

# CHAPTER I

## INTRODUCTION

### 1.1 Background of the Study

Nepal is a land-locked mountainous country situated between India and China. It's located between  $80^{\circ} 4'$  and  $88^{\circ} 12'$  East longitudes and  $26^{\circ} 22'$  and  $30^{\circ} 27'$  North latitude. Total area is 1, 47,181 Sq Km. It is rectangular in shape with an average length of 885 km (East .west) and breath (north south) of 193 km. Geographically, Nepal has three distinct ecological zones the Terai, Hills and the mountain covering 17 %, 68% and 15% of the total area respectively.

According to census of 2011 the total population of Nepal was 2,64,94,504 Including 1,15,63,921 male and 1,15,87,502 females with an average annual growth rate of 1.35% in 2068 (2013) . 6.73%, 43.02% and 50.27% of the total population were found in the mountain, Hills and Terai respectively. Urban population is about 17.07 % and the remaining 82.93% population lives in rural areas (CBS 2011).

Nepal is an agricultural country. Likewise 66% of the people worked in agricultural sector, will only 34% were employed in non agricultural sector for their income. The agriculture sector occupies almost one third of GDP while about two third of country's population is dependent in this sector. Agriculture sector contribute 29.37% of total GDP in Fiscal year 2073/2074(Economic Survey 2016/17) and this sector contribute 31.07% of total GDP in previous Fiscal year 2072/2073(Economic Survey 2015/16).In fiscal year 2073/74 the GDP growth rate has been targeted at 6.94%. Industrialization is a necessary component for raising the living standard of the people; which depends upon agricultural development as it provides 80 % raw material for agro-based industry. The growth rate of GDP under the three year plan period has been targeted at 7.2 % (expected growth) with growth rate of agricultural sector and non agricultural sector 4.7% and 8.4% respectively. (14th plan)

Nepal is a one of the least developed country in the world with GNP per capita income of 862 \$ in Fiscal year 073|74 and GNP per capita income of 721\$ in previous Fiscal year 072|73. There are different types of agricultural activities such as livestock rearing, cash crops farming, cereal crops farming, horticultural etc. The climate

condition of Nepal is suitable for all types of agricultural activities. Among them horticulture is an important sector on Nepalese agriculture where there possibilities for development the soil and climate condition of Nepal are suitable to permit to grow almost all kinds of horticultural crops.

Agriculture is the backbone of the rural economy. Rural economy is regulated by the rural masses and its development often relies on various economic activities they perform and they are mostly dependent on agricultural activities. Horticultural farming is yet one of the major source of generating adequate income. There are various kinds of horticultural crops like fruits, vegetables, spices, nuts, tuber crops and medicinal & aromatic plants etc.

Orange cultivation predominantly plays a very important role in the socio-economic condition of rural areas. Orange is a seasonal horticultural fruit crop. Oranges are available throughout the year (peak time-winter) and grow on evergreen trees which are about 30 feet high and 20 feet wide. The flowers of the orange are white and blossom in spring, however the fruits appear only by winter. Once the trees are matured it gives fruits for 15-20 years. Thaprek is traditionally a horticultural state due to its unique agro-climatic condition, which permits growing wide range of horticultural crops like various fruits, vegetables, flowers, spices, nuts, and tuber crops, medicinal and aromatic plants.

Terai is very suitable for cultivation of food and cash crops whereas hilly region is suitable for horticulture. Most of the area suitable for citrus production lies in the mid hilly region where subtropical climate is dominant. Promotion the citrus production in mid hilly region can be very effective in bringing economic development of the people. In Nepal citrus development program is started by establishment of department of agriculture in 1982 B.S. In Indian citrus specialist Horticultural expert Mr. Pal was invited in 1999 B.S for purpose of scientific horticultural development. Many horticulture farm and station were established after the report submitted by Indian co-operation council in 2017 B.S. As a result citrus research sub-centre in Pokhara (2018 B.S) and citrus research centre in Dhankuta (2019 B.S) were established in order to promote citrus farming. This research centre recommended that orange would play significant role to uplift the economic status of hilly region of Nepal (Sharh 1992) "Mid hilly region of Nepal" was considered as main "citrus Belt"

fiscal year 2023|024 B.S and some effort were made to develop orange farming in that sector in 2029 (Paneru 1998.2. The Nepalese government has put forward the concept of suitable development from the fourth five plan 1970|75 suggesting middle hilly area as a suitable area of horticultural development and it has given additional stress in the fifth five plan 1975-80 to production of fruits with a view points of maintenance of ecological balance providing nutritive diet for people and for discouraging import of fruits from India. (Seventh plan 1985-90) it has emphasized to the citrus fruits development especially in some middle hilly districts as priority program even in tenth plan species of citrus fruits. From 1980 A.D morihikpo hiramatsu produce one village one production programme from Japan that followed by Nepal from fiscal year 2063/64 budget starting from Dolkha District for lokta. This program used specially Dhankuta for Orange. Fiscal year 2070/71 this program is launched in 42 District in Nepal. Orange is simply study and it is called mandarin orange in English and Suntala in Nepali. Citrus fruits are member of botanical family and all mandarin oranges are grouped in citrus reticulata. Orange is native of southern china but it has spread to other tropical and subtropical regions of the world. The Chhintang VDC of Dhankuta district has a long history of orange growing and it has been an important as well as famous area of the eastern hilly region. The VDC adjacent to the Chhintang of Dhankuta district is first orange growing area of the country (Rai 2000). There are list eight varieties of this fruits in America and more than ten in India. But in Nepal, the varieties are not well defined yet. However, local varieties such Dhankuta and Pokhara are also popular in Nepal, Orange is cultivated in all the development region. Basically it is cultivated in hilly region between 500 m to 1500 m height from sea level. But suitable height is 800m to 1400m from the sea level and the suitable temperature is 5° c to 35° c (Karmacharya 2063). Hilly region of Nepal, kaski, Tanahun, Syangja, Lamjung, Gorkha, Bhojpur, Dhankuta etc are the main district to orange production for the commercial point of view. Fresh orange contain nutrient like carbohydrate, vitamins A, B and C and other mineral component. Besides these, skin of orange has the medicine value.

**Nutritional composition of orange is given in the following table.**

Table 1.1: Nutritional composition of oranges (per 100 grams of edible portion)

<b>Nutritional Composition</b>	<b>Content</b>
water(percent)	88
Food energy (calories)	44
Protein (gm)	0.7
Fat(gm)	0.2
Carbohydrate(gm)	10.5
Ash fiber (gm)	0.3
minerals	0.3
Calcium(mg)	30
Phosphorous(mg)	16
Iron(mg)	1.3
Sodium (mg)	2
potassium(mg)	150
Vitamin A(IU)	420
Thaimine(mg)	0.06
Riboflavin(mg)	0.03
Niacin (mg)	0.1
Ascorbic Acid	39

Source; The New Encyclopedia Britannica, Macromedias, vol 7, 1978, p. 766.

The table 1.1 indicates that oranges provide essential elements as well as vitamins along with energy and protein. The level of production of fruit in Nepal is estimated to increase from 991978 Mt last year to 1096774 mt this year, resulting in an increment of about 11%. On the other hand the fruit cultivated areas is expected to increased by 3.15% from 111502 Hectares to 115009 Hectares (Economic survey 2073/74) .which area is to increased by 0.63 % from 110802 Hectares to 111502 Hectares in previous Economic survey 2072/73 .The fruit production also increased year by year from992551 metric ton to 1025284 metric ton in F/Y 2072/73 to F/Y

2073/74. This increased 0.06% to 3.30%.

But due to disease of some places orange production is decrease slightly in this year. (Economic survey 2073/74). In Nepal, the total area covered by orange farming is 17494 hectare which is 62.52 % of total plantation area covered by all citrus crops. Among various kinds of citrus the productivity of junar is highest. The productivity of orange is 34765 tons in fiscal year 2016. Source: fact fish orange production of Nepal

Tanahun is one of the 77 administrative districts of Nepal. It lies about 07 km west of Kathmandu, the capital city of Nepal and 15 km east of pokhara, headquarters of Gandaki zone. Tanahun lies between  $83^{\circ} 94'$  and  $84^{\circ} 56'$  east longitude and  $27^{\circ} 74'$  and  $28^{\circ} 13'$  north latitude .Tanahun is one of the famous district for qualitative and quantitative orange productions in large scale. In Tanahun district Thaprek, Kyamin, Buldi, Purkot, Raipur, Majhkot, Keshavtar, Dhorphirdi & Bandipur are famous for oranges. In this District , lime is produced in 190 hectares, sweet orange in 80 hectares land and total production is 552 metric tons, and other citrus in 387 hectares Fruit bearing trees cover 1807 hectares and the productivity is 1498 mt/ha (statistical Information on Nepalese Agriculture, 2014/15).

In this research the primary data was collected at 2073 poush to magh , when the local level reconstruction at 2073 falgun 26 the nine ward of Thaprek VDC is change in to Suklagandaki Municipality ward No 1 .

## **1.2 Statement of the Problem**

Agriculture is leading sector of economy of Nepal. The development of different aspects of agriculture is essential for national development. The role of agriculture sector on GDP growth is very important factor in our economy. The major problem facing by the economy of developing countries due to backward agriculture sector are low income of people, low productivity, unemployment, food scarcity and poverty Now a day many people abandon agricultural occupation due to low productivity and hard of work in agriculture sector. Lack of irrigation facilities, credit facilities and expensive fertilizer are also other problems.

Due to the suitable climate condition horticulture is profitable for hilly region. The

production of orange gives return in the long run and orange growers should have presence to wait for six to eight year for obtaining returns. But being poor, the farmers of rural area have not such patience as they are facing with the problem of survival.

The exiting problem in rural hills is that how to generate income for substance, which only be mystery of poverty. Other problem is not identity the role of orange crops in coming generation and poverty reduction. The problem in orange farming including unfavorable climate, lack of scientific knowledge, cold storage, marketing and transportation problem, different kinds of diseases etc. There are problem of unavailability of fertilizer pesticides and other inputs. Farmers always face technical problem related to the new knowledge for better farming. Because budget and time constrains this study has addressed following research question.

- What is the existing condition of socio-economic life of the orange growers in the study area?
- What is the contribution made by orange production in the income of orange growers?
- What is the trend of orange production in last five years in the study area?
- What are the problem and prospects of orange cultivation in Suklagandaki municipality, 1 Thaprek?

### **1.3 Objectives of Study**

The general objective of the study is to study the contribution made by orange farming in the socio-economic condition of the people of Thaprek. However the specific objectives are as follows:

- To describe socio-economic characters of orange growers in the study area.
- To estimate the contribution made by orange in the income of orange growers.
- To analyze the trends of orange production in last five years in the study area.
- To find out problem faced by orange growers and,
- To show the prospects of orange cultivation in Thaprek.

## **1.4 Significance of the study**

Nepal is a developing country where the economy is dependent on agriculture. In Nepal 68% of total area is covered by mountainous region where fruits production is major branch of agriculture (Sharma 2063 page. 163) fruits are considered as the most important feeds of man kinds. They are nutritive and indispensable for the maintains of health and significance for a good income. It is very important as farmers are assured to receive higher return from a small area. So, orange crops are a choice able sector in fruit production.

Nepalese agriculture used to adopt competitive and comparative advantaged enterprises uplift the production, productivity and income of the farmers. In the hills production orange crops seems to fulfill those criteria. Present study has given outcomes' related to fruit production in a particular prospective area which can be duplicated in other part of the country. Thus, this study is significant implications.

## **1.5 Limitations of the study**

This study attempts to limit itself only in suklagandaki Municipality 1 of Tanahun District. Generalization of this study may or may not be applicable to other parts of the nation. This study creates only socio-economic aspect but not the other technical aspects of orange farming. As being a case study it does not cover the whole aspects of orange farming but it can be reference to further study in 50 households and it is assumed that the study provides the representative figure of socio-economic impact of orange farming. Due to various constraints, there are some limitations of the present study which are given as follows:

- This study is confined to orange production within a suklagandaki Municipality 1 (Thaprek) of Tanahun District. So it can be representative to some extent only for mid-hilly region regarding orange production but may not be generalized to the national level.
- Quantitative data are excluded from this study because of the measurement problem and lack of sufficient and pertinent data.
- The researcher being a student has not been able to increase the samples size by including sufficient number of respondents due to budget and time constraint.

## **1.6 Organization of the Study**

The study is divided into five chapters. The first chapter is introduction giving general background of the study, statement of the problem, objective of the study, significance of the study, limitation of the study. In second chapter it elaborates the literature review. The methodology research design, nature and sources of data, technique of data collection, rationale for the selection of study area, the universe and sampling and method of data analysis and interpretation is included in the third chapter. Socio economic and demographic characteristics, contribution of orange in income of orange grower and problem and prospects of orange farming are described in the fourth chapter. Finally, the contents in chapter five are summary, conclusion and recommendation.



## CHAPTER II

### REVIEW OF LITERATURE

#### 2.1. Review of the Theoretical Aspects and Conceptual Framework

Review of literature is an essential part of all research works. A critical review of the literature helps the researcher to develop a thorough understanding and insight in to previous research works that relates to the present study. It is also a way to avoid investigating problems that have already been definitely answered (Wolff and pant 2015 99)

For the purpose of the study of this subject, literature of various writers is reviewed. The literature is reviewed from the thesis presented by former students, reports and paper presented in seminars, bulletins, journals and information published by various agencies and books in the concerned topics. The summary of outcome of some of these studies have illustrated here after.

This chapter deals with review of literature. Many literatures were reviewed which were concerned on orange production. Some of the studies on fruit production & someone especially orange production in Nepal has been done. They indicate orange production plays very significant role in agriculture economy of the country.

There are some studies on horticulture as well as citrus in Nepal. Literature has been focused on orange cultivation in particular. The main focus of all studies is placed on presence of production and many kinds. The studies indicated that there is favorable climate in hilly region. There are not sufficient literatures about orange production. Hence some previous study available and related to fruit production and those studies indicate that the climate of mid- hilly region of Nepal is favorable for the production of orange. The term citrus fruit covers large range of fruits of family Rutaceae including mandarin orange (*Citrus reticulata*). Citrus fruits are cultivated all over the world in tropical and sub-tropical region where there are suitable soil and climatic condition. In Nepal, the climatic condition of mid-hill regions having altitude range of 800m to 1400 m from east to west of the country are considered favorable for all types of citrus fruit cultivation. Pumilo, acid lime and lemon can also be cultivated successfully in up-land condition of Terai; inner Terai, foothills and river basin region

of Nepal. The three most important species on citriculture in Nepal are mandarin (*Citrus reticulata*), sweet orange (*Citrus sinensis*) and Acid lime (*Citrus aurantifolia*). Among them mandarin takes 1st rank, sweet orange 2nd rank and Acid lime 3rd rank in term of area coverage and production. Citrus crops are potential exportable commodity particularly to India, Bangladesh and China. The history of citrus fruit cultivation in Nepal is not well documented but the description of fruits in old scriptures about their importance in religious ceremonies and medicinal values indicates that citrus farming must have been traditional practices since ancient period. But commercial cultivation of citrus in Nepal started only after 1970 (NCRP, 2010). At present major citrus producing district of Nepal are Illam, Panchthar, Terathum, Dhankuta, Bhojpur, Sindhuli, Ramechhap, Kavre, Dhanding, Gorkha, Lamjung, Tanahun, Kaski, Syangja, Gulmi, Aarghakhanchi, Dailakh, Dadeldhura, Baitadi and Darchula. Since last ten years area and production of citrus fruits has increased by more than 2 folds whereas increase in productivity is very slow. The productivity of citrus fruits in Nepal is very low (10.8 Mt/ha) as compared to 20-50 Mt/ha in most citrus growing countries of the world. Thus the increase in total production of citrus in Nepal is primarily attributed to the increase in area under cultivation. So there is enormous scope of increasing productivity of citrus fruits crops in Nepal, which can be achieved by utilizing better varieties along with improved orchard management practices (NCRP, 2010). 4 In mid- hills, citrus is one of the dominating fruits and grown across the country in marginal land and terraces. It has occupied an important place in national horticulture sector. About 34 thousand ha of land is covered by citrus, which accounts about 32 % of the total fruit area of the country (MOAC, 2009/10). Therefore citrus based farming system could be one of the possible options for mid-hills for commercialization. It is the major prioritized fruit crop for commercialization in the hilly areas (APROSC, 1995).

The expected growth rate in the promotion of production of mandarin orange, as targeted by Agriculture Perspective Plan (APP) is still insignificant due to several technological constraints. Although various plans and policies like national agriculture policy 2004 and Agribusiness promotion policy, 2007 have been implemented to increase production and productivity, through the development of commercial agriculture, their efficiency is still below the target level in the sector of mandarin orange. Citrus accounts about 25 % of the total fruit production and is

expanding due to favourable government policy, suitable climate and market demand but it is still challenging due to wrong and traditional management practice (Kaini, 2004).

APP has targeted to increase the citrus production area by 130 % by the year 2015. For this, it is necessary to develop efficient production and marketing mechanism which provides good incentive for the farmers of mid-hill areas. Citrus cultivation is economically sustainable farming system in the mid-hills of Nepal. Citrus cultivation is profitable with the economic internal rate of return of about 29 % (APROSC, 1989).

FAO (1975), Food and Agriculture Organization carried out a study entitled 'The Private Marketing Entrepreneurs and Rural Development Service.' It has role of government in agricultural marketing. It concluded that successful government official is one of who builds main institutions to handle goods and services. The paper has future stressed that the government should take responsibility among others for agricultural development through infrastructures development, supply of inputs extension programmers and curtaining of marketing situation for agricultural goods.

The paper has suggested that traders and government should be organized. They should recognize new market channels for extending information from them and implemented joined programmers and come again with them. The mass media should also be encouraged to improve the image of private marketing entrepreneurs.

Marketing is the performance of all business activities involved in the flow of products and services from the point of initial production until they are in the hands of consumers (Kohls and Uhl, 1985).

### **Overview and Importance**

The orange has its origin in Southern China, Northern and East India and South East Asia. It is now universally grown in all of the six continents, in over 100 countries. The first introductions of oranges in Uganda were in 1900. The orange is a crop of economic importance and also a valuable source of vitamin C. It can be made into juices, concentrates, marmalade, jams, etc.

## **Ecological Requirements**

Oranges grows over a wide range of soils but light, well drained (sandy) soils are most ideal. For good production oranges require well distributed rainfall or supplementary irrigation throughout the year. A good source of water is therefore essential in orange farming. Water requirements vary according to weather conditions, but as a whole the ideal range is between 450mm – 2,700mm per year.

Oranges can be grown from as low as sea level to 200m above sea level. Areas of low humidity are most ideal. Such a climate is important for reduced disease intensity and for acquiring good orange color. A dry hot day, cool at night climate also favors good color development. Citrus requires temperature ranges from 13oC-38oC. Optimum temperature is 25oC-35oC. Extremely high temperatures may be harmful especially during flowering or if cool temperatures are followed by a hot period. Damage occurs in the form of flower and leaf drop. Wind can also cause serious damage to orange trees and fruits. Hot dry wind will often scorch trees by drying young leaves. Winds of high speeds will scar fruits and cause fruit drop. Where winds are a problem, wind break shelters should be planted.

## **Varieties**

The common cultivated varieties (cultivars) include:

Washington navel, which is suitable for direct eating as a table fruit (dessert). The fruit is seedless. It matures early in the season. Valencia, with a lot of juice and therefore suitable for juice extraction. This cultivar matures late in the season and this is advantageous. The juice has high soluble solids. The fruit has a rough skin. Hamlin, which has good juice extraction properties. It is a small fruit with a smooth and shiny skin. Others include Kuno navel, Nova, Minneola are other varieties.

Marketing is a major function after production. Acharya and Agrawal (1999) state that production is the door to economic development but it is marketing that opens the lock. Thus, marketing plays an important role in agricultural production. Moreover marketing is the creation of time, place and possession utilities through which human wants are satisfied by the exchange of goods and services.

## **Agricultural Marketing**

Agricultural marketing comprises buying selling, storage, processing, standardization, certification and distribution of farm products. In the process of transfer from farmer to consumers, agro-products pass through a channel involving a sequence of change in their forms and prices and numerous intermediaries play a significant role in getting products transferred from farm gate to the consumer (Ellis, 1996, cited in Pokhrel and Thapa 2005).

According to MDD (2001) agricultural marketing encompasses of all the activities from production to consumption such as harvesting, grading, packaging, storing, price fixation, selling and buying. In performing these actions, it adds value to the produce in terms of time, place and farm utilities. It also covers marketing cost, organizational structures, rules and regulation, market Competition.

According to Acharya and Agrawal (1999), agricultural marketing is a process, which includes farmer's decision to produce a saleable farm commodity and various aspects of marketing structures both functional and economic consideration including products assembling, preparation of market distribution and use by final consumer. Thus, marketing starts with the decision to plant unlike to the conventional way of thinking.

Rayamajhi (2005), state that development of agriculture sector requires a balance improvement in the production and marketing. It is inefficient to improve the production side and neglect marketing side as the formers improvement is dependent on the latter's development. Production may be the door to economic growth but marketing is the key that turns the lock. Marketing is also the most important multiplier of economic development.

## **Horticultural Marketing**

Horticulture marketing is one of the important branches of agricultural marketing and deals with the marketing of horticultural commodities (fruits, vegetables and flower). The conventional definition of agricultural marketing states that agricultural marketing starts when the crop is harvested. But, the concept has been changed. Marketing of vegetable products begins at the farm when the farmers plan his production to meet specific demands and market prospects (Awasthi, 2007).

Efficient marketing system plays a crucial role in getting the remunerative prices to the producers. In present scenario, it is observed that the producers do not pay proper attention for various components of marketing. The producers usually spend whole of the year on production and part with the produce to the pre-harvest contractors, that results in low share in consumers price. Marketing system includes procedures farmers, traders, transporter, wholesalers, retailers and consumer as the main actors to carrying out different activities (MDD, 2001).

Marketing system consisted the understanding of three aspects which are market channel to understand product flow and outlet of cultivars, marketing margin to understand margin and profit signal and market price to understand market price signal (Gauchan et al., 2005).

According to Joshi (2004), an efficient marketing system is essential for timely delivery at reduced marketing and the efficiency of market is influenced by number of external functions such as policy, regulatory framework and infrastructure.

As marketing system involves wide range of activities, firms and mechanism of delivering goods from one hand to other hand, an understanding of the system is essentially important for the identification of bottlenecks in the system with a view to providing efficient services in the continuum of production-consumption chain. It is because; an efficient marketing system minimizes cost, and benefits all the section of the society (Acharya and Agrawal, 1999).

Marketing system creates time, space and form utilities of the farm produce for the consumers. Marketing system operates to transport produce to where consumer wish to take delivery of it, at times they find more convenient and in the form desirable. These functions add values of the farm produce for the consumers and reflected in marketing margin. If these marketing functions are performed in an efficient way, there are low marketing margin and higher producers share on consumer rupee. Thus, the price farmers receive and quantities they can sell are very much dependent upon the performance of functionaries in marketing chain. As marketing margin provides an indication of efficiency of existing marketing system consideration of it in economic analysis of marketing system of particular crop enterprises is sensible. The retail price of the commodity is determined by the intersection of derived supply (or retail level supply) and primary demand (or retail level demand). Likewise, farm-gate

price of the commodity is determined by the intersection of primary supply (or farm level supply) and derived demand (or farm level demand). Marketing margin reflect the economics of supply and demand for marketing services, and it is important to acknowledge that such margins reflect the provision of „marketing utilities to consumers and that they are not excess profits to middleman in the market chain.

It is not usual to encounter the view that the farmers share of the retail price of agricultural commodities is too small, and that retail-farm-gate margin are excessive and include elements of excess profit. In many instance this charge has been judged to be unsupported since a careful analysis of the profits of „middleman and processing firms shows them to be commensurate with the business risk involved. Generally, a higher farm retail margin is associated with the demand of marketing services and the cost incurred for these. In developing countries like Nepal, marketing margins tends to be high. This is highly affected by the accessibility condition of production sites. Generally, higher marketing margin is linked with exploitation of middlemen. However, the higher marketing margin may not necessarily be due to innate efficiency and excess profit of the middlemen.

What is certain however is that producers as well as consumers are likely to benefit from any improvements in the transport and marketing system which reduce distribution costs. The benefit of the reduction in marketing costs is shared between producers and consumers, with the relative shares depending on the slopes of the supply and demand curves. This underlines the importance to producers of having an efficient marketing system (Colman and Young 1995).

It is clear from this relationship that producers welfare depends on efficiency of marketing system. Lower marketing margin and higher producers share on retail price of their produce ensures producers welfare. Considering that, one of the major determinants of marketing margin is the transportation facility, which affect on efficiency of marketing system the extent could be estimated by using accessibility condition as a proxy for transportation facility.

An efficient marketing system is that which has lower marketing margin (Pun and Karmacharya, 1988). Marketing is complex process that involves assembling, processing, value addition and distribution of surplus from the production. A well planned and developed marketing system is essential for the overall development of

nation that provides efficiency in products distribution (Gurung et al., 1996) Marketing channel refers to the route through which products flow from the producers to the ultimate consumers. During the marketing process agriculture produce undergo a change in time, place, form and ownership, which add their values. The chain through which various produce pass between producers and consumers constitute their marketing channel. Mostly marketing channel refers to an inter-organizational system made up of a set of inter dependent institution and agencies involved in the task of moving products from the point to the point of production to the point of consumption (Acharya and Agrawal, 1999).

Pandey et al. (2011) studied marketing of sweet orange in Kumaon of Uttarakhand of India and found six types of marketing channels.

Channel I: Producer-village traders- primary wholesaler-Secondary wholesaler-retailer-consumer

Channel II: Producer- village trader- wholesaler- retailer- consumer

Channel III: Producer- wholesaler- retailer- consumer

Channel IV: Producer- wholesaler-consumer

Channel V: Producer- retailer- consumer 10

Channel VI: Producer- consumer

Long marketing channels are one of the reasons for increased marketing cost and bring inefficiency in marketing which results the loss in the consumers welfare and producers share (Heque et al, 1996).

Producers, traders, transporters, wholesalers, retailers, and consumers are the main actors of marketing system (MDD, 1999).

Dhakal et al. (2005) found following four types of marketing channel in the market survey of acid lime and hill lemon in Nepal.

Channel 1. Producers- Retailers- Consumers

Channel 2. Producers- Wholesalers-Retailers-Consumers



Channel 3. Producers- - Commission agent- Wholesaler- Retailers-Consumers

Channel 4. Producers- Collectors -wholesalers- Retailers- Consumers

### **Gross margin**

The gross margin of any particular crop enterprise is defined as the difference between enterprise gross income and the variable expenses attributable to that enterprise (Dillon and Hardakar, 1993). The estimation of gross margin is essential to obtain economic optimum through maximizing the gross margin (Upton, 1996). The variable expenses used in the calculation of gross margin may be defined as expenses that vary more or less in direct proportion to the level of the enterprises. The gross margin is usually expressed on per unit basis, that is, per unit area and/or per unit of production. Gross margin gives an idea about farm planning as it help decide whether or not to continue existing farm practices or substitute by others.

Scale of production is the most important as all agricultural activities depend on farm size. Farm size tends to effect per unit net return from the enterprise. In comparison to small scale farming large scale farming has advantages like efficient labor division, low overhead cost, economies in buying, selling, better bargaining power and flexible profit making opportunities (Lekhi and Singh, 1996). So difference in the scale is important factor to be considered in the study of enterprise. The marketing margin is known as the retail farm gate margin is the difference between the retail price of products and the price received by farmer for its products (Colman and Young), 1995).

In the marketing of agricultural commodities, the difference between the price paid by consumer and the price received by the producer for an equivalent quantity of farm produce is often known as price spread (Acharya and Agrawal, 1999). In the marketing system, product has to pass through various functions to reach the consumers in the form of their interest. These functions add value to the farm produce for the consumers and reflected in marketing margin. If these marketing functions are performed in an efficient way these are lower marketing costs resulting in to lower marketing margin and higher producers share in consumers rupees.

Marketing margin indicates efficiency of marketing system as it refers to the efficiency of intermediaries between the producer and consumer in respect of the

service rendered and the remuneration received by them. It also helps to formulate and implement appropriate price and marketing policies. Excessive margin points the need for public intervention in 11.

Marketing system (Acharya and Agarwal, 1999). As marketing margin provides an indication of the efficiency of existing marketing systems, consideration of it in economic analysis of marketing system of particular crop enterprise is sensible because the price farmer receive and the quantity they can sell are very much dependent.

Subedi (1993) have pointed that major share of consumers price goes on pocket of retailers due to higher marketing margin. Similarly, Shrivastava (2002) highlighted that the producers' share was inversely related to consumers price. He also pointed out that share of the producers and retailers were directly affected by the consumers price.

The producers share in the consumers rupees is the price received by farmers expressed as percentage of retail price (the price paid by consumer). It is the part of rupees paid by consumer, which actually goes to the producer and is expressed as percentage. Citrus based farming system is profitable enterprise that can bring increased income of hilly people in the marginal land. Up to 10-16% higher income than existing cropping pattern can be obtain through the integration of mandarin in the farming system, as suggested by Gauchan,(1994). The mandarin orange farming was the profitable agribusiness in the mid-hills of Nepal. The *bari* land should be cultivated by mandarin orange replacing maize, millet and ghaiya in order to get higher return from the available land resources (Aryal, 2001).citrus cultivation in the hill farming system is more profitable compared to crops like maize and wheat and its promotion helps to import substitution and export promotion (APROSC, 1989).

Various types of contractual arrangement in case of production and marketing are prevailing in the country in the case of fruit and vegetables. Due to the perennial nature and difficulty in controlling volume of production pre-harvest contract is the most common marketing practice followed (Bastakoti, 2002). Generally price is determined by the joint negotiations by the traders and farmers. The most important mode of selling of mandarin orange followed by the Nepalese farmer is pre-harvest contract. Likely petty collectors (*doke*) are the next important source which collects

mandarin orange from production sites. They purchase mandarin orange on the basis of number of fruits from the middle and small categories of farmer while innovative leader farmers sell orange directly to the wholesale market (Shrestha *et al.*, 1998).

Contractors are the major players of the marketing of mandarin orange in Nepal (Shrestha *et al.*, 1998). Pre-harvest contract is the risk free option for the selling of mandarin but the actual profit is reduced and large scale production is hampered (Shah and Narayan moorthy, 1998). Farmers preference towards pre-harvest contract system is more because it transform burden of marketing risk to the contractors as well as provides the money in time but it gives lowest share to the consumers” rupees to the growers (Malliswari, 1998).

Mostly for contract arrangements, the contractors visit the production sites few months prior to production season and purchase the orchard in lump sum basis. During harvesting season they make necessary arrangements. Generally the contractors are the wholesalers and commission agents. They sold the purchased mandarin in to the wholesale market (Shrestha *et al.*, 1998).

There are various aspects of production and marketing problems reported by the different authors. Generally main governing factors of agriculture marketing problems are poor market infrastructure development, legal and institutional mechanisms (Thapa *et al.*, 1995). Lack of marketing infrastructure and facilities caused slow pace of transformation in agricultural production system. Access to market is expensive due to lack of infrastructure like 12 transportation that caused inaccessibility of locally produced commodity to domestic market. The right has been encroached especially on marketing issues (Sedhain *et al.*, 2002).

Lack of proper storage and post-harvest processing facilities are the leading problems due to this farmer are getting low price and consumer have to pay more for the orange beyond normal season (Gautam and Adhikari, 1989). Thus it is necessary to conduct research on the demand and supply part in the major production pockets for the identification of problem and sustainable development of this industry in the western mid-hills of Nepal (LARC, 1997). Fluctuation in the market price and market availability resulted heavy exploitation of the grower by the businessman (Gurung *et al.*, 2004). Due to poor bargaining power and economic condition marketing intermediaries are getting more advantage from the mandarin orange growers

(Pokhrel and Thapa, 2005)

Farmers with limited technical knowledge have ever managed mandarin orchards, as mandarin orange needs better management for the proper production (Pant, 2002).

Bastakoti (2002) has reported disease, insects, lack of technical Knowledge, input supply and Irrigation as the major production problem and low product price, transportation and unorganized market structure as the major marketing problem of the western mid-hills of Nepal. Similarly, Aryal (2001) has reported disease as major problems followed by insect/pest and other physical problems in mandarin production.

Appropriate policies regarding emphasis on citrus based farming system and support in extension and marketing is utmost for the protection of deteriorating ecology and economy of the mid-hills of Nepal (Gauchan, 1994).The links in the market chain (production, post-harvest management, marketing, and business development services) are often disjointed in agricultural markets, generating an inefficient flow of information along the market chain. This lack of marketing information and coordination along the market chain allows some actors to exploit other market chain actors unfairly (Lundy et.al. 2008).

An efficient marketing information system can manage, for timely delivery of product, reduce marketing costs and increase production and productivity and make the market yard healthy and hygienic (Awasti, 2007).

### **Value Chain Analysis**

Value chain analysis is a tool that we use to define development opportunity, looking at each distinct step in the life of a product, the actors at each step, how value is added, and how much they earn for that value created (Piper, 2007). It provides a suitable framework to study the impacts of economical, technological and institutional changes through global marketing chains and the distribution of the incidence of those impacts and any gains arising from them between members at different production and marketing stages. A “value chain” denotes all the actions involved in making a product and delivering it to retail and the consumer. It is a supply chain consisting of the input suppliers, producers, processors and buyers that bring a product from its conception to its end use. It seeks to address the major constraints at each level of the

supply chain, rather than focusing on just one group or on one geographical location (Dempsey and Campbell, 2007).

Value chain analysis is based on a comprehensive description of input-output relationships from grower to retailer, and the coordinating mechanisms that guide activities at each stage. It can include deliberation of technical transformations of product, costs, pricing and margins, number and size of firms at each stage, barriers to entry, market power and the sharing of benefits from innovation, product differentiation and diversification (Cruz, 2003) The value chain explains the full range of activities which are necessary to bring product/service from conception, through the different stages of production (involving a combination of physical transformation and the input of various producer services), delivery to final consumers, and final disposal after use. As can be seen from this, production is only one of a no. of value added links. Moreover, there are ranges of activities within each link of the chain. Although often represents as a vertical chain, intra-chain linkages are most often of a two-way nature for example specialized design agencies not only influence the nature of the production process and marketing, but are in turn influenced by the constraints in these downstream links in the chain (Kaplinsky & Morris) (<http://www.globalvaluechains.org/docs/VchNov01.pdf>)

A value chain is a series of related business activities from the provision of specific inputs for a specific product to primary production, transformation, marketing, and up to the final sale of the particular product to consumers (the functional view on a value chain). The set of enterprises (operators) performing these functions i.e. producers, processors, traders and distributors of a particular product. Enterprises are linked by a series of business transactions in which the product is passed on from primary producers to end consumers. According to the sequence of functions and operators, value chains consist of a series of chain links (or stages). Value chain comprises an economic system organized around a particular commercial product. The coordination of enterprise activities in a value chain is necessary to provide final customers with the right quantity and quality of the product. Enterprises have to collaborate to be successful. The value chain therefore: connects the different yet related business activities (production, transformation, marketing, etc.) necessary for serving customers, and joins and coordinates the enterprises (primary producers, processing industry, traders, etc.) performing these business activities (GTZ, 2007).

Value chain analysis is the process of chain improvement and value chain promotion. Value chain mapping is drawing a visual representation of the value chain system. Maps identify enterprise functions, chain operators and their linkages, as well as the chain supporters within the value chain. In any value chain, chain maps are the core for analysis and therefore indispensable. Quantifying and explaining value chains in detail includes attaching numbers to the basic chain map, e.g. numbers of actors, the volume of produce or the market shares of particular segments in the chain. Depending on the specific interest, specific chain analyses “zoom in” on any relevant aspect, e.g. characteristics of particular actors, services, or the political, institutional and legal framework conditions enabling or hindering chain development (GTZ, 2007).

Economic analysis of value chains is the evaluation of chain performance in terms of economic efficiency. This contains determining the value added along the stages of the value chain, the cost of production and, to the extent possible, the income of operators. Another aspect is the transaction costs, which are the cost of doing business, collecting information and enforcing contracts. The economic performance of a value chain can be “benchmarked”, i.e. the value of important parameters can be compared with those of competing chains in other countries or similar industries (GTZ, 2007). 14

Government should ensure rural trading and it also should provide concessional agriculture credit to produce fruits. The government should manage institutional measuring system of fruits in rural areas. Government should organize practical training programmers for small and medium scale traders in rural area. Commodity handling technique, processing, storage, business, management and efficient marketing are some of areas in which small and middle farmers need some expert. Government should strengthen their activities in the field of marketing research, information and forecasting data and possibilities for the future development in order to encourage wide spread participation in agriculture marketing (FAO; 1975)

## **2.2 Review of Related Works**

HMG/DFAMS (1976) has conducted a research entitled on 'Fruit Production in Kaski and Syangja District. The study has focus on the production, cost and existing marketing channels of major fruits in the two districts. The main objective of this

study is to state status fruit production in Kaski and Syangja district. This study has also focused on production trends.

This study confirmed that the favorable climatic and soil condition of the Hilly areas had attracted the farmers towards fruit production and also suggested that various support services programs, are necessary for providing supplementary means of additional income generation for the farmers. This study has also pointed out some of the difficulties of farming fruits. The main barriers pointed out of this study, for producing fruits in these two districts are; lack of administrative efficiency, lack of coordination between the government and private agencies and inadequate transportation and storage facilities. Its main focus was on the development of agro-forestry through orange farming in these districts. It has also pointed out the appropriation of citrus farming in neighbors' like Tanahun, Lamjung, Parbat and Gorkha.

Chapagain (1987) carried out a study entitled on 'Orange marketing on Bhojpur' This study has tried to link the problem of the migration, rural unemployment and food scarcity to the low productivity of land in the hilly region. This study has suggested for the sufficient fruit production and efficient marketing in mountain region in order to get rid of these problems. It has emphasized on proper system of pricing, distribution, storage and consumption of citrus. It has suggested managing physical infrastructure for agro product, systematic market channels, supporting price to the producers for revolutionary change in agriculture sector.

Budhathoki et al. (1989) conducted a study about orange production was done by Lumle Agricultural Research centre (LARC) entitled 'production Constraint of Mandarin in Western Development Region.' This study focus on Kaski, Tanahun, Lamjung and Syangja districts. According to this study, there are large land and characterized by terraced up land. The food grain like Wheat, Maize, Millet and Barley mostly grown under rain fed condition in these districts. It is experienced that the orange farming is economically more profitable than the cereal crops under similar conditions. The orange farming is found to provide a good income than the traditional food crops for poor farmers of these hilly districts.

The objectives of study were to identify problem associated with citrus farming and to fulfill the objectives, a survey team was made which consisted of two horticultures, a

plant protectionist and a junior Technician. Descriptive method was used for the study information was collected from field survey whereas 45 samples of orange grower farmers were taken from whole population. Questionnaire, interview and observation were used as main tools for the study. The main conclusion of this study is as follows;

The study was main concentrated with the technical aspect of problem of diseases. The study has identified disease of orange production as greening root due to phytophthora, pink diseases and fruits fly. Other identified causes related to transmission of disease for which better nursery management, phytosanitary method and control of disease expansion were suggested.

APROSC (1989) has conducted a study entitled 'Feasibility Study of Citrus Development for the selected mid-hill Districts of Nepal.' This study explains different aspects of citrus production in the mid-hills of Nepal. This study has identified that the nations' policy for developing citrus farming program as still unsuccessful due to the poor performance of institutional supports related to the citrus development program. On the basis of land use, it has indicated that the citrus production in mid-hill is still higher than the cereal crops, Citrus production, according to this study can provide tangible as well as intangible benefit of that it provides. Further it has suggested that effective government effort should be lunched practically to develop this field.

APROSCS (1980) has conducted a research about the analysis the major problem of fruit production and marketing in Nepal. This research has pointed out that fruit production has been affected by the import of Indian fruit for all season and extent of invasion of Indian traders in Nepalese fruit markets alarming. It has also pointed out of problem of transport and lack of storage facilities in the vicinity of production area. The study has suggested banning the import of Indian fruit till the Nepalese fruit are exhausted in the market. Also it focused to improve credit facilities to marginal framers in the time of pursing fertilizers, during the marketing period. It has also recommended the promotion of marketing facilities, such as transportation and shortage which helps not only farmers and business men but also consumers and government. But this study has not discussed the problem faced by the farmers due to involvement of unorganized middle man in the marketing process.

A study of Paudel (2050) of the village profile of Bharatpokhari VDC in Kaski district



described about the orange farming in this VDC. It has pointed out the existing problem on orange farming in this study area. Lacks of technical knowledge of the farmer, lack of irrigation facility, lack of capital, transportation problem are the major problem in the study area. It has noted that technical services, diagnosis and treatment of the plant, management of irrigation facility and government support are the measures to increase in production of orange. The study has suggested that loan facility for the long period (Ten years) is essential for systematic development of orange farming. Agriculture exhibition, seminar, tour revolving training are also essential to encourage and to empower the farmers.

Rajbanshi (1997), carried out a study of 'Mandarin Orange farming in Mankamana VDC Gorkha District' In this study, the general objectives is to know various aspects of Mandarin Orange cultivation in Manakamana VDC.

In this study, exploratory research method has been used. So, it is descriptive nature primary and secondary data are also used. There are 905 household in this VDC. A total of 90 household were interviewed in the five wards.

The researcher find that Mandarin farming is expanding as very important cash crops in the mid-hill region of Nepal, where it offers an opportunity for high income per hectare in areas of acute land scarcity with favorable income generation, poverty reduction and positive environment effect. As Mandarin is the major raw material for development of industries producing orange juice, jams, squash, jellies, marmalades, pickles etc. His research shows that those product as well as fresh mandarin can be exported and complete in foreign market also. In addition, environment benefit also gets from the high value of output per hectare. This helps withdraw marginal land from agriculture and from the crops on slopes.

Thapa et al (2003) has carried out the study on 'Commodity Case Study of Fruits' they dealt with the identification of the key issues facing the fruits sector. Analysis of various issues and suggestion presented by this study are as follows:

- Lack of competitiveness with India in both import and export is the main issue improving productivity is an obvious priority.
- The government needs to play a catalytic role in promoting private public partnership in production and marketing.

- Grading should be encouraged to develop material for packaging and shipping.
- Some aspects of the labor contract law are relevant to fruit processing industry in view of the short season for production as well as for processing.
- A strong public research program is needed on efficient method of extraction and preserving fruit juices locally.
- Quality proper harvesting and packaging technology are needed.
- Information on quality of produce source of supply, volume of transaction and a weekly price trend should be made available through the mass media, so as to bridge the information gap between producers and trades.
- Government may need to develop market centers and infrastructure in strategic locations.
- Cold storage play very important role in case of fruit production being highly seasonal. It requires a separate study on the economics of investing in cold storage.
- Group approach to marketing to solve to great extent several problem currently facing small producers and trades alike.
- Bulk of the contract production between processer and farmers takes place through middle man and without any legally binding contract.
- The government needs to addresses the complaints with the Octroi system seriously.
- Tariff and other incentive that discourage the use of local materials need to be previewed.

Rai (2003) conducted a study on 'Production on marketing of Orange in Sikkim' In this research, the main objective of the study is to analyze the production and marketing condition existed in the orange marketing in Sikkim. Primary as well as secondary data have been used in this study. Researcher has collected data from structure questionnaire, formal interview and various publications of horticulture

department and government offices. Out of the 150 household of commercial orange farmers, 36 household were taken as sample rounding to the size of orange.

He has concluded that the production of orange is good and the productivity of orange is at increasing trend. The cost of marketing is probably very high for farmers in the study area. There is only one previous hat bazaar in the study area in where it is not possible to sell huge amount of production. There are so many problems identified by this study are as follows: problem of marketing, credit facilities, cold storage and processing problem of technical knowledge about the orange cultivation.

Laundari (2004) made a study entitled on 'An Economic Analysis of Orange Production: A Case Study of Purkot VDC of Tanahun District. The main objective of this study is to estimate the production function of orange. In linear and non linear form with labor, farmyard manure and chemical fertilizer as the main inputs of this study. This study based on the primary as well as secondary data. The raw data collected through the study are converted into logarithmic form and are presented in regression analysis, hypothesis testing. The production qualities of inputs and outputs. A Cobb-Douglas production function is fitted to analysis the data collected.

This study is concluded that, the manure is found to be the most significant variable in orange farming. Human labor also has significant role and has positive effect in most of the models. There is positive as well as negative effect of the chemical fertilizer in orange farming. The negative effect can be attributed its improper doses. F-statistics is positively significant in all models which indicates that the strong statistical relationship between input and output of orange. The value of  $R^2$  shows the percentage of total variation in the production. Among all models  $R^2$  has a high value of 0.093 in models I which is similar to that of model III and IV. This lowest  $R^2$  is in model IV and its value is 0.003. The sums of production elasticity are also less than unity (1) in model I, II and III which indicates diminishing returns to scale.

Dhakal (2010) carried out a study entitled 'cost benefit analysis of orange production In rural area : A case study of Syangja district 'The main objectives of this study are to analyze the main determinants of orange cultivation, describe the orange farm size, their distribution and production trend and highlight the problems and prospects of orange cultivation.

The study is based upon both primary and secondary data .The primary data are collected through field survey, structured questionnaire and unstructured interview method. Secondary data are collected from various publications like DDC,VDC,and CBS etc. He has taken 636 households in phaparthum and 15% households are taken out of randomly by using lottery methods.

The study has concluded that the orange growers are suffering from various problems. This study give some recommendations are as follows;

- The farming method is traditional, modern technology and method should be launched. Training facilities should be proved to the local farmers time to time.
- Irrigation facility is so weak in the study area, so there should be development of irrigation facility.
- Market mechanism should be managed in order to provide reasonable price of production.

The existing system of marketing and storage or cold house are not systematic. Mandarin orange is grouped in citrus reticulata and it commonly called 'Suntala' in Nepali it is referred to cultivate in humid and sub tropical climate. Especially the favorable climate and soil condition of the hilly areas had attracted the farmers towards fruit production. Citrus cultivation would help to improve the economic condition of farmers, to generate employment opportunity and ecological condition balance. But for fruits cultivation needs patience and determination because fruit growing is a long terms process. Transportation was taken manually in higher cost. The channel of distribution was very simple in the study area; farmers sold their product to local Bazar. Price was fixed by bargaining between the seller and buyers. So, price differs among the markets and buyers. Orange marketing system is very poor which lead to have low price to the producers because of lack of administrative efficiency, the government and private agencies and lack of transportation and storage facilities.

### **2.3 Research gap**

All available studies have focused on production cost and existing problem of rural

unemployment and food scarcity, explain different aspects, various aspects of cultivation and distribution pattern of orange, to identify the key issues facing the orange and main determinants, problem of orange production and marketing technology and techniques of orange production and nursery plantation of orange in Nepal. To study all these research I want to identify the study to focus the existing conditions of socio-economic life of the orange growers and the contribution made by orange production in the income of orange growers.

# **CHAPTER-III**

## **METHODOLOGY**

This chapter discusses the set of methods, which are employed to conduct the research. The whole study is carried out on the basis of primary as well as secondary data. This chapter deals with the methodology used for data collection, processing and analysis.

### **3.1 Research Design**

Research design is the frame of the study, which helps the researcher to study in related area working on the topic of orange production and its contribution on income of farmers. It is intergraded system that guides the researcher in formulating, implementing and controlling the study. Useful research design can produce the answer to purposed research question. This research is carried out on the basis of descriptive research design, The study generates the focus on the existing conditions of socio-economic life of orange growers specially in the study area and orange production and its contribution in the income of farmers, particularly of the people of Suklagandaki municipality 1 Thaprek of Tanahun District.

### **3.2 Nature and Sources of Data**

The primary data is the main foundation of this study. The primary data is collected through a sample field survey; Secondary information is collected from various publications of CBS, MoAc, VDC profiles, DDC profile, annual agriculture development programme etc. Thesis and other different related sources are brought into the study as the secondary data.

### **3.3 Techniques and Tools of Data Collection**

The data used in this study has been collected in 2016/17. They are used to estimate and analyze the orange cultivation and its socio-economic status of the surveyed households. The survey is conducted through the formal method of interview and a structure questionnaire.

## Questionnaires

A set of question have been formulated to obtain data from the farmer. The questions included were related to size of land holding, size of orchard, production level of oranges, income etc.

## Interviews

Interviews were taken to the selected sample households by the researcher herself. General information from concerned agencies such as key information and concerned agencies related to citrus/agricultural development were obtained through informal discussions.

### 3.4 Universe and Sampling

For the purpose of this study, 3 wards namely ward number three, four and six were taken as study area. All the orange growers of residing in three wards were the universe. Based on Laminations related to time money and capacity of the researchers a sample size of 50 farmers was considered adequate for this study. A proportional distributed random sample of 50 farmers was related from these wards. A random sample of one in every six households was related from the list of orange growers from each ward. The ward wise distribution of sample is given in table 3.1

Table 3.1

The Distribution of Sample Size of Orange Grower Households in Ward Number, Three Four and Six of Thaprek VDC

Ward No.	Orange Growers' Household	Sample Size
3	37	20
4	35	17
6	25	13

Source: *Field Survey, 2016/17*

Table 3.2 shows that 20 farmers were selected from ward number three, 17 from ward number four and 13from ward number six. There is a unequal number of household in the sample household from different wards because there is difference in total number of household in those wards.

### **3.5 Data Collection Instruments**

Data for the present research has been collected through structured questionnaire, unstructured interview and participant field observation, which was done by the researcher of this study herself 15 December 2016 to 28 February 2017.

### **3.6 Data Analysis and Interpretations**

Information collected from interview has been transformed into a master sheet and data is tabulated on the basis of master sheet. Both qualitative and quantitative data have been coded and processed. The data have tabulated, analyzed by using simple means of statistical dispersion such as average and percentage. The information collected in the survey schedules were in local units which is familiar to the common people. The purpose of comparisons and standardization the local units of amount and quality have been extrapolated (calculate approximately known value) to standard units of measurement. The data are presented in the form of tables, pie chart and bar diagrams.

### **3.7 Rationale for the Selection of Study Area**

The present study has been carried out in Suklagandaki Municipality 1 Thaprek of Tanahun District which is the part of Western development region. The reason for selecting Thaprek as the study area is that the researcher is an inhabitant of the study area. This study is carried out to fulfill the thesis requirement of master's degree in economics by a student. The researcher is bound to incur minimum financial expenditure. Secondly the researcher is familiar with the local farmer. Therefore by selecting this area, it is believed that more accurate information could be collected. The total number of the house hold in Thaprek is 776. Out of them 157 household are farming the orange. The frequency distribution of total number of household and total number of orange growing household in different ward of Thaprek VDC is given in table 3.2.



Table 3.2

The Distribution of Total Number of Households and Total Number of Orange Growing Households in Different Ward of Thaprek VDC

Ward No	Total Number of HHS	Total No. of HHS With Orange Farming
1	60	12
2	84	10
3	129	37
4	108	35
5	59	9
6	52	25
7	73	9
8	122	15
9	89	5
<b>Total</b>	<b>789</b>	<b>157</b>

*Source: VDC Profile, 2067*

Above table shows minimum number of total household are present in ward number six and highest number of total household in ward number three. The minimum and maximum numbers of orange growers are also concentrated in the same wards. Almost all household in the VDC grow oranges as it is shown that 157 household out of 789 household grow oranges.

# **CHAPTER-IV**

## **DATA ANALYSIS**

This chapter deals with the analysis of primary as well as secondary data focusing on production and marketing of orange and socio-economic status of the study area. It shows the background of study area and productivity and production of citrus and orange in Thaprek. It also deals about market features, orange marketing and contribution in the study area. Furthermore, issues of problem and prospects of orange production are also analyzed.

### **4.1 Brief Introduction of the Study Area**

This study is confined to the Suklagandaki Municipality 1 Thaprek of Tanahun district. Tanahun lies in the pardesh no 4 .Gandaki Zone of Western Development Region (out of the five development region) of the country. This District is surrounded by Chitwan and Gorkha in East, Syangja and kaski in west, kaski, Gorkha and Lamjung in North and Nawalparasi, chitwan and Palpa in South. The total area of this district is 1546 square km. This district has four municipality that is Suklagandaki, Bhanu, Bhimad , Byas and six rural municipality that is Bandipur ,aabukhaereni, myagde,debghat, rising, and ghiring. According to the census 2011 the total population of the district is 323288 out of which males and females are 143410 and 179878 respectively. The total number of household is 78309. Average family size is 4.13. Density of population is 209 per square km and male female ratio is 79.7 .in the Tanahun District (Tanahun Bastugat Bibaran, 2072)

Most of the land in Tanahun district in occupied by hills. There are some valleys and plain area which are better for cultivation. Through there are many streams and rivers. Only 51.3 percent of the potential cultivation areas are occupied by irrigated land.

The annual average rainfall of the district is 1761 mm. The maximum rainfall was recorded in july (507 mm) and minimum rainfall in November and December (0.0 mm). During 2071B.S, the maximum temperature of this district was 38<sup>0</sup> to 41<sup>0</sup> c and minimum temperature is 3<sup>0</sup> c to 5<sup>0</sup> c. The climate of this district is subtropical (Tanahun Bastugat Bibaran, 2072).

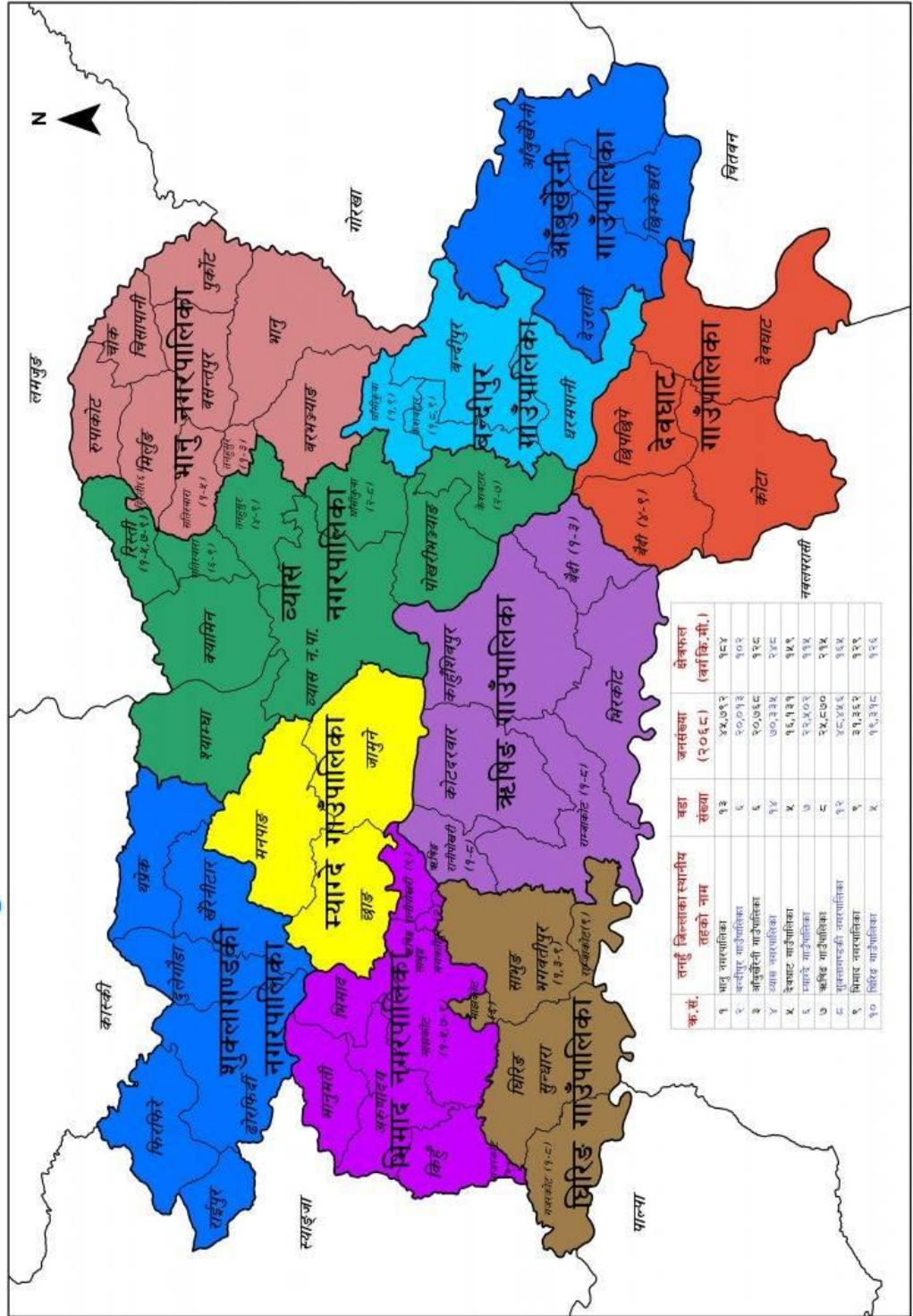
Tanahun district is divided by Prithivi Highway (Pohara-Naubise) into two parts. Dumre-Besisahar, Dulegauda Bhimad. Dumre Bandipur and Aanbukhairani Gorkha are the branch black topped highway in Tanahun district. This road is very important for western belt of this district and for some village of Syangja and Nawalparasi. Beside these roads. These are some graveled roads for transportation (DDC, 2016)

Age of fifteen years and above population is known as economically active population sixty percent people are economically active in Tanahun district. Out of total economically active population 73.36 percent are engaged in agriculture. It is observed that the farmer grow maize, millet, wheat, paddy, potato etc. Some people are inclined towards commercial fruit farming like orange, banana, lemon, sweet orange, junar, guava, jackfruit, pineapple, lichee, mango, papaya etc. Out of economically active population, are engaged in government or private services, business activities and physical work activities and other occupation.

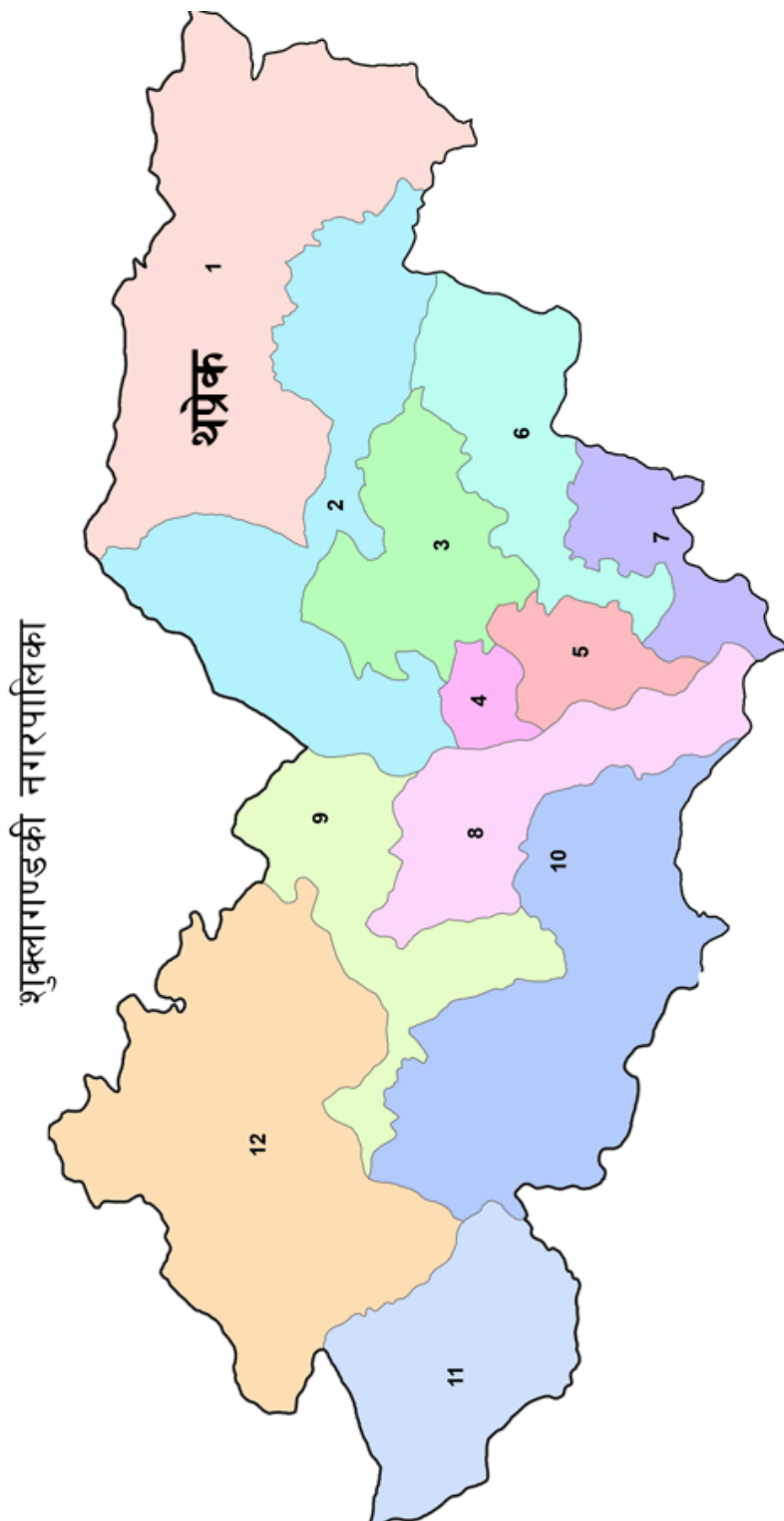
All of the 4 municipality and six Rural municipality in Tanahun District, Suklagandaki municipality 1 Thaprek is large a terms of orange production. Thaprek lies in the northern parts of Tanahun district. Thaprek is bordered by Shymgha in east, Dulegauda and Kaski district in west, Kaski district in north, Khairenitar and Myagde Rural municipality in south. The latitude of Thaprek is  $28^{\circ} 5'$  to  $28^{\circ} 11'$  north and longitude is  $84^{\circ} 10'$  east. The total area of Thaprek is  $35.54 \text{ sq/ km}^2$ . The latitude of Thaprek is 434.73m to 12442.22m from the sea level. Most of the land is covered by forest (64.97%). Only 34.19% land is used for cultivation (VDC profile, 2067). The information of map of Suklagandaki municipality is shown in the below Map.

Map of Tanahun District, West Nepal

तनहुँ जिल्लाका १० स्थानीय तहहरू



Map of Suklagandaki Municipality, Tanahun District West Nepal



The total population of thaprek is 4327 among which 1971 are female and 1703 are male. Out of the total population 68.2% population are economically active (VDC profile, 2067). The distribution of population by sex wise and caste wise is shown in the table 4.1.

Table 4.1

Sex wise and caste wise Distribution of Population

Caste	Population		Total Population
	Male	Female	
Gurung	350	473	823
Braman	305	424	729
musalman	162	180	342
Kami	99	119	218
Famai	77	75	152
Magar	71	80	151
Danyasi	57	83	140
Chhetri	57	82	139
Thakuri	57	67	124
Sarki	22	29	51
Gharti	19	20	39
Sunuwar	18	16	34
Other	4	5	9
Total	1298	1653	2951

Source: Jilla Bastugat Bibaran, Tanahun 2072

**a. Climate**

Climate of Tanahun district dependent on monsoon and Thaprek also. The data show that this ward 1thaprekget monsoon from May to September. The climate in this ward is subtropical and temperature. Sometimes hailstone destroy the farmers' crops especially corn and fruits. (Tanahun Bastugat Bibaran 2072)

## **b. Soil**

There are four types of soil are found in Thaprek they are red soil, black soil ,sandy soil and mixed soil. In this area amount of mixed soil is found more than other soil. Mixed soil is considered appropriate soil for the orange cultivation so the District agriculture department office has recommended cultivation of orange in this area. Red and black soil is appropriate for paddy production where as black soil is appropriate for the maize and millet cultivation.

## **c. Natural Vegetation**

Natural vegetation mainly depends upon the climatic condition and soil texture of the particular area. Climate itself is mainly determined by topography. Forest is one of the important natural resources of Nepal. During the past few year forest was in state of rapid decrease. To control deforestation and develop the forest, consumer groups have been formed and many programmers such as plant production and distribution, plantation of community forestry, implementation and evaluation etc. have been conducted to enhance general awareness of the people in the forest sector. Various species of plant are found in Tanahun and study areas are mainly katus, sal, chilaune, tiju, baar, pepal etc.

## **d. Road and Transport**

Theprek of Tanahun district is linked to kotre bazaar by laldhwaj marga. It is linked by sindhumarga with shymgha too. Transportation service is not getting reliable. passengers, bus service from Thaprek to Pokhara and from Thaprek to kotre bazaar plays once a day people have to carry their back in order to sell in the market.

### **4.1.1 Ethnic Situation of Sampled Households**

There are different casts and ethnic groups in Thaprek VDC. Production of different crops and livestock are also based on traditional values and customs of the ethnic groups. Thus it is important to the ethnic composition of the study area to evaluate the status of orange production. The data on caste and ethnicity of the sampled orange grower's households is given in table 4.2

Table 4.2

Caste wise composition of sampled Households in Three Wards of Thaprek

Sampled Ward No.	Brahman	Chhetri	Gurung	Magar	Bishowkarma	Pariyar	Total
3	5.33	0.0	0.0	0.23	1.8	0.2	7.56
4	2.79	0.25	1.48	0.0	1.13	0.25	5.9
6	1.20	0.0	5.8	0.0	0.0	0.0	7.0
Total	9.32	0.25	7.28	0.23	2.93	0.45	20.46

Source: VDC Profile 2067

**[Note: Figure indicate percentage]**

Table 4.2 shows that the majority of the households under study area are Brahman which consists 45.55 percent of the total, followed by Gurung 35.58%, Bishowkarma 14.32%, Pariyar 2.19%, Chhetri 1.22%, Magar 1.12%. The maximum number of Gurung was found in ward no. 6 and Gurung was not available in the ward no 3. Maximum number of Brahman was found in ward no 3 and minimum was in ward no 6. Thus, it can be concluded that Brahman is dominant Ethnic groups among sample households in the study area.

#### 4.1.2 Occupational Status

There are different kinds of occupation taken by the respondent in the study area. The main occupation of the sampled households is agriculture. Besides agriculture, service and business are the other main occupations of the sampled households are agriculture. Besides agriculture; services and business are the other main occupations of the sampled household. Major present occupational status and level of orange cultivation have some relationship. The major occupation of the sampled households is presented by the table 4.3.



Table 4.3

## Distribution of occupation held by sampled Households

Ward No.	Agriculture	Service in Nepal	Service in Foreign Countries	Total
3	11	3	5	19
4	12	4	3	19
6	7	3	2	12
Total	30(60)	10(20)	10(20)	50(100)

Source: field survey 2016/17

[Note: Figure in the parenthesis indicate percentage]

Table 4.3 shows that out of 50 respondents, 30 respondents (60 percent) of the orange grower farmers have agriculture as the main occupation. Other occupations held by remaining orange growers are service (20 percent) and services in foreign countries (20 percent). In ward no 4, maximum number of households has been depending on agriculture than others. This shows that, the main occupation of sample households is agriculture.

#### 4.1.3 Family size of sampled Households

Family size may determine the demand for consumption of fruits and availability of the labor force for orange cultivation. The result of the survey reveals that the total population of the 50 sampled households is 253 and average family size is 4.5. Those households with maximum number of family member are 8 whereas the minimum number is 2. Table 4.4 shows the distribution of households by family size on the sampled households.

Table 4.4

## Distribution of sampled Households by Average Family Size

Ward No	Average Family Size of household
3	4.6
4	5
6	5.4

Source: Field survey, 2016/17

Table 4.4 shows that among all 50 orange grower farmers, the average family size by different wards consists of 4.6, 5, and 5.4 of ward number 3, 4 and 6 respectively. Comparing the family size of three different wards, family size of ward no 3 is smallest than ward number 3 and 6.

#### 4.1.4 Sex Distribution of the Respondents in the Study Area

For the orange cultivation sex distribution of the farm households may play important role. Males actually plant trees but their motive is business. Females in the household take the responsibility of caring plants, animals and small children in the family. They give higher emphasis to the nutrition value and health care. Thus sex distribution can be an indicator of the motives of the orange cultivation. The results of sex distribution obtained from the respondents are given below table 4.5.

Table 4.5

Distribution of the population by the sex

Sampled Ward No	Number of HHs		Total
	Male	Female	
3	108	190	298
4	91	119	210
6	73	95	168
Total	272	404	676

Source: District profile of Tanahun 2072

The table presented above shows that ward 3, 4, 6 total male are 272 and female are 404 and the Total population of ward no 3, 4, and 6, are 676.

#### 4.1.5 Educational Status of the Study Area

Education plays vital role in the development of people. It is expected that educated people will understand the nutritional and economic importance of orange fruit and plant more number of trees in their orange orchard. On the other hand uneducated people may give more emphasis on the cereal crops production. To find out the educational status of the population of the Thaprek, education level of each number of the family was obtained through the questionnaire and VDC profile. The data received are presented in the following table.

**Table 4.6****Educational Status of Thaprek VDC**

	Illiterate		Literate		SLC		PCL		Bachelor		Masters		PHD	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
	177	341	1126	923	171	124	58	46	35	13	8	3	1	1
Total	518		2049		295		104		48		11		2	

*Source: VDC Profile, 2067*

The table which is presented above shows that the literate people of the area are found to be 2049 members. The data presented in the table 4.6 reveals that majority of the family members belong to SLC pass 295 and 165 peoples have studied the higher level education.

#### **4.1.6 Sizes of Land Holding of the Respondent**

The main occupation of all orange owners is agriculture. All of them have their own land to cultivate. Orange cultivation depends on availability of the land suitability of the area and willingness of the land owners to allocate land for oranges. While calculating the land holding, only operational land holding has taken into account. The respondents were asked to provide the area of owned by them. It was classified into small, medium and large size of holding if they owned less than 0.5, 0.55 to 1.25 and above 1.25 Hectare of land. Table 4.7 shows the distribution of land holding of the orange growers.

Table 4.7

Distribution of Land Holding of sampled Wards of Orange Grower Farmers

Ward No	Average land holding in Hectare			Total
	Small	Medium	Large	
3	0.16	0.40	0.34	0.9
4	0.18	0.40	0.17	0.75
6	0.16	0.45	0.23	0.84

*Source: Field Survey, 2016/17*

Above table shows that average size of land holding per family is 0.28 Hectare. On an average ward number three have the highest land holding and ward no four have the lowest. In ward number four, the average small size of land holding is higher than other wards. Again, in ward number six the average medium size of land holding is higher than ward number three and four and in ward no six the average large size of land holding is higher than other two wards. Fragmentation of land due to the segregation from the family member is the main cause to have minimum lands. Out of this land, some land is used to cultivate the orange production.

#### **4.1.7 Livestock Holding**

Livestock rearing is the second largest economic activity in the mountainous and hilly region of Nepal. Types of livestock have a direct impact on the type of crops grown as well as type of trees plantation. All the orange grower farmers have some kind of livestock. On an average the orange grower farmers have some kind of livestock. On the average the orange grower farmers own 3 heads of livestock. The Number of plant owners having more than average size of livestock. The number of orange grower farmers having more than average size of livestock is 15. The situation of the livestock holding in the sampled households in the study area is presented in Table 4.8

Table 4.8

Total Number of livestock Reared by the households of different Wards

Ward No	Cow	Buffalo	Goat	Pig	Total
3	15	39	13	7	74
4	12	30	12	0	54
6	17	40	20	0	77
Total	44(21.46)	109(53.17)	45(47.88)	7(3.41)	205(100)

Source: Field survey, 2016/17

[Note: Figure in the parenthesis indicate percentage]

Table 4.8 shows that most of the households keep buffalo. This table shows that sample household of ward number 6 have more Buffalo holding than other sample households. Only two households have held the 7 pigs in this study area. Total number of cow, buffalo, goats, and pigs are 44, 109, 45 and 7 respectively. Out of 50 households, one household has 24 livestock and 3 households have one livestock and 2 households have no livestock. Household of ward number 6 have reared the maximum number of livestock and 4 have reared minimum number of livestock. The compost of livestock is the main fertilizer of the orange farming.

#### 4.1.8 Main Crops Produced in the Study Area

There are various types of cash and cereal crops produced in the study area. The cereal crops growing is main business and orange production is side business. The main crops are rice, wheat, maize, millet etc. The main crops produced by respondents are given in table 4.9.

Table 4.9

Average production of crops in sampled Households in Different Wards in Muri

Ward No	Main Crops Producing Sampled HHs			
	Rice	Maize	Millet	Others
3	22.5	4	3	1.2
4	20	4.5	2.5	1
6	21.5	3.5	2.8	1.5
Total	64	12	8.3	3.7

Source: Field survey, 2016/17

Table 4.9 indicates that rice is the dominant crops for all three wards at the average production. Maize is second most important crops followed by Millet. Among them average production of rice is highest in ward number three and lowest is ward no four. Maize and millet produced limited in the study area. Other crops are produced in negligible amount. It is concluded that Rice is the main cereal crops and second is maize in the study area.

#### 4.1.9 Food Sufficiency in the Study Area

Food scarcity is the serious problem in the hilly region of Nepal. Food sufficiency is defined as the condition in which people have sufficient food that is required for them in whole year and food deficiency is the condition in which people do not have sufficient food. The major food crops such as rice, Maize, Millet etc. have grown in the study area but the production is not sufficient to fulfill the consumption needs of the people. Farmers give more priority to produce food crops, only then they produce fruits and vegetables. Only those farmers who are self sufficient in food production option to plant orange. The situation of the food sufficiency condition for the three different wards in the study area is presented in table 4.10.

Table 4.10.

Food sufficiency Condition of the different wards of the sampled HHs

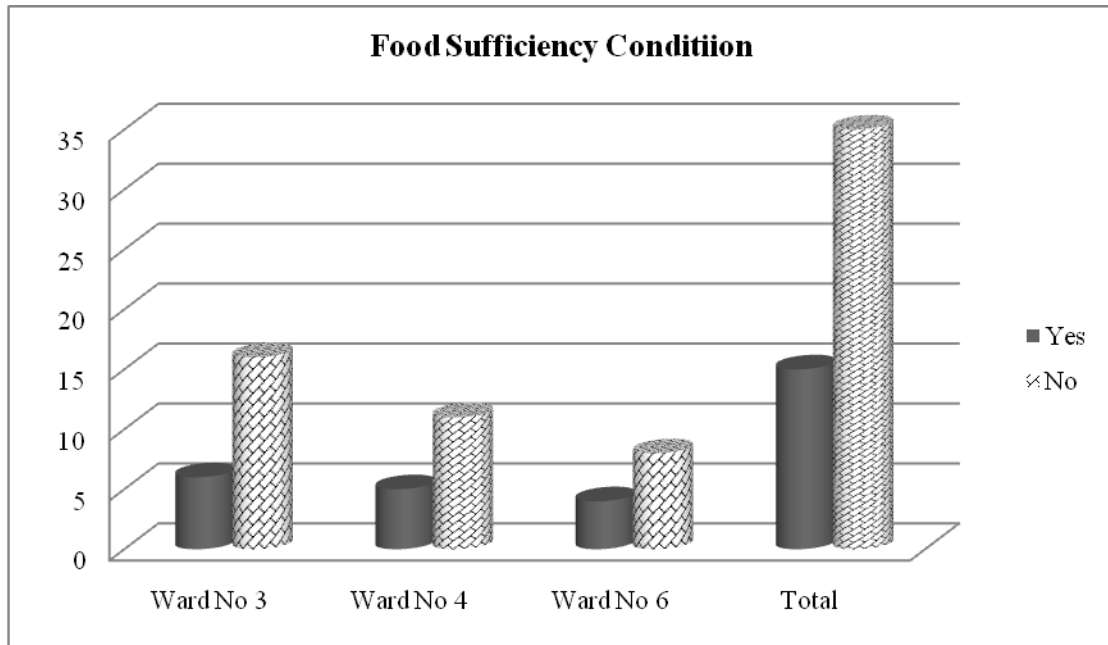
Ward No	Food Sufficiency Condition		
	Yes	No	Total
3	6	16	22
4	5	11	16
6	4	8	12
Total	15(30)	35(70)	50(100)

Source: Field Survey 2016/17

[Note: Figure in the parenthesis indicate percentage]

Figure 4.1

Frequency Distribution of food Sufficiency Condition of the Sample HHs in Different Wards



Above table and figure shows that respondents of ward number 3, out of 22 respondents 16 respondents have food problems but only 6 respondents have no food problems. In the ward no 4 out of 16 only 5 respondents have food sufficient for consumption but 11 respondents have faced the problem of food consumption. And respondents of ward number 6 reports that among 10 households only 4 respondents have food sufficient another six respondents have faced the problem of food consumption. From the above table and figure that, out of 50 respondents only 15 (30 percent) don't have food shortage around the whole year. But 35 (70 percent) Are facing this problem .It can be concluded that, there is food deficiency in the study area. Among them two third of households are facing the problem of food deficiency.

## 4.2 Contribution of Orange Production in Income of Orange Growers

### 4.2.1 Orange Cultivation

Orange is perennial tree. Once planted they bear fruits after six to seven years and continue bearing for several years. Newly bearing and old trees produces less than full

productive trees. Therefore trees need to be classified into three categories such as newly planted stage, full productive stage and retiring stage. To estimate the level of production as well as orange farming respondents were asked to provide the number of orange trees in their farm at the different stages. The data, provided by the respondents, are presented in the table below.

Table 4.11

Frequency Distribution of Average Number of Orange Trees in Different Stages of production in Different Wards in the Thaprek VDC

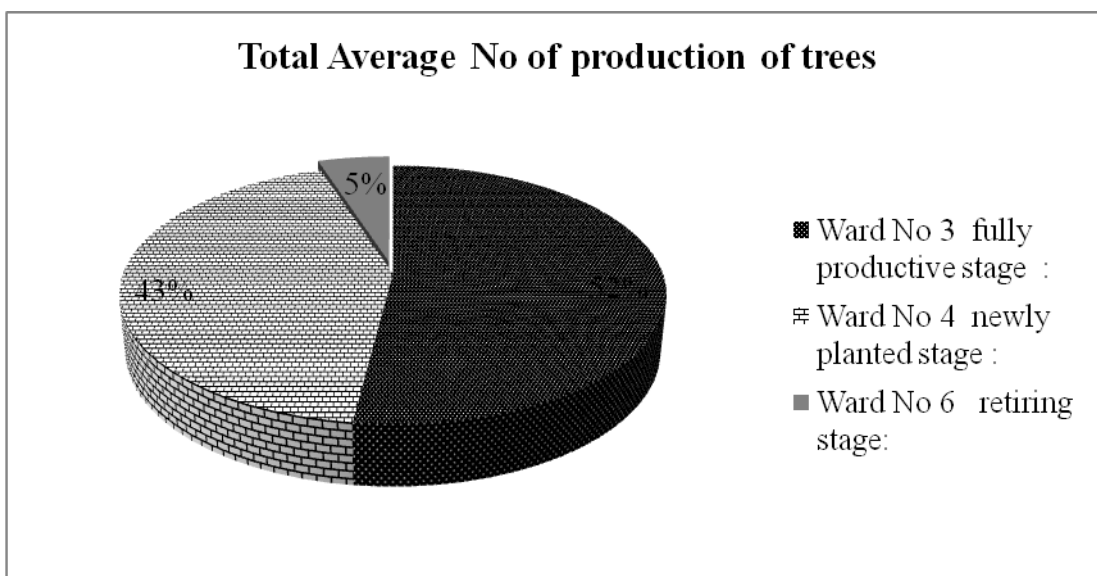
Ward No.	Average Number of Production of Trees			
	Newly planted stage	Fully productive Stage	Retiring Stage	Total
3	71	85	8	164
4	63	72	10	145
6	67	84	6	157
Total	67(43)	80(52)	8(5)	155(100)

Source: Field Survey, 2016/17

[Note: Figure in the parenthesis indicate percentage]

Above table shows that the average numbers of trees of full productive stage are higher than other stages, retiring stage and newly planted stage in every sample wards. Comparing by wards, respondents of ward number 3 have higher number of trees in fully productive and newly planted stage than retiring stage, as 85, 71 and 8 respectively. The table shows that respondents of ward no 3 might have started to plant orange tree later than other two wards because they have higher number of fully productive stage trees. And they are also planting new orange trees than other wards. The average number of retiring trees is also very small than others. On the other hand, whole number of newly planted trees is higher than retiring trees. It shows that there is further expansion in planting new trees. Respondents of ward number 4 have lowest number of trees and that of ward number 3 have highest number of trees. Newly planted stage, fully productive stage and retiring stage is 43 percent 52 percent and 5 percent respectively.





#### 4.2.2 Total Production and Income of Orange

The production of orange depends on area and number of trees on full productive stage. The income depends on total production, price and households consumption of orange. Thus, farmers were asked to provide their production as well as total number of full productive stage trees and income of current year. The production was associated with number of trees, fruits per tree and different stages. The average income was associated with the amount of sale and price charge. The average income was associated with the amount of sale and price charge. The data provided by the respondents are presented in the table below.

Table 4.12

Average Production and Income of orange of Sample HHs in the Different Wards

Ward No.	Average Production and Income of Sample HHs	
	Average Production (in Tons)	Average Income (In Thousand Rs.)
3	4	43
4	3	39
6	2.5	37
Total	9.5(3)	119(39.5)

Source: Field survey 2016/17

Above the table 4.12 shows that average amount of orange produced by all respondents was 3 tons per household when evaluated from the perspective of ward

numbers. Maximum average production is 4 tons in ward number 3 and minimum of 2.5 in ward no six. Some amount of orange produced are sold while others are consumed at home. The income generated is only from the sold orange. The average income received by all sample households is Rs 39.5 thousand. Maximum average income of Rs. 43 thousand and minimum of 37 thousand are received by the farmers of ward number 4 and 6 respectively. Average production and income was high in ward number three whereas income was high in ward no 3. It might be due to higher price received by these farmers.

### 4.2.3 Share of Households Consumption and Sale

In past, fruits and vegetables were used to produce only for home consumption. Some sorts of social obstruction were used to distribute to neighbors, friends and relatives without cost. Now situation has changed. In place of free distribution, people sell their production and rests are sold in the market. So, farmers were asked to provide the amount of consumption and sell and the result of respondents are given in the following table

Table 4.13

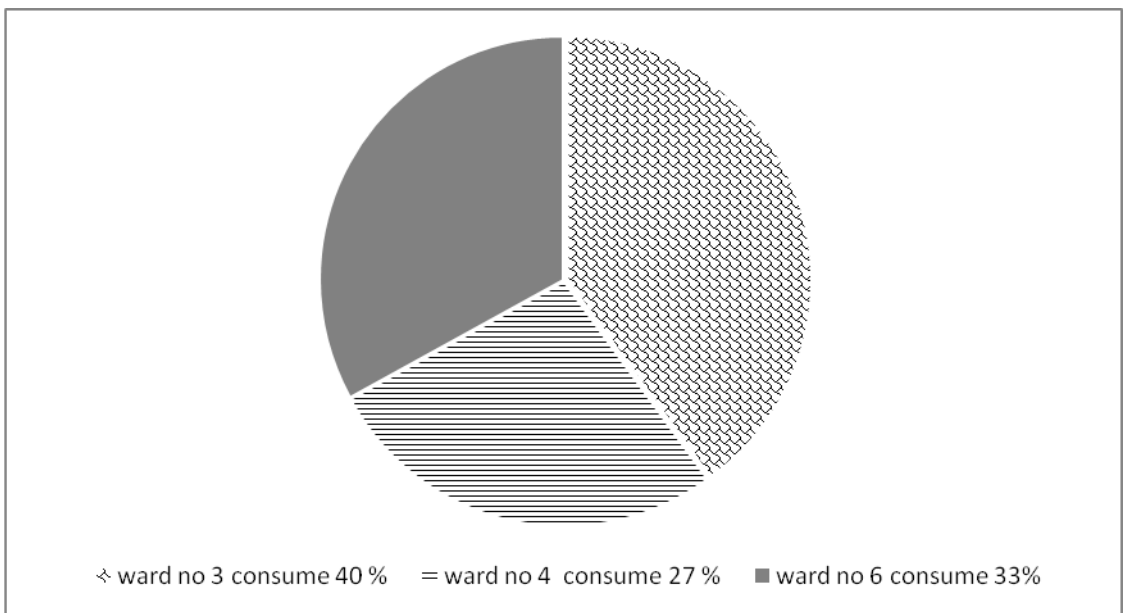
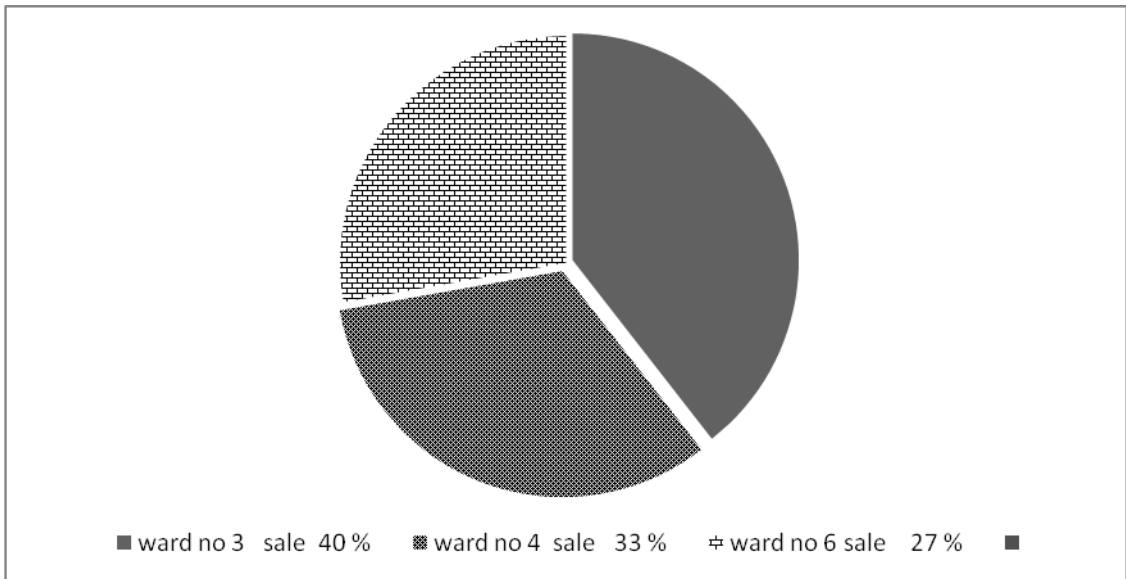
Share of Average Consumption and Sale of orange in Sample HHS of Different Wards

Ward No	Average Quantity of Consumption and sale (In Tons)		
	Sale	Consumption	Total
3	3	0.3	3.3
4	2.5	0.2	2.7
6	2.1	0.25	2.35
Total	2.53	0.25	2.78

Source: Field survey, 2016/17

The table shows that the average consumption of ward number 3 is highest than other wards and average sale is also lower than these wards. Average selling of the farmers of ward number 3 is highest and the average consumption is lower than other wards respondents. The maximum average sale is 3 tons and minimum average sale is 2.1 tons. Total average sale and consumption are 2.53 and 0.25 tons respectively.

To make it clear and meaningful of above data is present the following pie chart.



#### 4.2.4 Annual Income Earning from Orange Farming

Basically, orange is produced for household consumption and selling. The orange cultivation has not only the traditional aspect but it has also been an important aspect of income generation playing a significant role in the socio-economic life of the people. It is an option to uplift the economic status of the people. This study has exercised to take the real picture of income generation from orange production in orange growers. How the income made by the farmers is distributed between different farmers is given by the relation between income categories and the wards were the

study was done. For this purpose the income made by the farmers was categories into small, medium and large income group where less than Rs. 60 thousand annual was considered small, Rs. 60000 to Rs 120000 was medium and more than Rs 120000 was considered large. The frequency distribution of farmers from different wards into three different categories and the contribution made by orange production in the income of orange grower farmers is given in the table 4.14.

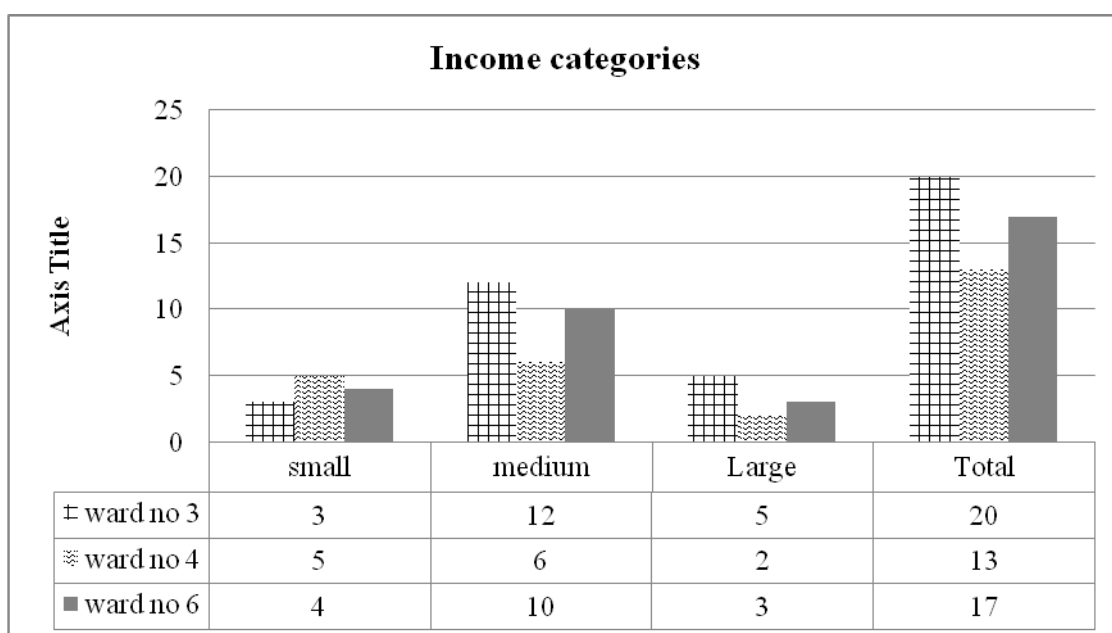
Table 4.14

Frequency Distribution of Farmers falling into Different Income Categories Different Wards in the Thaprek VDC

Ward no	Income Categories per year (In Thousand Rs)			
	Small	Medium	Large	Total
3	3	12	5	20
4	5	6	2	13
6	4	10	3	17
Total	12(24)	28(56)	10(20)	50(100)

Figure 4.2

Annual Income Earning from Orange Farming of farmers in Different Wards



Out of the 50 households of orange growers, 12 households have income below 60

thousand earning by the sale of orange per year. Proportion of households whose income range from Rs. 60000 to Rs. 120000 is higher in the sample which is 28 households (56percent). This shows that middle level of families are more interested in farming the orange in the study area because orange farming uplift the economic condition of the farmers.

#### 4.2.5 Trend of orange Production in the study Area

Fruit is a type of cash crops occupied a very significant place in agriculture production in the study area. Especially orange is the most popular fruit among another fruit. The level of orange production since last five years is analyzed in this research. Average area in H , Production of orange and annual income obtained by selling the orange in the study area since last Five years are given in the following table below.

Table 4.15

Trend of orange production in the study Area since Last Five Years

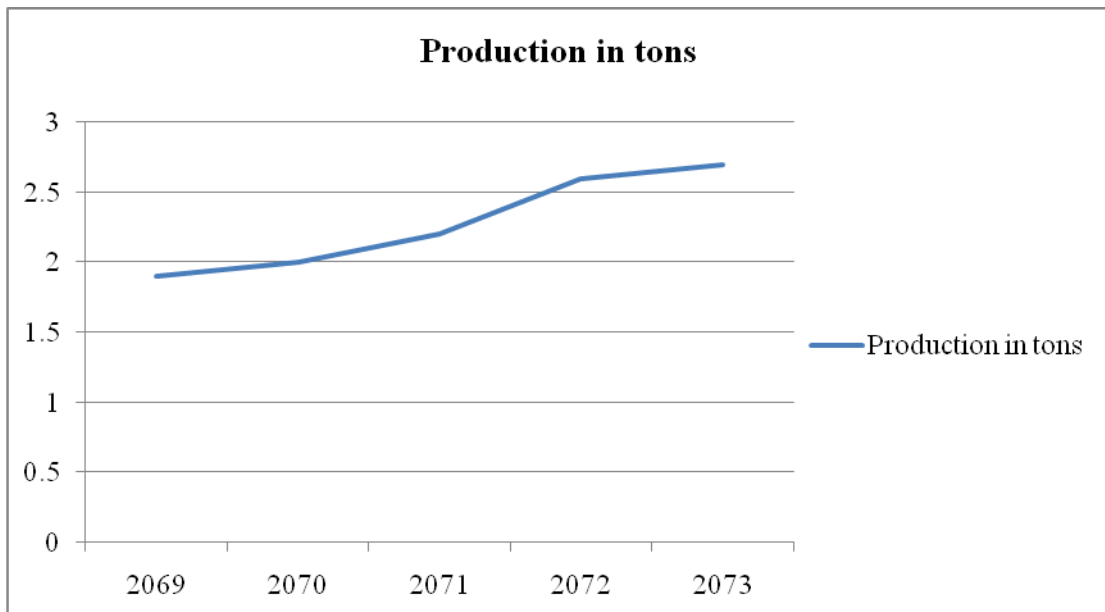
Years	Area (in Hectare)	Production (in Tons)	Income(In Thousand Rs)
2069	0.22	1.9	53.1
2070	0.25	2.0	53.8
2071	0.26	2.2	54.2
2072	0.27	2.6	55.5
2073	0.33	2.7	56.2

*Source: Field survey, 2016/17*

Above table shows that the five years trend of area in Hectare, production in Tons and income in Thousand Rs. during the period of 2069-2073. From the above table we can see that cultivated area is increasing year by year. And it production in Tons and income in Thousand Rs was also increased from 1.9 to 2.7 and 53.1 to 56.2 respectively in between the years 2069 to 2073 B.S. It is concluded that the status of income level is increasing year by year and economic status of orange grower farmers is also increasing in this study area.

Figure 4

Trend of Orange production in the Study Area since Last Five Years



Above trend line shows that the production of orange in different five years is increasing. In 2069 B.S. only 1.9 tons of orange is produced by per household in the study area and in 2073 B.S the total production of orange is 2.7 tons per household.

Trend line indicates that the orange production in the study area is increasing per year.

#### 4.2.6 The cost of Orange Farming

The expenditure involve in different sector such as planting, manuring and fertilizer, pesticide, harvesting and marketing etc. is considered as the operational costs. The summary from the cost involved in different items is presented in table 4.16.

Table 4.16

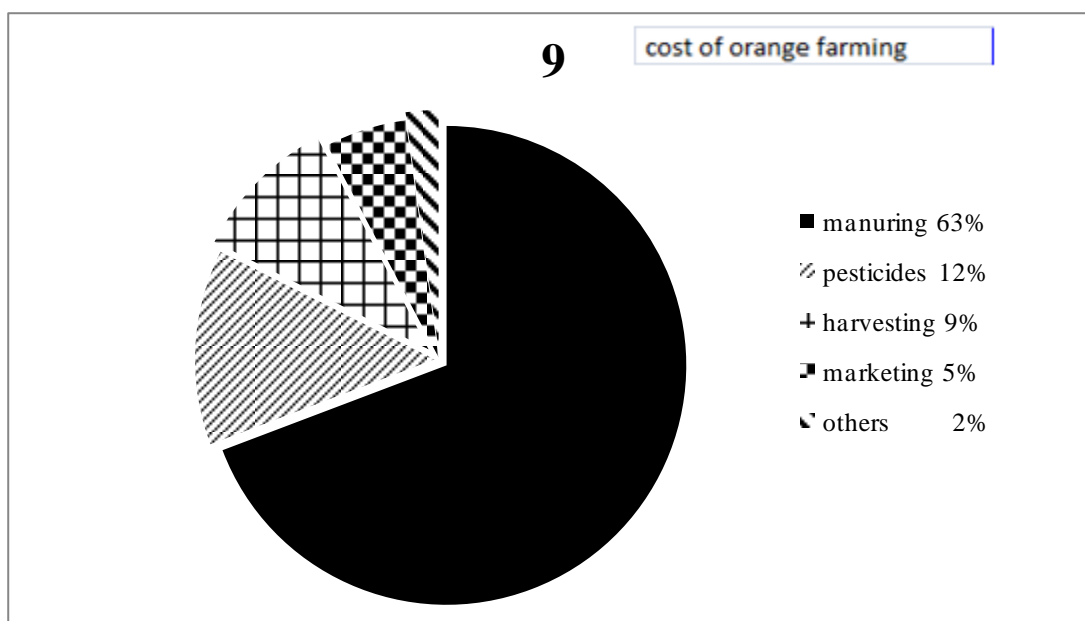
Cost on orange Farming per Year in sample HHS in Different Wards in Rs. per Farms

Ward No.	Particulars						Total
	Planting	Manuring	Pesticide	Harvesting	Marketing	Others	
3	870	5200	1100	850	450	200	8670
4	610	5150	1000	700	300	150	7910
6	600	5000	850	600	550	250	7850
Total	2080	15350	2950	2150	1300	600	24430

Source: Field survey, 2016/17

Table 4.16 shows that the manuring cost is found to be the highest on the orange farming. it is accounted 62.83 percent of the total orange farming cost. Similarly pesticide accounts 12.07 percent, planting accounts 8.51 percent, harvesting accounts 8.80 percent, marketing accounts 5.32 percent and other cost accounts 2.45 percent of the total cost. It is concluded that, high expenditure is spent on manuring and second for pesticide to produce the orange in the study area.

To make it clear and meaningful of above data is present the following pie chart.



#### 4.2.7 Season of Harvesting

The month of November and December are the main harvesting seasons of orange.

However it starts from October itself. Especially small garden holders harvest green or not fully ripped fruits in the month of October. Such farmers harvest their crops earlier than full maturity stage of fruits because of the economic constrains. However, almost all farmers harvest their orange products in the month of November and December. The view of simplicity we have classified three stages of season that is early seasons, peak seasons and end season. Orange price varies with seasons and peak season fetches lower price than other season because oranges are easily available in peak season.

#### **4.2.8 Markets and Marketing Channels of Orange**

In an economy, production and marketing must go hand in hand. Marketing plays an important role to stimulate production and consumption and accelerates the pace of economic development of a country. The horticultural marketing in Nepal is highly decentralized. The marketing of horticultural crops is very complex because of perishable nature, seasonality and bulkiness. Cultivation of horticultural crops is more profitable than any other seasonal crops. Marketing of horticultural crops in Thaprek is largely unorganized and is in the hands of intermediaries such as wholesalers, retail traders, pre-harvester contractors and others.

The major channels for orange in Tanahun district of Thaprek are identified as follows:

**Channel- I:** Producer Pre-harvest contractor/ Commission Agent Retailer Consumer

**Channel-II:** Producer Pre-harvest contractor/Commission Agent Wholesaler Retailer Consumer

**Channel- III:** Producer Pre-harvest Contractor/Commission Agent Merchant wholesaler Wholesaler Retailer Consumer

Market has a significant role for orange farming .well organized market system not only encourages farmers to increase their orange production but also assumes good returns of their investment. On the other hand unavailability of market discourages farmers to produce orange. Similar to other wards of the Thaprek VDC, periodical market call play an important role in the economy of the study area. Basically oranges are sold in Pokhara and Damauli.



There are opposite relationship between buyers and sellers in terms of price of orange in the study area. Orange price is always in favor of buyers because orange is perishable fruit as a result, farmers have to sell their product according to demand of buyers. Therefore the real orange producers don't get the maximum benefit. In the context of study area, village traders called 'kharide' have played an important role for marketing of orange. During the period of harvesting they come in orange farm and buy orange of the whole sale basis. Two types of village traders have found there, some of the traders take orange at district headquarter. Other large markets of orange are like Pokhara, Kathmandu etc. Few oranges are sold in local market by themselves.

### **4.3 Problems and Prospects of Orange Farming**

#### **4.3.1 Problems of Orange Farming**

Orange farming provides additional cash income to the farmers by generating so many employment opportunities. So it play significant role in the development of rural economy of the hill people especially in the study area. Orange farming can be the additional option to uplift the poor economy of the farmers. But farming is still infantile and unorganized in Nepal. Farmer might face several problems in the orange farming. The respondents were asked to provide the problems faced by them while in orange farming. The problems faced by the farmers are as follows.

The main problems of orange farming is irrigation, natural calamities, lack of organized marketing, prevalence of pests and disease and technical knowledge etc in the study area. The cause of unorganized market is that they are compelled to sell their production at distressed price every year. Farming of the orange fruits requires special skills and technical knowledge. The traditional farming system is still presence in the orange farming. This cannot give the higher productivity of orange. So the orange growers were asked the problems faced by them in orange farming which is given in the table below.

Table 4.17

Frequency Distribution of problems Faced by Farmers of the study Area

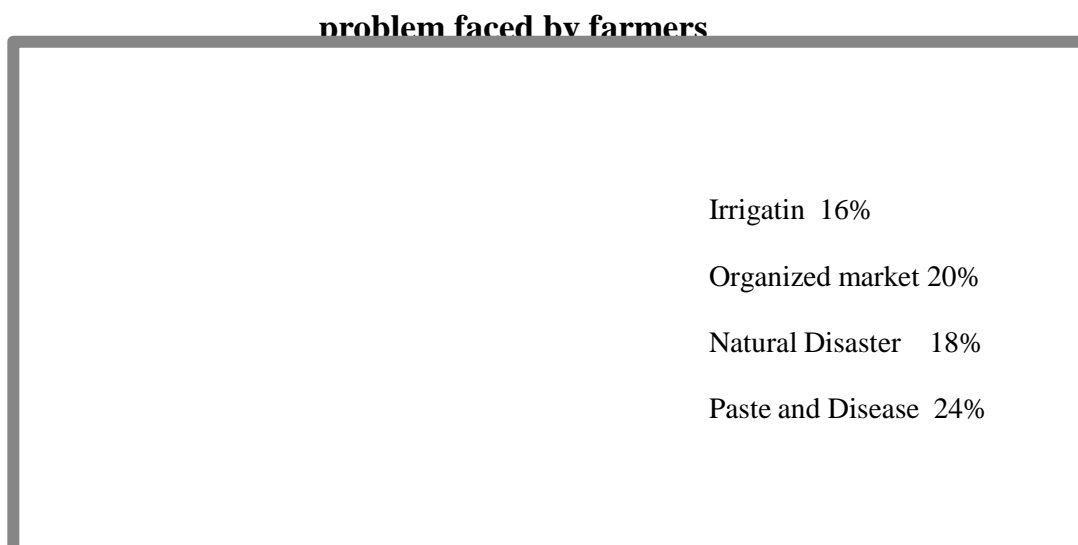
Problem Faced by Respondents					
Ward No	Irrigation	Organized Market	Natural Disaster	Paste and Disease	Technical Knowledge
3	9	14	12	16	15
4	9	8	7	11	11
6	5	6	7	8	5
Total	23(46)	28(56)	26(52)	35(70)	31(62)

Source: Field survey, 2016/17

[Note: Figure in the parenthesis indicate percentage]

The given table shows that respondents of every ward are facing many problems such as, irrigation, natural calamities, marketing, pests and disease, technical knowledge and others in orange farming. Out of 50 respondents 35 (70 percent) orange grower farmers faced paste and disease which is higher than others and second problem faced by respondents is technical knowledge which is 31 (62 percent) out of 50 respondents, problems of Organized market, natural disaster and irrigation have been faced by 28(56 percent) , 26(52 percent) , 23(46 percent) respondents respectively.

To make it clear and meaningful of above data is present the following pie chart.



### **4.3.2 Prospects of Orange Farming**

The farming of orange may generate additional employment opportunities establishing subsidiary industries. It will provide new employment to the people, which can help to reduce the problems of unemployment and migration from village to urban.

Though there are several problems of orange farming and they limit the development of its farming, there are still sufficient possibilities to promote the orange production in Thaprek.

Due to favorable climate condition and increasing demand of orange, the local orange growers are still interested towards its cultivation, which is proved by table 4.15. Although for the good achievement, it is necessary that both government and private sector should be interested to develop this sector. Orange farming plays an important role in balancing the declining environmental condition in one hand and the other hand it has found more beneficial as compared to the cereal crops giving a good source of cash income. Continually increasing population and development of tourism has encouraged the demand of fruit where as Nepal still imports fruits to fulfill the increasing demand of it. In this context, orange farming has better prospect not only in the study area but also in the whole hilly region of the country.

Particularly in case of Thaprek, the whole sample orange growers have agreed with its good future prospect. It has tremendous prospect to increase the production and income of orange grower farmers. It also helps to promote health condition of the people in this study area by consuming fruit juice like orange.

# CHAPTER V

## SUMMARY, CONCLUSION AND SUGGESTIONS

At last all the findings will be presented further more this chapter will consists some overcome such problem it will be the gist of the study and will represent the whole thesis.

This study attempted to address the farmer's participation in orange farming for the enhancement of the income. This study is based on primary data obtained through the method of probability sampling i.e. simple random sampling without replacement method. All finding derived in the study represents the response of the local farmers.

This chapter deals with the summary and conclusion of the study and also provides the recommendation for further study.

### 5.1 Summary

Orange production has become one of the most important alternative economic activities in Suklagandaki municipality. Ward no1 Thaprek, where nearly 20% farmers have made orange cultivation commercially. rest of the people are also attracting towards orange farming The main objectives of this research is to find out the contribution of orange production relating to socio economic condition and income level of the study area and to find out the trend of orange production in this study area. The purpose of this study, out of 789 households in this ward, 50 households was selected by using proportional distributed random sample method. Information for this study was obtained from journals books, and published and unpublished articles. Majority of the data are presented in tabular forms. Generally, descriptive methods of analysis were used to reach the conclusions.

### 5.2 Conclusion

The forgoing discussion and analysis of data clearly indicates that production and marketing of oranges has enormous potential in the study area despite a number of constraints being faced by the farmers. The study highlighted that major thrust should be given on development of production, dissemination of new technology, assured

input supply and strong marketing support. The growers are experiencing number of problems both at the production and marketing level as they do not have pre-requisite resources and finance for expansion and strengthening of orange orchards. Moreover they had to face problems of certain diseases and insect and pest problems which damage the plants. The marketing of oranges in the study area has mostly been under monopoly traders and the whole market is controlled by some intermediaries who exploit the orange producers by purchasing the produces at a very lower price and sale it to the consumers at higher price.

- In the study area improve economic condition and uplift the farmer income level due to orange cultivation.
- Increases the living standards of farmers who cultivated the orange.
- Increases an education, health and sanitation facilities who cultivated the orange.
- Increases the employment opportunity and establishing subsidiary industries. Of people of study area.
- It will provide new employment to the people, which can help to reduce the problems of unemployment and migration from village to urban.
- In the study area there are various caste/ethnic groups, Brahman, Chhetri, Magar, Kami & Damae. Brahman constitutes 24.70% of total respondents and are most dominating group.
- Out of 50 respondents, 40.23% were male and 59.76% were female respondents. Average family size was 5.4 .Households with maximum number of family member are 10 whereas the minimum number is 2.
- Around 60% were engaged in agriculture sector .Another two sector services in Nepal and services in foreign country occupied equally 20%.
- The educational status of this study area is satisfactory.
- The medium land owner has the highest ratio regarding the land ownership followed by small and large.

- The main crops are rice, wheat, maize, millet etc. Rice is the dominant crops for this ward at the average production and the average production per households is 21.33muri. Maize is second most important crops followed by millet. Among them average production of Rice is highest. Maize and millet produced limited in the study area.
- In this study area different livestock have been reared. I.e. cow, buffalos, goat, pig and chicken. Only Bishowkarma and Nepali reared pig among respondents.
- Total number of trees was classified into three categories such newly planted stage, full productive stage and retiring and newly planted stage and the average total number of productive trees are 155 per households including all three stages. Out of 155 around 43 % trees were newly planted another 5% are at retiring stage and 52% are at fully productive stage.
- Average income from orange sale is 39.5 thousand. Maximum average income of Rs. 43 thousands and minimum 37 thousands are receive by the farmers
- The main aims of orange production are the study area are consumption and sell. People sell their orange production in the market. As a whole Total average sale and consumption are 2.1 and 0.25 tons respectively.
- Among 50 households of orange growers, 12 households have income below 60 thousand earning by the sale of oranges.28 households have income range from Rs 60000 to Rs 120000 is higher among sample households. And only 10 households have more than Rs.120000 income earning by the sale of the orange. This shows that middle level of families are more interested in farming the orange in the study area because orange farming uplift the economic condition of the farmers.
- Analyzing of data shows that cultivated area was increasing year by year i.e. cultivated areas is increased 0.22 Hectare to 0.33 Hectare in between the years 2069 to 2073. and its production in tons and income in Thousand Rs. was also increased from 1.9 to 2.7 and 53.1 to 56.2 respectively in between the years 2069 to 2073 B.S. so the trend of orange production is increasing year by year. It is concluded that the economic status of orange grower farmer is also

increasing in this study area.

- The expenditure involve in different sector such as planting, manuring, and fertilize, pesticide, harvesting and marketing etc.it considered as the operational costs. In this study area, the manuring cost is found to be the highest on orange farming. It is accounted 62.83% of the total orange farming cost. Similarly pesticide accounts 12.07percent planting accounts 8.51 %, harvesting accounts 8.80 %, marketing accounts 5.32 % and other cost accounts 2.45% of the total cost.
- All farmers harvest their orange products in the month of November and December. The view of simplicity we have classified three stages of season that is early season, peak season and end season. Orange price varies with season n peak season fetches lower price than other season because oranges are easily available in peak season.
- Oranges are sold in Dulegauda Khaireni Damauli and Pokhara by farmers as well as village traders. Orange price is always in favour of buyers because orange is perishable fruit as a result, farmers have to sell their product according to demand of buyers. Therefore the real orange producers don't get the maximum benefit. During the period of harvesting village traders come in orange farm and buy orange of the whole sale basis.
- The main problems of orange farming is irrigation, natural disaster, lack of organized marketing , prevalence of pests & disease and technical knowledge etc. in the study area . Farming of the orange fruits requires special skills and presence in the orange farming. This cannot give the higher productivity of orange. Out of 50 respondents 35 (70 %) orange grower farmer's faced pests and disease which is higher among other problems.
- The main prospects of orange farming are to balance the declining environmental condition in one hand and the farming of orange. To generates additional employment opportunities establishing subsidiary industries. It will provide new employment to the people, which can help to reduce the problems of unemployment and migration from village to urban .continually development of tourism has encouraged the orange farming.

### 5.3 Recommendations

Following recommendation have been derived from the present study. it is recommended that the concerned organizations as well as government should take necessary steps to implement the recommendations of this study in the forthcoming days .

- The government should provide facilities regarding production such as supply of inputs i.e. to provide seedlings, fertilizers, and pest and disease control chemicals.
- Bringing awareness amongst the rural people about the new developments in agricultural engineering technology in the fields of production and marketing.
- Providing integrated approach to fruit cultivation and modern storage facilities by the government. There is a urgent need to establish cold storage facilities in the study area as they had to sale the produce immediately after harvesting at a lower price.
- The packaging system should be developed; it should be capable of protecting the product from the transport hazards, preventing from insect damage etc. The package must stand up to long distance transportation, multiple handling and the climate changes of different storage places, transport methods and marketing conditions.
- There is a need to develop the road communication system to facilitate the transportation of marketable goods at the marketing centers. Improvement of rural roads/communication facilities would encourage the producers and reduce the cost of production as well as the transit losses.
- Contract based farming should be stopped; as the orange growers lease their orchards in the hands of pre-harvest contractors to avoid risk they received a very low amount of profit. So, the growers should try to establish their orchard independently.
- Direct marketing should be encouraged among the orange growers which involve marketing of produce by the farmer directly to the consumers without any intermediaries. Direct marketing helps to generate the idea of market oriented



production and increases profit of the producer. It promotes employment to the producer and enhances the consumers' satisfaction. It provides better marketing techniques to producers and encourages direct contact between producers and consumers. It encourages the farmers for retail sale of their produce also.

- The provision of institutional credit and loans would encourage the growers to increase the productivity. Institutional credit in the form of crop loans should be provided in easy terms, so that the farmers are not compelled to take loans from the private traders on pre-condition of selling the produce at a low price. The state government may negotiate with the banking system in this regard.
- The growers of orange should be encouraged to adopt some measures for value addition, including grading and standardization of the produces according to size, shape and degree of ripeness & maturity. Presently, grading of oranges is done manually which time is consuming. Thus, mechanical grading devices need to be developed for this purpose.
- The state government should be concerned to enact pricing policy to fix minimum support prices for oranges in the state.
- Organizing training programmes for the farmer's agricultural labor, entrepreneurs about the use of new technology should be initiated
- Government should encourage the youth to get involved agriculture specifically, production of fruits by organizing them into co-operatives that enable them to access credit facilities.
- There is needed to strengthen the marketing systems which can eliminate unhealthy practices and also ensure fair price to the producer. The Government should conduct regular inspection of markets and market surveys to study the various problems and situations. It will facilitate regular supply of agricultural product at reasonable price, which may be remunerative to the growers as well.
- The higher productivity of orange in farming at Thaprek is highly potential from the economic point of view because it provides the higher return of orange farming in the sample households. Therefore, the farmers are encouraged to produce orange.

- Authentic micro level research and study should be done to find different aspects of orange cultivation.
- The farming method is traditional, so modern technology and method should be launched. Training facilities should be provided to the local farmers time to time.
- The existing system of marketing and storage are not systematic. Because of far located main market centers, most of the growers are being exploited by middleman / broker. So emphasis must be given for the development of organized marketing system.
- There should be establishment storage and processing industry, which may reduce to damaged fruits during the period of harvesting and marketing period.
- There should be management of insecticides, pesticides, agricultural tools and improved seeds for orange growers.
- The government needs to play a catalytic role in promoting private public partnership in production and marketing of orange.
- The government is suggested to ban the import of fruit till the national products cover its demand. it helps to correct the balance of trade.
- For the better production and to raise the productivity, the role of horticulture department most active and effective.
- Due to favorable soil, landscapes and climate in Thaprek of Suklagandaki Municipality in Tanahun orange cultivation has better prospects.
- Importance and benefits of the orange Farming should be broadcasted by radio, TV and moreover through FM channels (most of the people in the study area listen FM radio and watching TV now a days) .
- The government should bring attractive program on the orange farming regarding subsidy, long term loan facilities with minimum interest rate and mechanical aspect of the plants.

The researcher work at micro level is prime need to increase the production from the orange farming. The concerned authority should put more concerned effort at findings new ways of orange farming. Sometimes, finding market, irrigation and transportation for orange are the main problems due to a complex geographical condition.

The orange cultivations should be provided loan of a cheaper rate of interest lower than the market rate. The agriculture Development Banks of Nepal charges 10 to 11 percent rate of interest to orange farmers. Government should give 5% subsidies to this high rate of interest.

The training provided to the farmers also seems to be ineffective may be due to current potential situation. When the people have a hand to much problem they do not bother to think about trainings and other capacity building program. They try to find the simple way of doing things given their local technology, knowledge and human skill.

## BIBLIOGRAPHY

- Adhikari, G.N.(1992). Maindrain Production in Bhojpur District. *A Case Study of Annapurna and Chhinamakhu VDC*, An Unpublished Thesis to Department of Economics. Tribhuvan University, Kirtipur Kathmandu:
- Agricultural Project Service Centre, (1989). *Feasibility Study of Citrus Development Project for the Selected Mid-hill District of Nepal*, Kathmandu Agricultural Project Service Centre.
- AHDB, (2013). *Annual Report and Accounts*; Kathmandu:
- Budhathoki, K and others, (1989). *Production Constraint of Mandarin in Western Development Region*, Kaski: Agricultural Research Centre (LARC) Lumle, Nepal.
- Central Bureau of Statistics (2014). *Tanahun Bastugat Bibaran 2072*, Pokhara: Kaski, Nepal, CBS Branch Statistics Office.
- Central Bureau of Statistics, (2014). *National Sample Census of Agriculture*, CBS, Kathmandu, Nepal.
- Central Bureau of Statistics, (2014). *Population Census 2011, National Report* Kathmandu:
- Chapagain, Y. K, (1987). *A Study on Orange Marketing in Bhojpur, its Position, Problems and Prospects*, An Unpublished MBS .Thesis Submitted to Central Department of Management, Tribhuvan University, Kathmandu, Nepal.
- Chhetri, N.B. (2002). *Orange Cultivation in Sikkim* An Unpublished Thesis Submitted to Department of Economics. Tribhuvan University. Kathmandu.
- DADO (2072/73). *'Barsik Krisi Bikash Karyakram Ra Tathyanka ek Jhalak'* Tanahun.
- DADO (2072/73). *'District Agriculture Data book'*, Tanahun.
- Dhakal Tank Parsad (2010), *Cost Benefit Analysis of orange Production in Rural Area: A Case Study of Syangja District*, M.A Thesis Submitted to Department of Economic T.U, PNC Pokhara, Nepal.

District Council Plan (2073\74). Tanahun

Encyclopaedia Britannica, (1978). *The New Encyclopedia Britannica, Macropedia*, vol 7, 1978 , p766 , McGraw Hill Book company , New York.

FAO, (1975). *Marketing Fruit and Vegetable Guide Book No.2* FAO Head Office, Rome.

Fruit Development Directorate, (2073). *Annual Report of Horticulture Development Programme 2072/73*, Fruit Development Directorate, Kirtipur, Kathmandu, Nepal.

HMG/DFAMS, (1979). *Fruit Production in Kaski and Syangja District*, Government of Nepal, Department of Food and Marketing Service, Kathmandu , Nepal.

Karmacharya, Bashudev, (2063). *Nepal Ma Falful Kheti Ra Kalami Garne Prabidhi* (First Edition ), Karmachrya Publication, Kathmandu, Nepal.

Laundry, Bishow raj, ( 2004). *An Economic Analysis of Orange Production: A Case Study of Purkot VDC*, An unpublished MA Thesis Submitted to Central Department of Economics, TU, Kathmandu Nepal.

Ministry of Agriculture and cooperative, (2016). *Statistical Information on Nepalese Agriculture, 2015/16*, Government of Nepal, Ministry of Agriculture and cooperative, SinghaDurbar Kathmandu, Nepal .

Ministry of Finance, *Economics Survey (2071\72) MOF\GOV*, Singha Durbar, Kathmandu, Nepal.

Ministry of Finance, *Economics Survey (2072\73) MOF\GOV*, Singha Durbar, Kathmandu, Nepal.

Ministry of Finance, *Economics Survey (2073\74) MOF\GOV*, Singha Durbar, Kathmandu, Nepal.

National Planning Commission, (1970\75 to 2069\070). *Fourth Plan to Twelve Plans*, National Planning Commission Secretariat, Kathmandu, Nepal.

National Planning Commission, (2070\71 to 2072\073). *Thirteen Plans*, National Planning Commission Secretariat, Kathmandu, Nepal.

National Planning Commission, (2073\74 to 2075\076), *Fourteen Plans*, National Planning Commission Secretariat, Kathmandu, Nepal.

NCRP, (2010). *Annual report. National Citrus Research Programme*, Nepal Agriculture Research Council, Paripatle, Dhankuta.

*Nepal Portfolio Performance Review (NPPR) 2015* Ministry of Agricultural Development (MoAD)

Pandey, D., Kumar, A. and Singh, R. (2011). *Marketing*

# QUESTIONNAIRE

## Orange Production and its Contribution on Income of Farmers

(A case study of Suklagandaki Municipality 1 Thaprekof Tanahun District)

Household Questionnaire No:

Ware No:

### 1. General:

Name of the household head:

Sex: Male/Female

Name of the respondent...

Caste... Religion .....

### 2. Social Information:

#### a. Family Background:

S.N	Name of the Family Member	Age	Sex	Educational Status	Occupation
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					

b. Land Holding In Local Units (Ropani)

Type of Land	Area in Ropani			
	0-10	10-20	20-30	30>
Khet				
Bari\Pakho				
Orange field				
Total				

c. Give the number of livestock you own

Livestock	Buffalo	Cow\Ox	Goat	Pig	Poultry	Other
Number						

d. How much area is planted and how much food gains is produced in your farm annually?

Cereal Crops	Rice	Maize	Millet	Others	Total
Cultivated area					
Annual Production					

e. Is your own production sufficient to meet your food requirement?

a) Yes { }                                      b) No { }

f. If no how many months is it sufficient?

**3. Information of Orange Farming**

a. When do you start commercialization cultivation of orange farming? B.S ...





h. Please, Tell me your orange production (in Tons) since last 5 years?

Years	Area (in Ropani)	production (in Tons)	Annual Income (In Thousand Rs.)
2068			
2069			
2070			
2071			
2072			

I. Are you willing to expand your orchard?

a) Yes { }                      b) No { }

J. If yes what are your limitation?

i)

ii)

iii)

iv)

v)

K. How much money do you spend for different activities related to orange production?

Invented Rs.

Activities

Panting

Manuring

Fertilizers

Harvesting

Others

L. What short of change is brought in your family?

Changes	Quality
Purchase	
Construction new home	
Maintenance the old house	
Schooling child (gov\Private)	

M. Would you like cereal crop farming and orange cultivation?

N. Have you taken loan for orange farming?

a. Yes ( )                                      b. No ( )

O. If yes

Sources of Loan	Amount	Interest rate in %
a) Financial institution		
b) Co-operative society		
c) Money Lender		
d) Other		

P. If no , do you like to take loan for orange farming?

a. Yes ( )                                      b. No ( )

Q. Have you got any type of help from Government or NGO's?

a. Yes ( )                                      b. No ( )

R. If yes what type of ?

a. Technical ( )                                      b. Farm management ( )

c. Irrigation ( )                                      d. Other ( )

S. Can you sell your production in the desired time?

a. Yes ( )                      b No ( )

T. If no, why?

U. Are you getting satisfactory price of your product?

a. Yes ( )                      b. No ( )

V. If not what are the causes?

a. Lack of suitable market

b. Lack of storage

c. High transportation cost

d. Middleman agent

e. Other

W. What are the difficulties of market of orange?

a. Transportation

b. Lack of storage

c. Unsatisfactory price

d. Inaccessibility

e. Other

N. How the profitability of orange production can be increased?

a.

b.

c.

d.

e.

M. How are the problem and prospects of the production orange farming in your locality?

Problem

Prospects

.....

.....

.....

.....

.....

.....

.....

.....

N. What are your suggestions to the government?

.....

.....

.....

*The Ends*

*Thank You*