Conservation, HMG/Nepal*.
- FAO (1978). *Bamboo forest news for Asia and the Pacific. Food and Agricultural Organizations*, Bangkok, Thailand.
- FAO (1990). *Case Studies in Forest Based Small Scale Enterprises in Asia, Rattan, Matchmaking and Handicrafts*.
- Hara, H.W.T., Stearn, W.T. & Williams, L.H.J. (1978). *An Enumeration of the Flowering Plants of Nepal*. London: British Museum (National History).
- Karki, M.B. & Karki, J.B.S. (1995). *National Bamboo and Rattan Information Database*. Pokhara: Tribhuvan University, Institute of Forestry, Nepal.
- Kelly, E.J. & William, L. (1972). *Marketing*, Homewood, Illinois: D. Irwin, Inc.
- Kigomo, B.N. (1988). *Bamboo Resources in East Africa*: In Rao I.V.R., R. Gnanaharan, C. B. Sastry (eds.), *Bamboos Current Research*, Proceedings of the International Bamboo Workshop, 14-18, November, 1988, Cochin, India,

- Proceedings of the International Bamboo Workshop. India  
[URL:http://www.inbar.int/publication/txt/INBAR\\_PR\\_02.htm](http://www.inbar.int/publication/txt/INBAR_PR_02.htm)
- Koirala, K.D. (1997). *Fundamentals of Marketing Decisions*. Kathmandu; M.K. Publishers & Distributors.
- Koirala, K.D. (2006). *Marketing Research*. Kathmandu: Buddha Academic Publishers and Distributors.
- Kothari, C.R. (1992). *Quantitative Techniques*. New Delhi: Vikash Publishing House Pvt. Ltd.
- Kotler, P.(2000). *Marketing Management*. Ne Delhi: Prentice Hall, Inc.
- Manandhar, R. & Bhattarai, T. (1998). *Distribution of bamboo in Kathmandu Valley*. Kathmandu.
- McCarthy, E.J. (1987). *Basic Marketing*. New York: Universal Book Stall.
- Metz, J.J. (1987). *An Outline of the Forest Use Practices of an Upper Elevation Village of West Nepal*.  
*Part II Field Document No 20, HMG/FAO/UNDP, Community Forestry Development Project (Phase II), May 1992.*
- Peter, B.D. (1995). *Dictionary of Marketing Terms*, AMA, Chicago, USA.
- Poudyal, P.P. (1992). *Bamboos-Field Manual for Community and Private Forestry in Nepal*.
- Schiffman,, L.G. & Kanuk, L.L. (2000). *Consumer Behavior*. Ne Delhi: Prentice Hall.
- Shrestha, S.K. (1992). *Marketing Strategy and Management*. Kathmandu: Padme Educational Traders.
- Stanton, W.J. (1994). *Fundamentals of Marketing*. New York: McGraw-Hill.
- Sthapit A.B., Gautam, H., Joshi, P.R, & Dongol, P.M. (2004). *Statistical Methods*, Kathmandu: Buddha Academic Publishers and Distributors.

**Websites:**

<http://en.wikipedia.org/wiki/Bamboo>

<http://www.inbar.int>

[www.abari.org/economic](http://www.abari.org/economic)

[www.inbar.int/country report/Nepal](http://www.inbar.int/country_report/Nepal)

## APPENDIX- I

Dear All,

I am very glad to inform you that this questionnaire has been prepared with a view to collecting information for a research study entitled “Marketing research on Bamboo (A case study related to kirtipur municipality-8)” for an M.B.S dissertation under the guidance of Mr. Isower Raj Lohani, SDC (Tribhuvan University, Kirtipur), Putalisadak, Kathmandu. I hope you all co-operate in making this study complete by supplying necessary information to all the questions in the questionnaire. As the information you provide will have significant contributions not only to this research work but also for the development of the sector. At last I assure you all that your responses/information will not be used for other than this proposed research work.

I would like to express my gratitude to you all for your kind co-operation.

Thank you

Parmila Basnet

The Researcher

SDC

Putalisadak

Kathmandu



## QUESTIONNAIRE

This questionnaire is prepared for the collection of primary data. It is only for the partial fulfillment of the requirements for the Degree of Master in Business Studies (MBS).

Correspondents are requested to fill the answer honestly, so that the findings may represent the facts about the marketing study of bamboo in Nepal (Kirtipur MC:-8)

### Personal Profile:

Name: -----

Address: -----

Age: -----

Sex: -----

Mother Tongue: -----

Education: -----

Contact Number: -----

### Questionnaire for Farmer

#### Please Give the Correct Answer:

1. How do you identify suitable bamboo for marketing?
2. How long have you been concerned for selling of bamboo?
3. How many companies are involved in this business?
4. How many farmers and marketers are involved in this business?
5. What is their contribution in national economy?
6. Do you think the available source of manpower meet the actual goal?
7. Why is marketing of bamboo necessary?
8. Are there different types of bamboo? What are they?
9. What are the equipments required for the processing of bamboo?
10. Are those equipments readily available in Nepal? How much do they cost?
11. Does the government have any policies and rules regarding its collection? If yes, please describe in brief.



12. How many numbers of employees are related towards marketing of bamboo?

	<b>Semi Skilled (Men and Women)</b>	<b>Unskilled (Men and Women)</b>	<b>Total</b>
<b>Daily wages</b>			
<b>Contract</b>			
<b>Temporary</b>			
<b>Permanent</b>			

13. How many are working as distributors of bamboo towards the kathmandu valley?

14. Out of the total product of bamboo bushes, what quantity is sold out in the home market? Mention in Rs.

15. Does the state political instability affect the bamboo marketing? If yes, how?

16. What is your annual turnover of the bamboo at present?

17. What turnover do you expect to be if there was no Maoist insurgency in the past?

18. What measures do you think should the government devise for marketing of bamboo and its business promotion in Nepal?

19. What are the weaknesses related to bamboo marketing?

20. What is your annual family income level?

21. How much a single piece of bamboo cost?

22. In terms of sales, which are the peak seasons (months) for the selling?

23. Can you run this work throughout the year?

a) Yes

b) No (Specify the reason.....)

24. Is any advertisement processed to sell bamboo?

25. Are you doing it as business? If yes which types?

a. Single b. Partnership c. Joint venture

26. How many labors are working daily or annually?

27. Does child labors used in your field?

28. What about the payment system?

29. Could you please mention the name of locally available bamboo species and their distributional status?

<b>S.N.</b>	<b>Name of Bamboo Species</b>	<b>Cultivated</b>

30. Mention the various uses of the locally available bamboo species.

<b>S.N.</b>	<b>Name of Bamboo Species</b>	<b>Uses</b>

\*\*\*\*

Thank you very much for your cooperation

## Questionnaire Related to Bamboo-Based Entrepreneurship

- How long have you been into this handicraft business?
- Do you have your family members involved in this work? If yes, how many?
  - Yes (Male: /Female: )
  - No
- What are the products you make? How much time do you require? What is the cost Price and selling price of the item?

S.N.	Name of Products	Time Required	C.P. (NRs.)	S.P. (NRs.)

- Name the bamboo species that you use in making the products.
  - Tama Bans*
  - Taru bans*
  - Dhanu bans*
  - Nigalo*
- From where do you bring the raw materials?
  - Community forest
  - Private forest
  - Homestead area
  - Outer sources (Specify.....)
- What is the average number of culms consumed in a year?
- How much does a single bamboo culm cost?

S.N.	Source	Rate (Per Culm)
1.	Local village	
2.	Outer source	

- If the raw material is bought from outside, mention the reason.
  - Lack of space for cultivation
  - No land for cultivation
  - Home production not enough
  - Others (Specify.....)

9. Do you owe the land? If yes, what is its size?

Yes (.....)/ No

10. In terms of sales, which are the peak seasons (months) for the products?

11. Can you run this work throughout the year?

a) Yes

b) No (Specify the reason.....)

12. If no, how many months in a year do you get engaged into this work?

13. What are the problems related to this entrepreneurship?

a) Transport

b) Market

c) Low price

d) Raw material

e) Others (Specify.....)

14. Do you know about any activities being organized to promote this bamboo-based entrepreneurship in the MC?

.....  
.....

15. Are you educated or not?

a) Literate

b) Illiterate

c) Educated

16. Are you satisfied with you current occupation?

\*\*\*\*

Thank you very much for your cooperation

## APPENDIX- II

### GLOSSARY FOR LOCAL TERMS

- Chalne* : Round and flattened tray for winnowing purposes especially for filtering small granules
- Choya* : Fine stripes of bamboo culms cut for weaving purposes
- Dalo* : A kind of basket
- Doko* : A conical shaped basket for carrying various things
- Listi* : A square shaped wooden stick usually made up of stem of *Alnus nepalensis* used for framing
- Mandro* : A kind of mat
- Nanglo* : A round and flattened tray for winnowing purposes
- Mudha* : Bamboo stool
- Perungo* : Big Basket to keep chicken that can be taken place to place

## APPENDIX- III

### TABLES

**Table – 1: Education Background of the Respondents**

<b>Education</b>	<b>No. of Respondents</b>	<b>Percentage</b>
Below SLC	15	25
Intermediate	14	23
Graduate	10	17
Postgraduate	5	8
Other	16	27
<b>Total</b>	<b>60</b>	<b>100</b>

*(Source: Field Survey, 2009/2010)*

**Table – 2**

### Annual Family Income

<b>Annual family income</b>	<b>Respondents</b>	<b>Percentage</b>
5000-8000	30	50
8000-10000	5	8
10000-20000	10	17
20000-30000	10	17
30000 and above	5	8
<b>Total</b>	<b>60</b>	<b>100</b>

*(Source: Field Survey, 2009/2010)*

**Table 3**

### Annual Consumption of Bamboo Culms by the Sampled HHs (House Holds) in the Study Area and Surroundings

<b>S.N.</b>	<b>No. of Culms Purchased/Consumed</b>	<b>No. of HHs</b>	<b>Total Culms Consumed</b>
1.	150-200	15	2250-3000
2.	201-250	10	2010-2500
3.	251-300	4	1004-1200
	<b>Total</b>	<b>29</b>	<b>5264-6700</b>

*(Source: Field Survey, 2009/10)*

**Table 4**  
**Average/Annual**

	<b>Semi Skilled (Men and Women)/ Rate</b>	<b>Unskilled (Men and Women)/Rate</b>	<b>Total</b>
Daily Wages	2/200	3/180	5
Contract	3/180	5/150	8
Temporary	2/200	3/180	5
Permanent	Not Countable	Not Countable	-

*(Source: Field Survey, 2009/10)*

**Table 5**  
**List of Tools and Equipments used by Local Entrepreneurs in the  
Study Area**

Measuring Tape	Hammer	Khukuri	Penchis
Chubi	Retee	Saw	File
Hexo Frame and blade	Blue torch/ blue lamp		

*(Source: Field Survey, 2009/10)*

**Table 6**  
**Cost of Bamboo Culm/Source**

<b>S.N.</b>	<b>Source</b>	<b>Rate (Per Culm)</b>
1.	Local village	100
2.	Outer source	120

*(Source: Field Survey, 2009/10)*

**Table 7**  
**Area of Cultivation**

S.N.	Name of Bamboo Species	Cultivated
1	Bambusa Nepalensis (Tama Bans)	Local land
2	B.Nutans Subsp. Nutans (Taru Bans)	Local land
3	Drepanostac-hyum- -annulatum (Ban Nigalo)	Local land+forest

(Field Survey, 2009/10)

**Table 8**  
**Bamboo Species Preferred among the Respondents (Uses)**

S .N.	Particulars	Bambusa Nepalensis (Tama Bans)	B.Nutans Subsp. Nutans (Taru Bans)	Drepanostac-hyum- -annulatum (Ban Nigalo)
1.	Weaving material	* * *	*	*
2.	Racks	* * *	-	*
3.	Edible shoots	* * *	-	-
4.	Construction	* * *	*	-
5.	Fencing	* * *	*	-
6.	Soil stabilization	* *	*	* *
7	Fodder	* * *	*	* *

Highest (\* \* \*), Medium (\* \*), Lowest (\*), Nil (-) (Source: Field Survey, 2009/10)



**Table 9**  
**Economical Account of Some Bamboo Products**

<b>S.N.</b>	<b>Name of Items</b>	<b>Avg.C.P. (NRs/ Piece)</b>	<b>Production Rate (Piece/ Person)</b>	<b>Avg.S.P. (NRs/ Piece)</b>
1.	Small <i>Nanglo</i> (20" diameter)	25	½ day	45
2.	Big <i>Nanglo</i> (22" diameter)	35	1day	60
3.	Rack	80	1day	120
4.	Dustbin	100	2days	200
5.	<i>Chalni</i> (filter purpose)	20	½ day	40
6.	Small <i>Doko</i>	60	1 ½ days	100
7.	Big <i>Doko</i>	100	2days	150

(Source: Field Survey, 2009/10)