CHAPTER – I

INTRODUCTION

1.1 Background

Nepal is a small landlocked hilly and agriculture country between India and China. It is surrounded by India in the east, south and west and China lies to the north. It is righty rectangular is shape extending over a length of 885km from the east to west. It is situated between $26^0$22' and $30^0$27' north latitude and between $80^0$4' and $88^0$12' east longitude. It covers an area of 1, 47,181 Square kilometers. Of the total land of Nepal, Only 18% is cultivable. The development of agriculture expansion of area of fruits, vegetable and spices is supposed to adoption of high value crops by the farmer to increase their income. Cultivation of large cardamom in the eastern hilly district of Nepal is such an endeavor. Large cardamom is one of the oldest spice Known to mankind large cardamom cultivation play vital role of increase economic development for rural area of farmers.

Nepal is divided into three regions. Himalayan Hilly and Terai region based on the physical features. The Himalayan region lies in the northern part of Nepal and occupies 15% of the total land of the country. This region ranges from 4877 meters to 8848 meters from the sea level. This region includes some of the world's famous peak like Mt. Everest, Mt Kanchanjanga, Mt. Manaslu, Mt. Makalu, Mt. Annapurna, Mt. Dhaulagiri and so on. This region is the origin of most of the big and perennial rivers of Nepal. The Hilly region lies in the central part of the country and covers about 68% of the total area of Nepal. This region ranges from the height of 600 meters to 4,877 meters. It is estimated to occupy 42% of the total land area of the country. It is made up of high and low hills, footh hills (besi) plateaus (tar). Some important valley like Kathmandu and Pokhara etc. It is most important from economic point of Nepal. This part is plain. It stretches from Mechi in the east to Mahakali in the west. This region ranges from sea leaded to 600 meters, and covers about 17% of the cultivate land area of Nepal. About 60% of the cultivated land is the country lies in this region. This part is made up of the central deposited by the reveres that originate from the central hill so the soil is fertile. The reform this part of the country is called "the storehouse of grains of Nepal"

In Nepal rainfall occurs out of south eastern monsoon. The rain mainly occurs during the summer season. The eastern part receives almost double of the rain fall as compared to western part of Nepal in summer season. Due to the variety of topographical condition here is diversity in weather and climate. The country experience tropical types of climate. For the purpose of sound and administration and balanced development of the country, it's divided in to five regions, fourteen zones, seventy five districts, 3915 VDCs and 58 municipalities.

According to the latest census 2011, the total population of the country is 2, 64,94,504. The male population is 1, 28,49,041(48.50%) and female population is 1,36,45,463. Geographic distribution of population is skewed. Census of 2011 counted 50.27%, 43.01% and 6.73% of total population in Terai. Hills and Mountain regions respectively. The population density is computed as 180 person per square kilometer. Out of them in urban area, 1381 person and in rural area, 153 persons per square kilometer.

Nepal is a landlocked hilly and agricultural country. Thus the development of the national economy depend on the development of agricultural. Agricultural development is envisaged either by increasing the productivity of the existing crops by applying new technology or by adapting new and more profitable crops by the rural farmers, expansion of area of fruit, vegetable and spices is supposed to be adoption of high value crops by the rural to increase their income. Cultivation of large cardamom in the eastern hilly districts of Nepal is such an endeavor. Large cardamom play vital role of rural farmers for economic development. It was known to Greeks and Romans as Amonum and was recorded by Theophrastus the Greck Philosopher as early as 4^{th} century B.C. in botanical classification, Large cardamom belongs to zigeberaceasc family. Its scientific name is Amomum Subulatum Rom. Its Nepali name is Alainchi. It is different from the small cardamom, which is cultivated mostly in south India, Srilanka and Guatemala; Both of them are used as spices. The large cardamom plants are grown between the altitude of 500 and 1800 meters above the mean sea level in slopes of the hill where plenty of well drainable water is available, preferable in the north slopes or under the shade of tress. Seventeen different kind of shading trees are known in use but very common with better performance is Uttis. Cardamom plants are grown in sloppy marginal land not suitable for other crops. It is also seen to protecting soil erosion, floods and landslide.

Large Cardamom plants flower at March and fruits are matured during the humid summer monsoon period August and September. The color of the seeds inside the fruits determines the harvesting time. The seeds are white when immature and gradually brown to black when fully matured. The fruits are harvesting in bunches, which contain 20-24 fruit capsules. The cardamom bunches are cured from 7-10 days by spreading the bunches in dry room. During the period, the cardamom capsules are loosened from the bunch and separated manually. If curing is done improperly, the bunches will be attacked by mould and the capsules get black in color. Immediately after removing from the bunches, the capsules are dried otherwise the fruits are also attacked by mould. The raw cardamom capsules are bright purple in color having a thick 3mm peet and have 80% moisture. Dried cardamom is black, brown to purple colored large almond sized fruit containing a sweet pulp and some 40-50 camphor's seed. The color of the dried product largely depends on the drying process and sweet pulp contained depends upon the maturity the fruits.

Large cardamom is and aromatic crop. Dried ripe fruits give a strong flavored spice. Its seeds are dark brown in color or fewer rounds in shape and 3-4 mm in diameter. The seeds give volatile oil. The oil content is 2.04%. The seeds are useful in promoting appetite and function of stomach. It is also used in the cure of nerve pain. The oil from large cardamom is aromatic, stimulant, and appetizer and applied to eyelids to allay inflammation

The large cardamom looks like black capsule, in average 2.25 cm long (minimum 2.2 cm and maximum 2.3cm), which contains 28 to 58 hard brawny black angular seeds per capsule. Its pod is triangular. The color of its pod seems as dark reddish brown. The plants grow in cluster. The pods are developed on the base of the plant. The plant requires mild sub-tropical climate in the hilly area. The temperature and rainfall requirements of the plant are 10 to 25 degrees and 1500 cm to 6200 cm annual rainfall. The growing season and harvesting time is August to September.

Cardamom is harvested immediately after monsoon period. Cardamom drying and processing is a big problem for the growers because the self-life of the harvested cardamom is only two weeks if it is kept spread in dry room. The season itself is very humid and wet and fuel wood availability is also minimum in that period. The depletion of the forest and the lack of it conservation had prevailed the scarcity of the fuel-wood for cardamom drying in non-efficient conventional bhatti, discouraging the

cardamom growers. The requirement of fuel food for drying large cardamom is very high almost one an half times its weight to dry fuel wood purchased fire wood by the cardamom growers had increased the cost and added the burden of management in absence of effective electrical driers. Trees used for shading in the cardamom field play a significant role to meet the fuel-wood requirement for drying cardamom. There are about seventeen species of shading trees known to use in cardamom field. Among them, uttis is found to be better performing and fast growing.

Large cardamom cultivation is comparatively new enterprise and is being taken by farmers from the eastern hills of Nepal. Technical support from the government is slowly coming through the extension service. Processing of large cardamom for adding the value or organized marketing to increase the bargaining power of the farmers is a distant activity. The contribution of Large cardamom in the income of farmers and foreign currency earning of the country is increasing due to which attention is being drawn by this crop over the year.

1.1.1 Significance of Large Cardamom in Nepalese Economy

Cardamom farming that started from the eastern hills of Nepal has how expanded to 40 districts across the country. But 97 percent of the land where it is cultivated is in the 12 district of eastern region. It is cultivated in 3,647 hectares in Taplejung, 3,259 hectors in Sankhuwasabha, 2,774 in Ilam, and 1,800 in Panchtar. It is cultivated in 14,000 hectors of land across the country.

Cardamom is an important cash crop in Nepal with and annual production as of 2069/70 is 7086 metric tons. It is 41.68 percent of the world production. In 2068/69 the production was around 8,000 tons of cardamom. Out of them 5,103 tons cardamom was exported in the fiscal years. Almost the entire production is sold outside the country; India is the main market for Nepali Cardamom, Nearly 90% to India. According to the Trade and Export Promotion Center, Rs.3.49 billion was exported between 2068 and 2069. It is cultivated in 40 districts of Nepal occupying on area in the range of 13,500 to 14,000 hectors

The Cultivation of Large Cardamom began in Nepal about 760 years ago or so on. In the past People from the eastern districts used to go to Sikkim, India during cardamom harvesting season in search job and income opportunities. Cardamom is an important cash crop in Nepal. Out of 18 major export items 5 are from agriculture sector. Of these, cardamom is generation foreign currency, contributing to Rs. 3.85 billion in the year 2069/070.

The district of Taplejung is the leader in terms of area and production of cardamom occupying 29% of the total land area with 32% of the total national, production. Productivity is also the highest in Taplejung. Total production of cardamom was around 17,000 metric tons per year in the world. And Nepali Cardamom is around 7,068 metric tons out of them around 4,000 metric tons was production of Taplejung (Annapurna post Tuesday September 16 2014). Nepal is in the lead among the cardamom producing countries. It is cultivated in marginal and degraded slopes and does not complete with other food crops. In fact it helps in rehabilitation of degraded land. As shade loving plant. Cardamom is planted under the trees and contributes to climate change.

1.1.2 Opportunities and Constraints of Large Cardamom Farming

In production of large cardamom, there are many opportunities and constraints. They are as following

- Inadequate knowledge and sincere adoption of best practices of cultivation system, quality improvement and post harvest treatment
- Inadequate knowledge on plant protect and agronomy.
- Lack of appropriate technology and storage facility has resulted in low quality products.
- Farmers lack grading and packaging knowledge for standardization of the products.
- Lack of quality dryers meeting specification to international demand and standards has hindered the price of Nepalese cardamom to the competition with Bhutanese and Indian.

- There are lacks of financial institution floating appropriate credit facilities to the traders.
- Difficulty of small farmers to access credit and finances from format financing institutions.
- Limited information of international market price and process are fluctuating and declining manner.
- Regional traders and explorer dictate and influence prices.
- Lack of access to market and other information is felt at all level i.e. from traders and down to the farmers' level.
- Lack of capability of existing co–operative on managing cardamom business.
- Lack of collection centers at famer's level.
- Lack of capability of support organization to provide timely and quality business services.
- Lack of storage facility at farmer's and trader's level has decreased the bargaining power of the respective actors.
- Lack of conductive policy environment for export trading.

1.1.3 Issues and Challenge

According to the farmers about 30% of the cardamom is affected by pests and diseases locally referred as 'Chhirk' and 'Phurke'. And spots on the seed pods and rotting of the roots. But the government agencies have not paid attention to these problems. Dependency in India Market and minimum local market based marketing has become another challenging issue. Investors and banks are not available at local level for bigger size alone. (Source: Nepalese Large Cardamom Production and market promotion, February 3, 2014 Katmandu)

1.1.4 Threat to Farmer

The farmers have been worried after production of cardamom fell by 25 percent in Taplejung. The district that produces it in the largest quantity in Nepal even this year.

Crop conservation officer at the district agriculture development office, Taplejung Madav Bhatta said production has been falling due to different kinds of diseases like spots on the seed pods and rotting of the roots. The production has been falling after

the fiscal year 2063/64. Panchthar District Development Officer at the office in Panchthar Rohini Raj Ghimire said that the disease has affected the crop in all areas. Crop conservation officer at the office in Ilam buddhi Ram Bhattarai also said that

Over 90% of the cardamom crop in the district has been damaged. The farmers are falling uncertainty due to the ill health of the crop that has been feeding them. Farmer Birendra Kafle of Panchthar said Cardamom that grows at an altitude of 800-2, 200 meters above the sea level and a temperature of 8-20 degree Celsius, has not been received by any treatment after beings afflicted by the disease. The farmers in Ilam lost Rs. 445.40 million this year due to the discuses that reduced production by 25 4000 kilograms. The current market price is Rs 1,750 per kilogram.

Cardamom is at the forefront of the 12 item identified by the government for comparative be define through export. It is also the first agricultural product among seven potential products and has been getting a good market in recent years. The demand of this spice crop used as spice, in medicines, beverages and for other purposes has been rising in India and western countries. There are a significant number of farmers who has procured hand at a major commercial centre, constructed houses and operated industries and businesses by cultivating the crop. Prem Bhandari of eastern Naya Bazar said that the crop can be totally eradicated in a few years in the diseases is not controlled.

The farmer in the region has been cultivating the cash crop for around 55 years. It was first cultivated in the villages bordering India like Sriantu, Samalbung, Pashupatinagar, Gorkhe, Jogmai and other. Agricultural expert Yegendra Man Shrestha said that the Marketization of 140 year old Nepali crop must be done properly. Damber Sai, Ramsai, Chibesi, Golsai, Saune and other Varieties of cardamom, that grown in shady land receiving round 1,500-5000 millimeters of rainfall per annual, in found in Nepal. Senior Agriculture Development officer at the office in Panchtar Ghimire said production of said/saplings have been prioritized as the disease has afflicted all those varieties. Crop Conservation Officer at the office in Ilam Bhattari said that producing saplings through seeds may also reduce the risk of transfer of disease.

Cardamom is known as golden crop as it does not after other plants and trees, can grow with simple crave with not much fertilizers, and can be sold easily irrespective of the fluctuation in price. It still fetches Rs. 1750per kilogram but the farmer have been

defaulted in lack of control of the farmers have been deflated in lack of control of the disease. (Source: karobar National Economic Dailly, Monday 3rd February, 2014)

1.2 Statement of the Problem

The cardamom is one of the major exportable cash crops which have played a vital role for rural economic growth and prosperity of the country because cardamom has become one of the major cash crops of the foreign currency earning. The cultivation of cardamom is increasing year by years to a considerable extent in eastern hills of Nepal. But its cultivation is still limited to very few hilly districts of eastern Nepal. Nepal is the second major producer of large cardamom after India. With the increase in demand and high price of the cardamom, farmers have started more plantation of cardamom from few years with many problem of cardamom cultivation.

India is the major export market for Nepalese cardamom. More than 90 percent of the Nepalese cardamom is exported to India and rest is used within the country. It is reported that most of the cardamom exported to India is re-exported after certain value addition in India to Pakistan and Gulf countries. Drying, Cleaning, Sorting, Quality grading and standard packaging is some of the major value addition activities undertaken in India. In Nepal, however, there has been neither enterprising institution to maintain cardamom cultivation like in India nor process for value addition. Cardamom is marketed by individual farmers. No direct overseas export is tried in Nepal. Only few merchants collect the Alainchi to augment the volume of business by employing agents on commission basis.

Foreign currency can play an important role for economic growth and development of country. The government of Nepal has stressed on the privatization liberal market economy for the progress of trade, industries and commerce. This privatization and liberalized economic policy may be able to promote cardamom export. Increased export of cardamom will help to balance the trade deficit up to certain extant if proper attention is paid to it. It is necessary to increase the production of cardamom to increase its export. Farmers are going to increase production of cardamom more profitable than other crops or it is a supplementary product from wasteland. More farmers can be encouraged to cultivate the cardamom if we know about the economic status of the cardamom cultivator.

In Nepal, Large cardamom I recognized as a major exportable item to earn foreign currency. By realizing in the eastern hilly region, first, cardamom development project was established in Fikal of Ilam district to extend technical knowledge of the cardamom cultivation other various institutions like Agriculture Development Bank, Commercial banks, Co-operatives, Agriculture Sahakari etc are helping farmers to take benefit by providing loan for the cultivation of the cardamom it is also hoped that large cardamom, as an exportable item, will provide a sound base for the growth of our agriculture sector.

We know that large cardamom is an important cash crop for the farmers in eastern hill of Nepal. The export of cardamom has increased by 17 percent in the last fiscal years 2069/70 it was Rs. 3.85 billion was exported in the 2069/70, according to the Trade and Export Promotion Center. It was Rs 3.49 billion in 2068/69, A total of 5,103 tons of cardamom was exported in the last fiscal years. Nepal produces around 8,000 tons of cardamom know as a golden crop as it does not after other plants and trees, can grow with simple care with not much fertilizers, and can be sold easily irrespective of the fluctuation in price. It still fetches Rs 1,750 per kilogram but farmers have been deflated in lack of control of the disease. And we do not know how important it is in items of its cultivation as well as its role in the cash income to the farmers. What percentage of total land owned and operated by the farmers is occupied by the large cardamom plantation? How to controlled disease of cardamom? How much cash income in received by the farmers from cardamom? What is the share of large cardamom income in the total cash income? What are the main problems in increasing large cardamom plantation? Whose help in the adoption of suitable strategies to words large cardamom cultivation. This study seeks to find the answers to above questions through the data collected from Surumkhim Village Development Committee words No. 3, 4,5 and 6 of Taplejung district in Nepal.

There are many problems of cardamom cultivation in Nepal. Some of the major problem are

a. Compulsion to expand cereal product to the place which is suitable for cardamom cultivation.

b. Lack of the protection of forest resources.

c. Lack of the proper management of the irrigation.

d. Lack of control of the disease.

e. Lack of knowledge for share of cardamom income in the total cash income.

f. Lack of technical knowledge.

g. lack of transportation in rural area etc.

These are some of the vital issues we should adopt suitable strategies for the production of large cardamom.

1.3 Objectives of the Study

Every subject have own objet. Every work is not meaningful without object. So it is important stag of success to find out the economic role made by the large cardamom to the farmers in eastern Nepal. The objectives of the study are as follows.

i. To study the role of large Cardamom farming for rural economic development in the study area.
ii. To study of the status of large Cardamom production in study area.
iii. To identify the problem associated with production of large cardamom in study area.

1.4 Importance of the Study

Nepal is basically a hilly agriculture country. The county's economy depends on the agriculture. Cardamom cultivation is considered as an extra source of income to the farmers because the land utilized for its cultivation is marginal and not suitable for any food crops. Cardamom starts fruits bearing after 3.4 years of plantation. During the period the farmers need not to do anything except to manage good drainage and planting shed trees. Large cardamom cultivation not only needs low village but also coverage of pollution with trees. This practice helps in the protection of soil from soil erosion. Hilly country with highly readable soil needs protection measure for soil erosion. At present time, cardamom cultivation is done in eight districts of Nepal, Taplejung, Panchthar, Ilam, Terhathum, Sankhuwasabha, Khotang, Bhojpur, Dhankuta etc.

Nepal is a hilly country, having only a small portion of the plains the Terai, so to improve the economy of the country, it is very essential to develop the hilly regions. According to climatic conditions of the region under the study, it is suitable for large

cardamom cultivation, it is still dominated by food grain cropping pattern, which party satisfies the basic need of people and also main sources of their livelihood.

Therefore, it is necessary to know the situation of large cardamom farming for the performance of the study area as well as hilly region of Nepal. The main importance of this study are as follows:

i. This study will be helpful for improvement and betterment of the existing economic condition of large cardamom growers who are facing different types of problem.
ii. This Study will be helpful to improve the cash earning of farmer who are living in the study area.
iii. This study will check the short comings of the traditional farmers.
iv. The research work will be helpful to the important plan policies for the government and will be the knowledge base for the future researchers and others.
v. The study will be helpful for protection environment.
vi. This study will be helpful to further researches.

1.5 Limitation of the Study

The following are the limitation of the study.

i. The study is limited only cardamom production of Surumkhim VDC of the only one district which may not fully represent the whole large cardamom growing areas.
ii. This study will not explain overall aspects of large cardamom but simply tries to show the existing production and marketing position concentrating on Surumkhim VDC.

1.6 Organization of the Study

This study is organized in the five chapters. The first chapters be dealt with introduction and background of the study. The second chapter tells about the review of the related literatures, the third chapter about research methodology. The four chapter analysis the collected data from the study area of Surumkhim VDC word No. 3, 4 5, 6. Different tabulation, mathematical tools and techniques is used to present or analysis the collected data. Five Chapter about summary, Conclusion recommendation of the study area.

CHAPTER–II

REVIEW OF LITERATURE

This chapter reviews literature on the production, marketing price and other factors in relation to large cardamom in Nepal. Being new and emerging cash and export crop, sufficient literature is not available about the large cardamom farming. Available literature is limited to project papers, evaluation reports, and technical studies about the cultivation and economic studies basically thesis and reports. Some general type literature also focuses on large cardamom cultivation.

2.1 Introduction to Large Cardamom

The large cardamom is one of the oldest spices known to making. It was known to Greeks and Romans and was recorded by Theophrastus, the Greek philosopher as early as 4th century B.C. In botanical classification, the large cardamom belongs to zingeberaceae family. It scientific name in Amomoum Subolatum Rox. It Nepali name is alaichi.

The large cardamom plants are grown between 500 and 1800 meters above the sea level in the slope of the hills where plenty of drainable water is available, preferable in the north facing slopes or under the trees. Large cardamom is an aromatic crop. Its sees are dark brown in color, less round in shape and 3-4 mm in diameter. The seeds give volatile oil. Large cardamom flower in March and the fruits are matured during the humid summer monsoon period of august and September. The Fruits are harvested in bunches, which contains 20-24 fruit capsules. The Large cardamom looks like black capsule, in average 2.25 cm long (minimum 2.2 cm and minimum 2.3 cm). The temperature and rainfall requirements of the plants are 10 to 25 degree and 1500 cm to 6200 cm annual rainfall.

Different species of large cardamom can be planted in different climate conditions and geographical structure. There are 7 different species of large cardamom commonly found among the farmers.

a) Ramshi
b) Golsahi

c) Dambersahi
d) Sawaney
e) Chibe
f) Jangu Golsahi
g) Varlange

Large cardamom was introduced in Ilam (Nepal) in 1865 A.D. Large cardamom, ecologically adopted to farming one sloping lands, has helped forestry system and the plants to maintain permanent green cover on forest floor since its cultivation began in Ilam district around 150 years ago. Now it has been domesticated and appreciated as low volume and high value cash crop. Cardamom farming ensures ecological stability in fragile mountain slop by requiring farmers to maintain a good forest cover of nitrogen fixing alder trees. The establishment of Cardamom development center, Pandam, Fikkal (Ilam) in 1975 Paved the way for the development efforts of the government towards this crop.

2.2 Economic Role of Large Cardamom Farming

Nepal is an agricultural country. Agriculture is main sources of income of Nepali people. Cardamom is main source of income of farmers. Now 40 districts in Nepal grow Cardamom but 97% is grown in seven hilly districts of eastern development Region estimated number of farm families invade is over 33,000 and population depended directly or indirectly on cardamom farming is estimated to be around 2, 21,000. According to the world data, total production of cardamom is 17,000 metric tons per years in the world. Out of them 7,086 metrication was production of Nepal. It is 41.68 percent of total production. Cardamom production is decrease by many problems like 'Chhirke' and 'Phurke'. But price of Cardamom is increase year by year. It still fetches Rs. 1,750 per kilograms fiscal years 2069/70. Cardamom play vital rule for local income of farmers and foreign currency earning of the country in increasing year by year. Nepali Cardamom as 2068/69 was around 8 thousand metric tons a total of 5,103 tons of Cardamom was exported in the last fiscal years. It was Rs 3.49 billion in 2068/69. Nepali production as of 2069/70 was 7 thousand metric tons out of them Taplaejung production was 4 thousand metrication.

(Sources: District Agriculture Development Office, Taplejung)

2.3 Export of Large Cardamom

Large Cardamom is an important exportable cash crop in Nepal with an annual produces around 7000 metric tons. The export of large Cardamom has increased by 17 percent in the last years in comparison to the preceding year due to expansion of its cultivation in other districts. Despite the disease in the eastern region. Cardamom worth Rs. 3.85 Billion was exported in the fiscal year 2069/70. According to the trade and export promotion Center. It was Rs. 3.49 billion in 2068/69. A total of 5,103 tons of cardamom was exported in the last fiscal year.

India is the main market for Nepali Cardamom Almost entire production is exported about 90% to India. Traders say it reaches Pakistan, Bangladesh and the Gulf states via India. The say that its price has skyrocketed due to the high demand of Nepali Cardamom in 15 countries. A fund of Rs. 13.50 Million has been allocated to install modern dryer machine to retune Cardamom through the public private partnership to promote export of the crop. The export of large cardamom in different years is given below in the table 2.3

Table.2.3 Export of Large Cardamom

Year	Quantity (MT)	Value (Rs cores)
2007-08	6889.50	103.48
2008-09	5812.30	121.60
2009-10	5263.7	131.60
2010-11	4895	191.45
2011-12	3978	302.50
2012-13	4879	679.48

Sources: Taplejung Chamber of Commerce and industry

The table 2.3 shows that the quality export of large cardamom in 2007-08 to 2008-09 is decreased by 977.2 metric tons but the value of large cardamom is increased by 18.12 cores rupees. Similarly, in the years 2009-10 and 2010-11 the export of large Cardamom is decreased by 368.7 metric tons and the value of Cardamom in increased by 59.85 cores. In the years 2011-12 and 2012-13 the export of large cardamom it increased by 901 metric tons and value of large cardamom is also increased by 37698 cores. But decreased by 2010.5 metric tons in comparison to 2007-08 and the value is increased 576 cores rupees. It shows that in the last 11/12 years, the export quantity of large cardamom has decrease but the value of large cardamom has increased. But in year 2012-13 value of large cardamom in increased. It proves that the value of large cardamom is increasing year to year.

2.4 Review of Related Literature

Agricultural Development Bank Nepal (ADBIN) 1978 limited a project to encourage the livestock and large cardamom farming in Ilam district. The additional purpose for encouraging large cardamom was to help the people to utilize uncultivated land for large cardamom farming and thereby to increase the level of income of the farmers. The project found a good prospect of large cardamom cultivation due to the availability of suitable soil and good weather conditions. the project expected that the price of large cardamom was not going to be constant. In the early harvesting period, price was generally low and it sharply increased after 4 to 5 months of harvesting.

Dewaard and Ranjeet (1975) have studied large cardamom farming to collect information on large cardamom and to advise and assist government of Nepal on the development of strategy reasonable income for the large cardamom growers. They also wanted to sketch the map for the development of large cardamom growing sector. The found that the export potential of the Nepalese large cardamom was favorable due to its increasing demand from the Middle East and other countries. They recommended giving more emphasis to improve methods of drying, proper guarding, storage and packaging in order to achieve the goal for increasing its exports.

Limbu (1996) Studied large cardamom production and marketing condition in Morang district. The purpose of the study was to explain marketing problems of the study area. He has found that the market of large Cardamom of the district is not organized. Almost all the buying and selling processes take place within the district. There are transportation problems. Human porters are the main means of transportation and it takes two days to reach the market from the production area. The exits rue of money lenders as dahadani system is the main source of financing in the farmers significantly. About one third sample households have been influenced by dahadani system. However, ADB/N and other financial institutions have started to provide land for large cardamom farming. Because of the delay in decision making of the bank administration, farmers have to wait for long time and are compelled to take loans from moneylenders at higher rate of interstate.

Mishra (1996) studied large cardamom farming technology, diseases, processing marketing system and problems. The main purpose of his study was provide knowledge about large cardamom cultivation, processing marketing as well as

economic, social and environmental importance of large cardamom species, which could grow in different altitudes. Large cardamom was affected by some diseases such as chhirke, furke, clump rot etc. Most of the farmers used local drier system. Nepales marketing system was not satisfactory. Actually, large cardamom farmers were not getting fair price. Only the trades were benefitted from it. There were many problems in large cardamom cultivation, processing and marketing.

Rai (1995) studied large cardamom cultivation in selected VDCs of Bhojpur district of Nepal. The main purpose of the study was to snow the impact of large cardamom cultivation upon the environment. His conclusions were similar to that of Subedi (1982). He found that large cardamom cultivation has made the environment free from flood, soil erosion, landslide, deforestation etc. These impacts are completely controlled by its cultivation.

Rijk and Donovan (1981) studied drying practices of large cardamom in Nepal. The main purpose of the study was to describe drying techniques. They found that very little information regarding proper drying techniques were known to large cardamom cultivations in Nepal. It is exported that dying under the relatively low temperature (up t 65^{0c}) yield, a product of better color and with lower incidence of fruit splitting and scorching.

Trade Promotion Center (1975) published a commodity profit on the occasion of "export promotion Workshop" organized in collaboration with international trade center, Geneva. The profile contains various problems and draw backs for the promotion of large cardamom cultivation and its production could not increase speedily in spite of growing demand of the world market. Irrigation Facilities and decease free plants were critically required to increase the large cardamom production. Packaging and storage related problem needed attention to increase export. Mid-term loan provide by the bank to the growers were supposed to promote production by improving financing system.

Sangraula (1989) Studied farming technology, extension of farming and marketing system of large cardamom in Nepal. He examined large cardamom farming and found large cardamom as an important cash crop in the study area. Large cardamom cultivation was started from Ilam district and extended to other districts respectively in Nepal. In the beginning, large cardamom was used by the people only as spices. Later on it established itself as an exportable cash crop and its farming has become

popular among the farmers. He found that large cardamom farmers were unable to get fair price because of the land lacked situation of the country.

Sharma and Purohit (1995) studied the dry matter production and nutrient cycling in agro-forestry system of large cardamom grown under utis (Annuls Nepalese's) and natural forest. Their main objectives are that biomass, net productivity and agronomic yield in cardamom based agro-forestry system increase under the influence of annuls. They have found that farmers themselves care the capsules of cardamom after the harvest and this process requires 70-80 kg of fuel -wood for 100 kg of cardamom curing. The higher rate of tree biomass accumulation and net primary of vileness can meet fuel-wood demand from the agro forestry system under the influence of annuls was more production has faster rates of nutrient cycling.

Subedi (1982) studied large cardamom farming in some villages of Ilam district. The Main purpose of this study was to provide knowledge about large cardamom cultivating treed and marketing system. He has found that most of the areas previously economically unproductive were planted with large cardamom. As it become one of the important means of cause earning, even cultivated land with low economic return gradually turned over to large cardamom farming is extensive and its productivity and returns are valuable. The production depends on the natural factors such as quality of land, water availability, tree cover etc. Fluctuations in production have been common even through its level of production has been increasing. He found that market price of large cardamom has been increasing with significant fluctuation. The increase and decrease in market price was the result of advisability of only few purifies exporting large cardamom overseas and their monopoly over price. The establishment of well organized market to provide real return to the farmers and to promote the quality and quantity of large cardamom by giving incentive to the farmers seemed to be immediate necessity.

Zomar (1992) studies a model agro-forestry system of the eastern middle hill of Nepal. According to zomar, the large Cardamom farming and forest were related to each other. The purpose of this study was to explain about problems of farmers and land. He has found some problems of farmers and land. Low cash income or inadequate supplies of food, fodder and firewood are amongst the most of common challenges faced by farmers especially in Nepal and other densely populated highland regions. Other constraints include shortage of shooter, water and raw materials for cottage industry and equity or saving. On farms trees provide firewood, provide

livestock fodder and other economic benefits. Standing tree biomass functions as equity which can be the source of regular income. It is found that the problems of land where soil erosion, fertility decline and pasture and adjacent natural forest degradation are negative effects resulting from land use system that inadequately meet basis criteria for susvainability. Large cardamom cultivation needs the production of existing trees and plantotins of new trees for slade increasing the suppy of biomaro for use by the farmers.

The studies available literature indicates that knowledge related to large Cardamom cultivation, processing and marketing in still scanty in Nepal. Study that the market of large cardamom of the district in not organized almost all the buy and selling processes take within the district. Study undertaken by organized sector completing all aspect has not been undertaken yet. It may be due to large Cardamom being competitively a new crop as well as a crop cultivated only in few districts of Nepal.

The above studies provide knowledge about large Cardamom cultivation, processing, marketing, as well economic, and social as environmental importance of large Cardamom. It has made the environment free from flood, soil erosion, land slide, deforestation etc.

The study that proper irrigation facilities, diseases, packaging, storage are main problem of large Cardamom farming it is exportable cash crops in the few district of Nepal. Market price of large Cardamom has been increasing with signification fluctuation. The increase and decrease in market price is the result of availability of only few parties exporting large Cardamom overseas and their monopoly over price. Large Cardamom could not increase speedily in spite growing demand of the world. Its demand and price is increasing year to year, but production of large Cardamom is decreases by many problem of large Cardamom such as 'Chirke ' and 'Phurke' (diseases of Cardamom). National Economy may go up it can control the disease of large Cardamom and further studies by the organize sector will be undertaken to fulfill the gap in the knowledge.

CHAPTER–III

METHODOLOGY

This section of the study describes the study area, different procedures used to complete this study. An Objective of this study is to analyze the role of large cardamom farming for rural economic development of farmers of surumkhim VDC of Taplejung district who produce cardamom.

3.1 Research Design

This study is based on descriptive as well as exploration research designs. Descriptive information about the research area exploration research design is used for collection information about respondents view and ideas about the farmers and their problems.

3.2 Sampling Procedure and Sample size

Sampling is taken as portion of universe of as universe or as representative of that farmers who cultivate large cardamom in the study area were considered as the population of the study. There are 339 household in Taplejung Surumkhim VDC. Out of them 17.69% household is selected as a sample size by applying the sample random sampling method.

3.3 Nature and Source of Data Collection

a. Primary Data Collection

Primary data is collected with the help of questionnaire. It was collected by administrating well structured, per-tested questionnaires to the head sample household. Interviewing was done by the research herself. The questionnaires contained questions on cultivation, production, price marketing, disease and problems faced by the farmers while producing large cardamom. And other questions asked to farmers inched the area and production of other cereal crops, the income from carious agricultural sources and the expectations of the farmers from government agencies for large cardamom cultivation. Due the written records the responses made by the farmers were based on their memory recollection.

b. Secondary Data Collection

Secondary data is collected with help of important relevant materials books, current available literature and reports of various studies which highlight of large cardamom farming in Nepal include.

i. Journal published books
ii. Unpublished reports
iii. Research Articles
iv. Village Development commute records
v. District Agricultural Development office, Taplejung
vi. Central Bureau of Statistics (CBS)
vii. District forest office, Taplejung
viii. District Education office Taplejung library

3.4 Selection of Key Information

Large cardamom farming has a good role of rural economic development of the people at Ambote, Hiringtar, Jaishidata, Malbuase and Buramkhim area in Surumkhim VDC ward no 2, 3, 4, 5 and 6. The cardamom cultivators who have one ropani or more land were selected to include in the population, 339 households in the VDC were estimated to have more than one ropani of land. All the names of the household who had less than one ropani of land were removed from consolation with VDC chairman and ward chairman.

3.5 Data Collection Technique

3.5.1 Household Questionnaire

It is about their economic, social educational situation and problem occurred in large cardamom farming and adopted for it having direct interview with the farmers who are involved in sample selection.

3.5.2 Observation

Direct observation is used to collect relevant information regarding role of large cardamom farming for rural economic development in the study area.

3.5.3 Interview Schedule

Written questionnaires were used for the interview of respondents in the study area.

3.6 Reliability and Validity of Data

The more suitable and reliable research work is characterized by reliability and validity of the collection data. To test the reliability of data the test and rest method is used while content validity method is used to test its validity. In order to know its authenticity and to make research more reliable and logical.

3.7 Tools of Data Analysis

The data is collected through various sources using various data collection techniques tools. Data analysis manly rely on field survey analysis for data information

Various Statistical tools were used to analyze the data obtained. The analysis is mainly focused on the production, income and costs of large cardamom were collected for two years and cost and return form alternative crops (Paddy, maize, millet, Potato) were collected for two years. The data is scientifically process, tables and charts, is made.

CHAPTER– IV

PRESENTATION AND ANALYSIS OF DATA

4.1 Description of Taplejung District

The study was conducted in Surumkhim VDC ward NO. 3, 4, 5 and 6 a Taplejung district. This district is surrounded by Tibet in the north, Sikkim of India in the east, Sankhuwasabha and Terhathum district in the west and Panchthar district in the South (This district is located in Northeastern most part of the country.)

Taplejung district is located at $80^0$32" to $88^0$15" east longitude and $10^0$15" to $26^0$56" north latitude. The altitude of this district varies from 777 meters to 8598 meters above the sea level. The highest Peak of this district is Kanchanganga, which is the 3rd highest peak in the world. The district is also famous because of the Tiptal Falls and Phungphung Falls which are the eyes of the tourist. The total area of Taplejung district is 3, 63,700 hectares. Out of the total are 27,551 hectares is cultivated land 1,55,019 hectares of land is covered with forest. 35,384 hectares is Pasture land and 1,52,836 hectares of land is in miscellaneous use.

According to the national census 2011 the total population of this district is 12,7461. The distribution of population is given below in the table: 4.1

Table 4.1 Description of Population of Taplejung District

Description	Population	Percentage
Male	60,552	47.51 %
Female	66,909	52.49 %
Total	12,7461	100 %

Source: National Census 2011/12

Some features of population composition of this district are as follows:

Total Population	12,7461
Male	60,552
Female	66,909
Population growth rate	0.48
Total number of families	26,509
Population density	35 per.sqk.m
Average Population per house	4.63

Sources: National Census 2011/12

4.1.1 Main Places of Taplejung District

a. Pathivara:-

Pathivara Temple is a religious place situated in the north east of the district. It lies between Lingkhim VDC and Phawa khola VDC. It is situated at the summit of mountain at the height of 3794 meters from the sea level. The summit looks like a 'Pathi', traditional measuring pot, which is filled with grain. So it is called Pathivara. It is about 20 km north of the district headquarters. The temple has a great religious value and pilgrims from different parts of Nepal and India visit the temple. The top of hill is covered with snow during the winter. It is also an attraction of the nature lovers because the scenery while the sun shines is charming mountain Kanchanjunga and Kumbhakarna can be viewed as if as for as a stone's throw. The access to Pathivara is easy. One can have a trek from Taplejung Bazar for about 6 hours or land at Suketar airport and go on foot for about 5 hours. A nice foot trail is built that leads to Pathivara temple. It is believed that one's desired are fulfilled after the pilgrimage to Pathivara.

b. Olangchung Gola

Olangchung Gola is one of the main places of Northern Nepal. It is at the height of 3240 meters from the sea level. It is a small high land market on the bank of Tomor River. It is about 40 kilometers from the district headquarters of Taplejung. Nearly 60 families, mainly Sherpas live in this area. Most of the families raise sheep and yaks. They produce carpets, chhurpi (a product of dried whey) etc. The village lies on the route that goes cross country to Tibet of china. It is about two day's trek from Olangchung to reach Rio a small market in Chinese territory.

c. Timbung Pokhari

The holy religious place Timbung Pokhari is situated in the far-eastern Part of Taplejung in Nepla which occupies Surumkhim and kali Khola VDC .Especially, on the occasion of Nagpanchami or according to the weather. Srawan month is suitable for the pilgrimage and they gathered at that time. It is named "Timbung pokhari" in Limbu language because of the sound. According to the local folk statement or voice,

there will be cloud, sound of gun comes it people with bad soul goes there. National or kirati priest Falgunanda Lingden's holy place is also Timbung Pokhari, it is important. Therefore, it is an important holy religions place of Hindu religion and kirat religions followers. Timbung Pokhari is an important attractive center point for tourists We can see mountains from Tawanagi peak in the east direction and Gantok, Siliguri, Kalingpung cities of India and same parts of terai in Nepal in the south west diredion.

d. Taplejung Bazar

Taplejung is the district headquarters of Tap is the district headquarters of Taplejung district. It is also a commercial centre of the area every Saturday and Tuesday. There is a haatbazaar and people from the distant villages of the districts come to Taplejung (Phungling) for shopping. Local product like vegetables, fruits, potatoes etc are sold and people purchase clothes, kerosene, salt and other good of daily use.

4.1.2 Physical Facilities

a. Transportation

Mechi highway form charali of Jhapa reaches the district headquarters via Ilam. The road is black topped from Jhapa to sukutar of Taplejung district. The transportation is reliable and easy. It is about hour's drive from Britamode. Birtamode is commercial centre of eastern Nepal. To reach Taplejung

b. Communication

The district is facilitated with different means of communication. In this regard, the availability of telephone service and postal service are remarkable. Nepal Telecom has provided GSM, PSTN and CDMA service to the customers. These services cover the total area of the district. NCEL of spice Nepal has also extended its mobile services in the district. Almost in every VDC, there are post offices and people can easily have an access to the postal service.

4.2 Educational Status of Taplejung District

The education status of Tapeljung districts seems to be progressive. But due to the topological features, the distance among school is very vast. The literacy rate of the district is 52.8%. It is 63% for males and 42.6% for females. The statements of the educational institutions of this district is given in the table 4.2

Table 4.2 The Statements of the Educational Institutions

	Number	Teachers			Student		
		Fe. Tea	Ma. Tea	Total	Boys	Girls	Total
Campus	2						
Higher Secondary School	27				1522	1204	2726
Secondary School	60			118	3791	3516	7307
Lower Secondary School	61			201	7989	1470	15459
Primary School	212			936	27729	26179	35917
Pri-Primary School	-						
Child Development Center	228		228	228	3118	2899	6017
Total	596		228	1484	44149	41268	85126

Source: District Education Office Tap. 2068/69

Female literacy rate: 42.6%

Male literacy rate: 63%

Total literacy rate: 52.8%

4.3 Climatic Condition of Taplejung District

The climate varies from sub-tropical to temperate. The vegetation of the district is diverse and varies along with the climate. The average annual rainfall and temperature of the district headquarters is given in the table. 4.3

Table: 4.3 Average Monthly Rainfall and Remperature of Taplejung 2011/12

Month	Maximum temperature (OC)	Minimum Temperature (OC)	Rainfall (M.M)
January (012)	13.3^0	03.2^0	11.6
February (012)	17.6^0	06.2^0	17.4
March (o12)	20.7^0	09.1^0	7.6
April	23.1^0	12.3^0	195.0
May	25.0^0	14.7^0	275.5
June	25.7^0	18.2^0	358.2
July	28.8^0	18.3^0	349.8
August	25.6^0	17.8^0	344.8
September	24.8^0	17.2^0	229.9
October	23.8^0	13.1^0	36.3
November	18.3^0	08.9^0	29.43
December	16.6^0	6.0^0	0.0

Source: District Climate Department, Taplejung, 2011/12

The table 4.3 shows that most of the rainfall occurs in monsoon season in the month of June, July and August. The temperature is lower in the month of December and January. Otherwise the temperature distribution is mild. This rainfall and temperature is suitable for the cultivation so large cardamom.

4.4 Production of Large Cardamom in Taplejung

The level of production of large cardamom by the farmer is given in man, a local unit of measurement equaling 40 kilograms for practical purpose. Raw cardamom when cured and packed for marketing is weighted in man and sold. This farmer knows their production.

Tread analysis refers to increase decrease in the area or the income of the farmer. Area income or decrease depends on several factors related to cultivation of the crop including weather, diseases and availability of inputs as we as the price of large cardamom it is not the scope of the study to compared in two different years to indicate the trend. The contribution made by large cardamom in total income can also vary in different years. The variation may occur because of increase or decrease of area or the price of the large cardamom received by the farmer. The change in the price is not scope of the study. Only changes in total income in two different years will be compared. The total production of large cardamom in different VDC of Taplejung district is given below in the table.4.4

Table 4.4 Production of Large Cardamoms in Taplejung District in 2068/069

S.N.	VDC	Area of production (Hec)	Production (MT)
1	Sadewa	86	44.55
2	Kalikhola	80	41.44
3	surumkhim	415	214.97
4	Mehele	196	101.43
5	Tellok	260	134.68
6	Sikaicha	248	128.46
7	Ambegudin	80	41.44
8	Limbudin	128	66.30
9	Angkhop	30	15.54
10	Sablukhu	65	33.67
11	Sinam	17	8.80
12	Thumbedin	16	8.29
13	Dumbrise	10	5.18
14	Chaksibote	7	3.63
15	Thechanmbu	22	11.39
16	Nangkholyang	40	20.72
17	Tiringe	39	20.20
18	Phawakhola	33	17.08
19	Phurumba	40	20.72
20	Limgkhim	53	27.45
21	Tapethok	30	15.54

22	Lelep	40	20.70
23	Ikhabu	90	46.58
24	Khejenim	213	110.25
25	Khokling	11	5.69
26	Libang	85	44.03
27	Lingtep	25	12.95
28	Thukimba	02	32.12
29	Sanwa	98	50.76
30	Papung	25	12.95
31	Nalbu	56	7.77
32	Thinglabu	25	1.11
33	Santhakru	15	31.02
34	Khamlung	6	10.36
35	Dhunge Sanghu	60	33.26
36	Change	20	27.45
37	Hanpang	70	15.02
38	Phulbari	53	78
39	Niguradin	29	15.02
40	Phakumba	152	78.74
41	Sanghu	85	44.03
42	Khewang	208	107.74
43	Yamphudin	88	45.58
44	Mamankhe	194	100.49
45	Pedang	42	21.76
46	Phungling	80	41.44
47	Hangdewa	53	27.45
48	Dokhu	30	15.45
49	Sawadom	90	46.62
50	Olangchung Gola	0	0.00

Source: District Agriculture Office, Taplejung, Annual Agricultural Report, 2068/69

The table 4.4 shows that the total area covered by large cardamom is 3900 hectares. The total production of large cardamom is 1,727 metric tons which shows the productivity of 0.59. Large cardamom is cultivated almost in the VDCs of this district

except Olangchang Gola. The highest production is in Khamlung. The greatest cultivation area is in Surumkhim and the smallest cultivation area is khamlung. The main large cardamom producing VDCs are Surumkhim, Khewang, Sikaicha, Mamangkhe, Mechele, Tellok, Phakumba, Limbudin and khejenim.

4.5 Area and Production of Large Cardamom Cultivation in Taplejung.

The area of land production of large cardamom in five different years is given in the table. 4.5

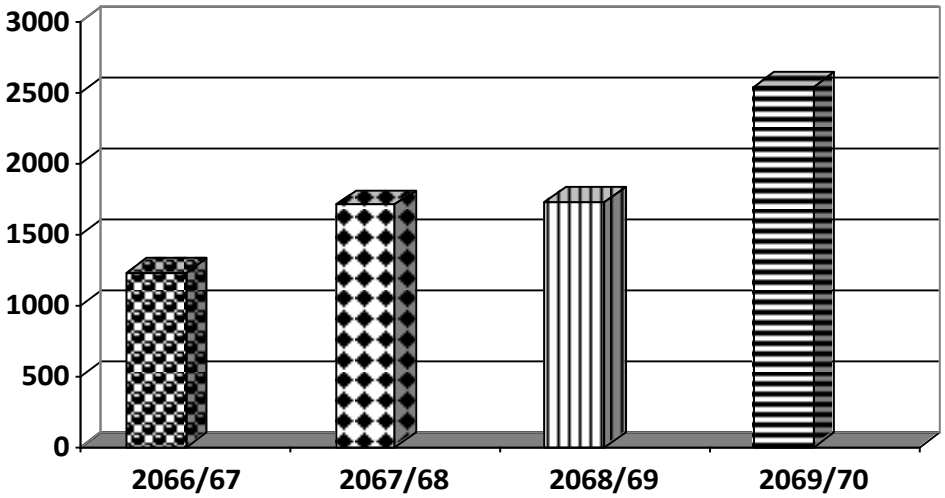
Table 4.5 Area of Land and Cardamom Production

Year	2065/66	2066/67	2067/68	2068/69	2069/70
Area of land (He)	3900	3800	3800	3900	3900
Production (MT)	1316	1230	1710	1727	2535
Productivity	0.34	0.32	048	0.59	0.65

Source: District Agriculture Office, Taplejung

It can be presented in simple bar diagram.

Figure 4.5 Cardamom Production in Taplejung District



The table and figure 4.5, show that the production of large cardamom has in increases in the 2069/70 form year 2068/69.

4.6 Surumkhim VDC

Surumkhim is a himalyan VDC of Taplejung district in the Mechi zone of north estern Nepal Geographical coordinates of Surumkhim VDC is 27.39^0 north 98.97^0 east areas. Code is 024. This village Development Committee occupies 85 Square km. Area of total district area.

At the time of the 2011 Nepal census it had populate of 1,754 foks stying 339 individual households where 851 of total district population are male and 903 are female. Population Density of Surumkhim VDC is 21per square Kilometers.

Surumkhim VDC is situated in Eastern Mountain Ecological sub zone. As it's in Mountain Ecological zone it has low temperature. Mainly people are farmer so the income source of Surumkhim VDC is agriculture.

Among the total population of Surumkhim VDC 732 people are able to read and write whereas 155 peoples can read only and remaining 657 peoples can't read and write at all. Hence among total literacy of the VDC 451 male and 281 female are able to read and write.

4.7 Socio-economic Setting of the Study Area

Total number of household and total population in surumkhim VDC is given in the table. 4.7

Table 4.7 Household and Population of Surumkhim VDC, 2011

Number of household	Population		
	Total	Male	Female
339	1,754	851	903

Source: National Population Census, 2011

The table 4.7, shows that the total population of 1,754 is distributed in 339 households in Surumkhim VDC. About 48.51 percent is male and 51.48 percent of the family members are female.

4.7.1 Distribution of Population in Study Area.

Population is the most important factor in the demography. The distribution of population it studies area is divide into eight parts by age is given in the table. 4.7.1

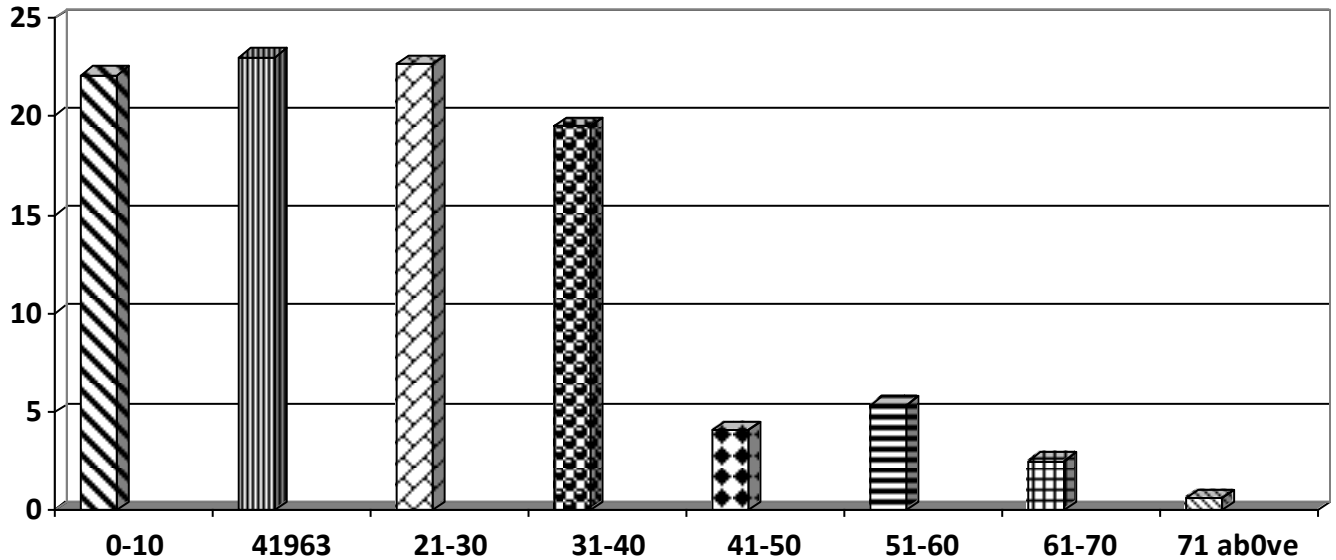
Table 4.7.1 Distribution of Population by Age in Study Area.

s. n.	Age group	Female			Male			Total	%
		Married	Unmarried	Total %	Married	Unmarried	Total	%	
1	0-10		25	25		45	45	70	22.01
2	11-20	4	35	39	1	34	35	74	23.27
3	21-30	13	25	38	19	7	34	72	22.64
4	31-40	25	3	28	27	–	34	62	19.49
5	41-50	6	–	6	7	–	13	13	4.08
6	51-60	9	–	9	8	–	8	17	5.34
7	61-70	1	–	1	7	–	7	8	2.51
8	71 above	–	–	–	2	–	2	2	0.62
Total		58	88	146	71	101	172	318	100

Source: Field Survey 2013

It can presented in simple bar diagram.

Figure 4.7.1 Distribution of Population by Age in Study Area.



According to the table and figure 4.7.1, show 22.01percent is under the 10 years children's, 23.27% is 11-20 years, 22.64% is 21-30 years, 19.49% is 31-40 years, 4.08% is 41-50 years, 5.35% is 51-60 years, 2.51% is 61-70 years and 0.62% is 71-above years is found. Similarly 45.91% is female and 54.08% is male populations in study area.

4.7.2 Ethnic Composition

Nepal is a multi–ethnic, multi- Language Nepal multi-Cultural country own language cultural country. Each caste and ethnic group has their own language cultural tradition and identity. Different ethnic group of people live in this VDC whose distribution of Sample area is given in the table .4.7.2

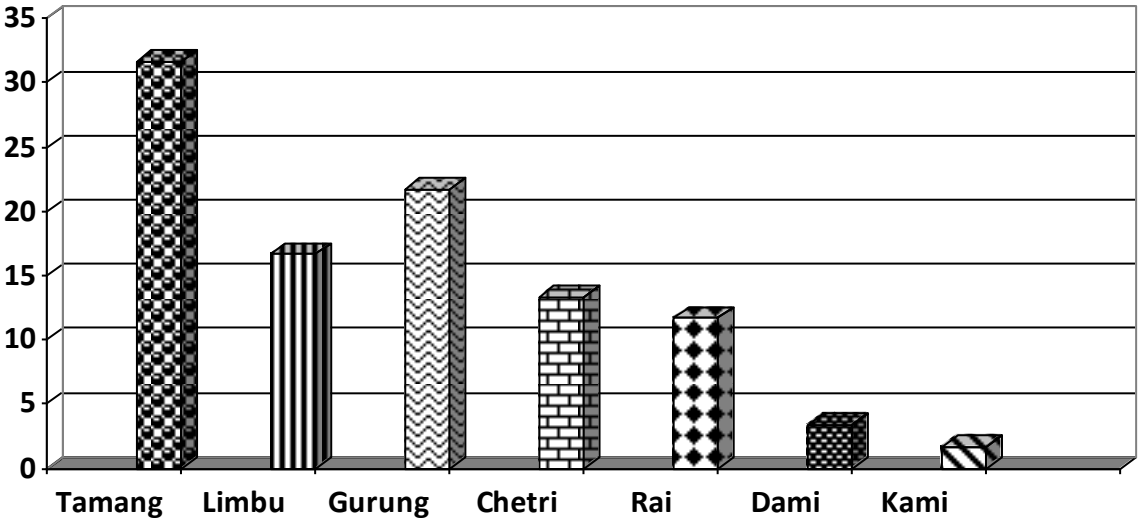
Table 4.7.2 Ethnic Composition of the Sample Household in Surumkhim VDC Wards No. 3, 4, 5 and 6

Ethnic Group	Number of responding	Percentage
Gurung	13	21.66
Tamang	19	31.66
Chetri	8	13.33
Rai	7	11.66
Limbu	10	16.66
Dami	2	3.33
Kami	1	1.66
Total	60	1.66

Source: Field Survey, 2013

It can presented in simple bar diagram.

Figure 4.7.2 Ethnic Composition of Household Distribution



The table and figure 4.7.2, show that Tamang and Gurung are the dominat castes in Sample area of Surumkhim VDC ward no 3, 4, 5 and 6 it is following by limbu 16.66%, Chetri 13.33% Rai 11.66%, Damai 3.33% and Kami 1.66%

4.7.3 Religion

Nepal is multi- ethnic, multi- language, multi- religion, multi- cultural country. Each people has their own religion and cultural tradition, it is the fundamental right of human being. Our country is a secular, there is no interfere each other we can follow any religion. During the field survey, the religion status of study area is given in the table. 4.7.3

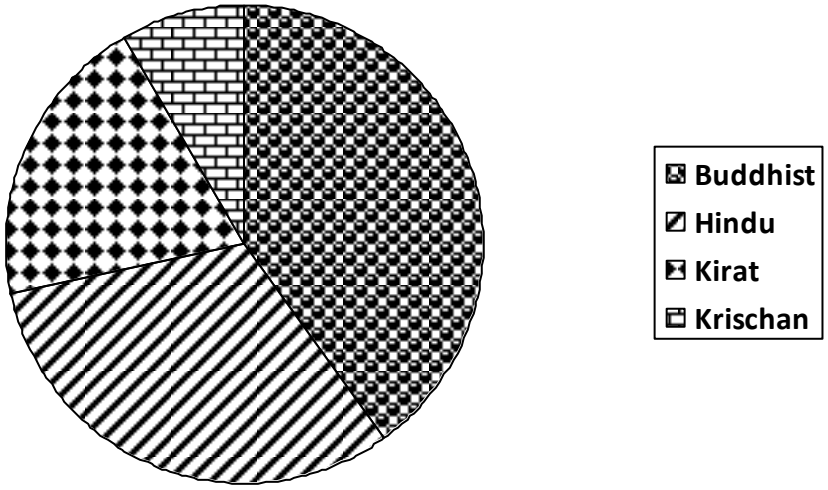
Table 4.7.3 Religion Condition of Study Area

Religion	No of HH	Percent
Buddhist	24	40
Hindu	19	31.66
Kirat	12	20
Krischan	5	8.33
Total	60	100

Source: Field Survey 2013

It can presented by pie chart.

Figure 4.7.3 Religion Condition of Study Area



According to the table and figure4.7.3 show that Buddhist is practiced in majority in the study area. Out of 60 households 40% Buddhsist, 31.66% Hindu, 20% Kirat and 8.33% Krischan.

4.7.4 Educational Status

Education is the light of our life. It is fundamental for the development of society and nation-It is the key indicator for reforming society and upgrading its economic and

social status, It plays the vital role in agriculture sectors. In Surumkhim VDC, there are government schools. One secondary three primary Schools and two child education centre are present in the study area. The composition of the educational status of the study area is given in the table. 4.7.4

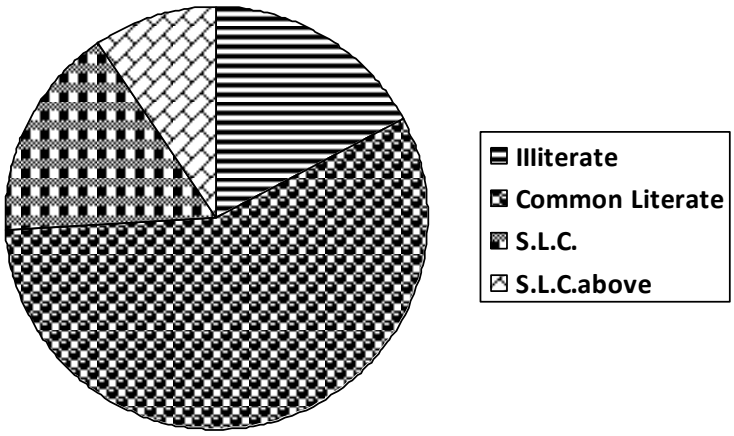
Table 4.7.4 Educational Status of the Sample Household Heads

Educational Level	Number	Percentage
Illiterate	55	17.29
Common Literate	181	56.92
S.L.C	52	16.35
S.L.C above	30	9.43
Total	318	100

Source: Field Survey, 2013

It can be presented in pie chart

Figure: 4.7.4 Educational Status of the Sample Household Heads



According to the table and figure 4.7.4, at about 17.29 percent of the sample household family members are Illiterate, 56.92 percent of sample household members are family are common literate. And 16.35 percent family members are passed S.L.C similarly 9.43 percent of sample households of the family are S.L.C. above

4.7.5 Occupational Structure

Agriculture is the dominant occupation in this area; Agriculture is supplemented by other occupations such as government service, non government service and business. The occupations of the sample households are given in the table. 4.7.5

Table 4.7.5 Occupational Structure of the Sample Households

Households	Number	Percentage
Agriculture	60	100
Agriculture aided by government services	18	30
Agriculture aided by NGO service	19	15
Agriculture aided by business	13	21.66
Others	6	10

Source: Field Survey, 2013

According to the table 4.7.5, about 100 percent households are engaged in agriculture. These households produce different products such as paddy, maize, millet, large cardamom and vegetables. At about 27 percent of sample households some members of family are engaged in government and non-government services and supplement their family income by salary services. About 21.66 percent have engaged in some short of business to supplement their family income. And same household family members engaged other occupation to supplement their family more.

4.8 Distribution of Households by Ward

The sample of households it taken randomly. The table below shows the number of households by word No. 3,4,5 and 6. The present study covers 60 households out of 339 households growing cardamom in the VDC. It is 17.69 percent of the total households. The distribution of population is given in the table. 4.8

Table 4.8 Distribution of Sample of Households by Ward

Ward no	No. of cardamom Farmers households	percentage of sample
3	20	33.33
4	22	36.67
5	10	16.67
6	8	13.33
Total	60	100

Source: Field Survey 2013

According to the table 4.8, the samples are selected only from 3, 4, 5 and 6 wards. The highest number of farmers selected is 22 and it is from ward no.4 (36.67) and the lowest number of farmers selected is 8 and from ward no.6 (13.33%)

4.9 Quality and Quantity of Land Hold by Sample Farmers

To estimate the quality and quantity of land held by the sample farmers they were asked to provide the information related to quantity of land held under different categories. Types of land give the quality of land and area of land area in ropani gives the quality of land. The analysis of the data abstained are given in the table. 4.9

Table No. 4.9 Different Quality and Quantity of Land Held by Sample Farmers in Study Area

Types of land	area (Roapni)	Land (Percentage)
Low land (Khet)	325	51.10
Upland (Bari)	215	33.80
Pasture Land	60	9.43
Wet Land	36	5.66
Total	636	100

Source: Field Survey, 2013

According to the table 4.9, total land held by sample farmers was 636 if concerted into average size of holding it comes to 10.6 ropanies per simple farmer. The dominate type of land type was low land (51.10%). These types of land are used for the cultivation of paddy prime agricultural product. Upland was next to it with 33.80 percent of total area. Pasture, and wetland was about 9.43%, 5.66% of total. Large Cardamom is generally cultivated in marginal land, which includes upland pasture, wetland etc. Lowland, which it prime land is planted with Cardamom only at last.

4.10 Production of the Different Crops

The main crops of the sample farming Surumkhim are paddy, maize, millet, wheat and potato. Paddy is the main crop in low land. The production of the other crops in to different years is presented in the table. 4.10

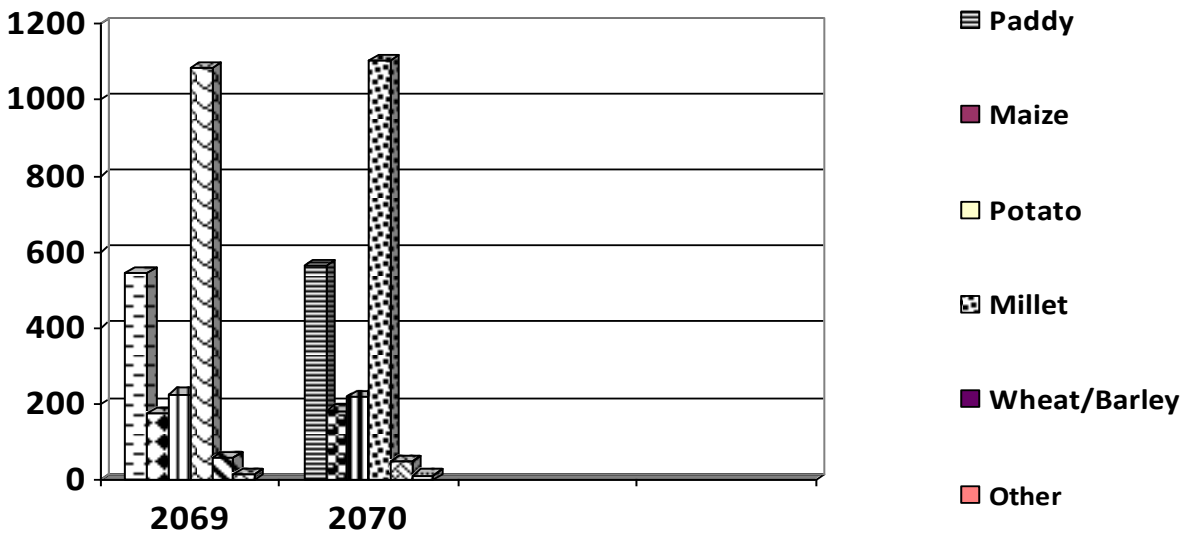
Table No. 4.10 Production of Different Crops by Sample Farmers in Different Years

Types of production	Production in man	
	2069	2070
Paddy	545	562
Maize	175	182
Potato	225	218
Millet	1085	1105
Wheat/Barley	58	47
Other	15	12
Total	2013	2126

Source: Field Survey, 2013

It can be presented in multiple bar diagram.

Figure 4.10 Production of Different Crops by Sample Farmers in Different Years



The table and figure 4.10, show that the greatest amount of production is millet and paddy and the lowest amount of production is wheat and other. The production main crop was increased in the year 2070 from the previous year. Majority of the cereal

crops produced by the sample household is consumed within the household only a very small fraction of crops is sold and converted in to cash to meet the cash requirement of the family. The majority of the farmers grow millet as their main crop. Paddy is grown in only the lands lying in low altitude and especially on the river banks. The production of cereal has not increased in the year 2070 in comparison to 2069. It might be due to deteriorating land production and traditional farming methods applied in farming.

4.11 Case Income from Different Sources

The sources of cash income of the farmers in study area are cereal crops, fruits and vegetables, livestock and cardamom. The others sources are small business, salaries and remittances etc. The large cardamom is the dominant source of the cash income in comparison of the other sources. The sources of cash income are shown in the table.4.11

Table 4.11 Average Cash Income Received by Sample Household from Different Sources.

Sources	2069 (in Rs)	2070 (in Rs)
Agricultural crops	14552.75 (17.89%)	15262.24 (15.41%)
Fruit and vegetable	12386.45 (15.21%)	12485.54 (12.62)
Livestock	15586.44(18.15%)	16385.64 (16.56)
Cardamom	38864.85(47.75%)	54854.73(55.41)
Total	81390.49 (100%)	98988.15 (100%)

Source: Field survey 2013

The table 4.11, show that the main source in of cash income of the sample households is cardamom among the agricultural sources. Agricultural crops, fruit, Vegetable and livestock provide only about 16.56 percent of cash income in 2070 B.S They are not self help in cereals production and they have to purchase food varieties after the sale of cardamom they produce. In both received more than 47% of their annual income from large cardamom.

4.12 Role and Status of Large Cardamom Farming

4.12.1 Area Under Large Cardamom Cultivation

The area of land under large cardamom in two different years is given in the table. 4.12.1

Table 4.12.1 Area Under Cardamom by Sample Households in two Different Production Years in Study Area.

Year	Qty of land ropanies	Percentage of total land
2069	265	41.66
2070	298	46.85

Source: Field Survey 2013

According to the table 4.12.1, shows that in the Surumkhim VDC ward No. 3, 4, 5 and 6, large cardamom cultivated in 265 ropanies of land in the year 2069 and which increase to 298 ropanies in 2070. Out of total land, land holding of 636 ropanies held by the sample households above land area is 41.66 and 46.85 percent of the land.

4.12.2 Production of Large Cardamom as per households

In order to find the overage production of large cardamom by the sampled households the data obtained from 60 households are grouped. The frequency distribution average and measures for dispersion are given table. 4.12.2

Table 4.12.2 Frequency Distribution, Average and Standard Deviation

Range of Cardamom Production (in 00kg)	Number of household	
	2069	2070
0-5	16	14
5-10	12	12
10-15	9	10
15-20	6	8
20-25	7	5

25-30	4	4
30-35	3	3
35-40	2	2
40-45	1	2
Total	60	60
Mean of production	138.33	137.5
S.D.	107	104.5
C.V.	77.35%	76%

Source: Field Survey, 2013

formula $\overline{\mathrm{x}} = A + \frac{\Sigma \mathrm{fd}'}{N} \times i$

$\mathrm{S.D} = \sqrt{\frac{\sum \mathrm{fd}'^2}{\mathrm{N}} - \left(\frac{\sum \mathrm{fd}'}{\mathrm{N}}\right)^2} \times \mathrm{i}$

$C.V.\frac{\sigma}{\overline{X}} \times 100\%$

Average

According to the table basis of the group data average production by the household 138.33 kg in 2069 and 137.5kg was in 2070

Standard deviation and C.V

The standard deviation for the production of large cardamom by the sampled household in 2069 B.S. is 107 kg and it is 104.5 kg in 2070 B.S. The co-efficient of variation are 77.35% and 76% respectively.

4.12.3 Income Received from Large Cardamom by the Households

In order to find the average income from large cardamom by the sampled households based on the data collected from 60 household for the recent 2 years, the frequency distribution, average and measures for dispersion are given table. 4.12.3

Table no.4.12.3 Frequency Distribution Average Standard Deviation and C.V.

Income from large cardamom (in Rs. (000)	No. of household	
0-40	16	14
40-80	13	12
80-120	9	10
120-160	5	6
160-200	7	7
200-240	4	5
240-280	3	3
280-320	2	2
320-360	1	1
Total	60	60
Mean	89.33	95.33
S.D.	86	85.2
C.V.	96.27	89.37

Source: Field Survey, 2013

According to the table of the group data by large cardamom is Rs. 89.33 in 2069 B.S. and Rs. 95.33 thousands in 2070 B.S

Standard Deviation and C.V

The standard deviation for the income of large cardamom by the sampled households in 2069 B.S. is Rs. 86 and Rs. 85.2 thousands in 2070 B.S. The co–efficient of variation are 96.27% and 89.37% of the respectively.

4.12.4 Average Production of Large Cardamom

The production of large Cardamom differs in different years. The production of large Cardamom for large and small farmers is also different . To estimate the production pattern of different farmers, the farmers were classified into four different categories. Small farmers were those who owned less than 10 ropanies of land. Large cardamom was those who owned more than 40 ropanies of land. Other two groups are in

between. Average planted area; average production of this different group of farmers in two different production years is given in the table. 4.12.4

Table 4.12.4 land Holding and Cardamom Cultivation Production of Different Kinds of Farmers in Study Area.

Land holding	2069			2070		
	No of H.H.	Average Cardamom planted area (Roapni)	Average Production (kg)	No. H.H.	Average Planted area (ropani)	Average Production (kg)
< 10 ropani	26	5.25	168.75	26	5	115
10-20	18	6.39	138.65	18	7.5	155
20-40	14	9.24	175.65	14	12	175
>40	2	15.5	300	2	14.5	345
Total	60	5.72	172.68	60	6.13	182.87

From the table 4.12.4, the average cardamom planted area is 5.72 ropanies and average production is 172.68 kg for the land. The average cardamom planted area is 345 kg for the farmers holding more than 40 ropanies of land. It is also evident from the above table that the average area planted and average production of large cardamom is increasing in 2070 BS. From Average production cardamom has increased for large farmers. The predicting is observed, the smallest landholders are efficient than other groups.

4.13 Income from Large Cardamom Production

The large cardamom is the main source of the farmers of the study area. The large cardamom cultivation in different years is different so the income is different according to the farmers in different years. The obtained data were presented in the table. 4.13

Table 4.13 Income from Cardamom

Land Holding	No. of H.H	Average income	
		2069	2070
less then ropani	26	47,619.04	38,72.45
10-20 ropani	18	36,776.21	39,200
20-40 ropani	14	37,756.20	36,000
above 40 ropani	2	33,387.09	42413.79
Total	60	38864.85	54854.73

Source: Field survey, 2013

According to the table 4.13, shows that farmers holding different size of land have different levels of income. Large size, higher the income and smaller size lower the income. The average cash income from cardamom for the sample farmer was Rs. 38864.85 in fiscal year 2069. However it increased to Rs. 54854.73 in 2070. The average income of big farmers holding more than 40 ropanies of land increased the average cash income from Rs. 33,387.09 in 2069 to Rs. 42413.79 in the year 2070.

4. 14 Price of Cardamom

There is no fixed price of the large cardamom. Due to fluctuation of the market situation different farmers sell their production in different prices. The numbers of farmers repotting different price levels are shown in the table. 4.14

Table 4.14 Different Price levels Received by Different Numbers of Sample Farmers in Different Years

Price level Rs. Kg	Farmers selling cardamom	
	2069	2070
1500-1550	26 (43.339%)	23 (38.33%)
1550-1600	15 (25.009%)	17 (28.33%)
1600-1650	9 (15.00%)	10 (16.67%)
1650-1700	5 (8.33%)	6 (10.00%)
1700-1750	3 (5.00%)	2(3.33%)
above to 1750	2 (3.33%)	2(3.33%)
total	60 (100%)	60 (100%)

Source: Field Survey, 2013

According to the table 4.14, is a hide variation of large cardamom in both the production years. It varies in a range of Rs. 1,500 per kg to more than Rs. 1,750 per kg. All the farmers cannot sell their product at the highest price. Majority of the farmers seems to be waiting for higher price but only about 3.33 percent of total farmers were able. To receive highest price levels. About one third of the producers are selling their product below the average price prevailing in the market. Inability of the farmers to teach higher price might be related to quality of the product, financial agency felt by the farmer or fear of the farmer that the product may not sell in the particular there because of reaming purchasers.

4.15 Willingness to Expand the Large Cardamom Cultivation

All the farmers are willing to explain the large Cardamom cultivation due to the higher return as cash income. But there are several inciting factor that inhibit to expand it. The farmers were asked to identify the limiting factors. The response given are summarized in the table. 4.15

Table 4.15 Perceived Limiting Factors for Increasing Cardamom Production and Response of Farmers in Surumkhim VDC

Perceived Limiting Factors	No. of farmers responding	
Subject	Yes	No
Seed and fertilizer	44	22
Diseases	55	4
Labor	3	45
Better Land	-	56
Irrigation	5	44
Technical Knowledge	32	28

Source: Field Survey, 2013

According to the table 4.15, seed, fertilizer and diseases used considered to be limiting factors to more than 50 percent of farmers because the indentified them in a affirmative response. More than 50 percent (25/45) farmers engaged technical knowledge as a limiting factor.

4. 16 Different Comments of Cardamom Cultivators

All the farmers are increasing the cardamom planting in every year. They are facing different kind of problem. They are facing different kind of problem. They have several expectations from the government so that their capacity of population will increase. The response given by the farmers asking for government help are summarize in the table. 4.16

Table 4.16 Farmers' Expectation for Help

Expectation	Number of farmers responding	
	Yes	No
Cardamom research and extension	44	-
Seed and fertilizer availability	39	19
Market and transpiration	55	-
Economic Help	56	5

Source: Field survey, 2013

According to the table 4.16, all the farmers expect the government policy to take from cardamom development and develop marketing and transportation facilities for the expectation of large cardamom cultivation. Some cardamom high value of export crop which can help to case the balance of payment problem government needs to consider this need of the farmers. Economic help in the time of some short of subsidy, marketing public land available for cardamom cultivation, supply of seeds for cardamom cultivation, supply of seeds and fertilizer are some other expectation made by farmers.

CHAPTER–V

SUMMARY, CONCLUSION AND RECONMENDATION

5.1. Summary

This study was conducted in Surumkhim VDC Ward No3,4,5 and 6 of Taplejung district in eastern Nepal. All together 60 farmers were selected randomly from ward No. 3,4,5 and 6 of the Surumkhim VDC provided necessary information for the study. The information was collected by administering a pre-tested questionnaire by the researcher herself.

The objective of the study was to find out; the extent of the large cardamom cultivation in Surumkhim VDC, Contribution made by the cardamom in annual income of the farmers, the trend of expansion of cultivation of cardamom, the problem associated with production of cardamom, the role of cardamom farming on local economy and suggest necessary policy measures, the analysis of the data was done manly by using descriptive statistics.

Sample farmers owned different types of land. Out of total land of 636 ropani lowland was 325 ropani, upland was 215 ropani, pasture land was 60 ropani and wetland was 36 ropani. Out of rate 636 ropani, large cardamom was planted in 298 ropani of land in 2070 B.S. This is 46.85 percent of total land. It was about 5.25 percent mere area than the previous year.

The average area planted with large cardamom by the sample farmers in years 2069 was 5.72 ropani and the average production was 172.68 kg. Similarly the average area in the years 2070 6.13 ropani and average production was 182.87 kg per farmer.

The area and production of large cardamom varied with land holding. As the land holding increase area and production of large cardamom increases. However the production of small farmer seems to be higher but it is inconclusive.

Cardamom farmers are still producing the traditional cereal crops; paddy is still most important and dominant.

To meet the cash acquirements of a farm family product saved from consumption are sold by traditional farmers and converted into 2069 was to rs. 81,390.49 And 2070 it was Ra 98988.15 annually.

The average cash income receive by sample farmers only from large cardamom was Rs 38864.85 in the year 2069 which increased to Rs. 54854.73 in 2070 in 2069 year more than 47 percent and in 2070 year mere then 55 percent of the cash income of sample farmers was derived from large cardamom. Cereal crops, fruit and vegetable and livestock contributed less than 45 percent of total agricultural cash income.

The average cash income large cardamom is increasing over the years in a sizable manner for small and mediums farmers. The average cash income of the big farmers decreased in 2069 year but in 2070 year the average cash income in increasing.

There was a wide variation in the price of large cardamom verging from less than Rs. 1500 to more than Rs. 1750 per kg.

Farmers were willing to increase the production of large cardamom. The limiting factors perceived by the farmers were diseases control, quality seeds/fertilizer and technical knowledge.

The farmers' expectations from the government for the expansion of cardamom cultivation were dominated by development of market, facilities of economic help, transport facility and establishment of government policy, research and extension program.

5.2. Conclusions

From the study several conclusions can be drawn which may be applicable for the large cardamom growing area in the hill of Nepal. These conclusions are following.

1. Large cardamom is cultivated in marginal and degraded slopes. Its cultivation is the utilization of the land which would otherwise go fallow. So, it does not complete with other food crops for land. In fact it helps in the rehabilitation of degraded lands.
2. Large cardamom is an important cash crop for the farmers. It is providing significant amount of cash income. It promotion cultivation may be a key item in increasing rural income and hence alleviating rural poverty.
3. Thaplejung ranks first items of area production and yield of large cardamom. The annual production is around 4000 metric tons nearly 9004 household area

involved in its cultivation and more then around 90% of income is generated from large cardamom.

5. According to world data, production of large cardamom is around 17000 metric tons with major contributions from Nepal, India, Indonesia and Bhutan. Nepal is the leading country among them.

6. There is the lack of financial institution floating appropriate credits facilities for the farmers of Taplejung district.

7. There is lack of basic facilities like collection centers. Storage transportation etc. And it has hindered to mobility of trade and transaction concerning large cardamom.

8. Lack of conductive policy and lack of export environment are the problems of traders.

9. There is lack of appropriate combating against pests and fungi that attack large cardamom around 30% of the crop is damaged by the diseases called 'chhirke' and 'phurke'.

10. The farmers are willing to increase to production of large cardamom. Adequate irrigation practices, Suitable varieties of cardamom and research and extension activities probably through large cardamom development programmed area need the time.

11. The farmers lack the proper knowledge of grading and packaging. As a result standardization of the product looks low and cannot receive high price.

12. Dependency of the export trade to India only and the regular fluctuation of market price in international market is a problem of large cardamom.

13. Large cardamom has marketing problem. The price variation is very high. Being an export oriented crop, distant market is out of the reach of the farmers.

14. Limited information about international market price and price fluctuation has discouraged the farmers in the cultivation of large cardamom.

15. Large cardamom has not received due attention from organized sector for its research and development. The literature available is scarcity.

5.3. Recommendations

1. Large cardamom cultivation in suitable places should be promoted by the government. Increase in production will not only be a means to increases farmers income but also export earnings. It also increases the use of marginal land.
2. Research and extension regarding large cardamom cultivation is a need to increase the production. So government organizations like national agricultural research council and department of agriculture should emphasize on the research and development of large cardamom.
3. Research and investigation should be made to control pests and diseases in large cardamom.
4. Farmers should be trained on quality maintenance, storage, grading packaging so as to yield good brand of product.
5. Financial assistance like loan should be made available to the local level and the loan procedure should be simplified.
6. Transportation facilities should be developed by the government. Farmers can be reaching to market center from remote area easily.
7. Marketing of large cardamom should be promoted by government. Marketing agency, market information are argental need for farmers/traders.
8. Export promotion of large cardamom may increase the demand in the domestic market. It is needed not only to increase price. But also to assure foreign earning.
9. The socio economic studies related to large cardamom cultivation needs to done beside the cultivation related technical studies should be done.

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Appendix-I

Calculation of Means S.D. and C.V.

Production kg	Mid Value	No of H.H.	$d' = \frac{x - A}{i}$	fd'	Fd'^2
0-50	25	14	-4	-56	224
50-100	75	12	-3	-36	108
100-150	125	10	-2	-20	40
150-200	175	8	-1	-8	8
200-250	225	5	0	0	0
250-300	275	4	1	4	4
300-350	325	3	2	6	12
350-400	375	2	3	6	18
400-450	425	2	4	8	32
Total		N=60	d=0	$\Sigma fd' = -105$	$\Sigma fd'^2 = 447$

$$\overline{X} = \mathrm{A} + \frac{\Sigma \mathrm{fd}'}{\mathrm{N}} \times \mathrm{i}$$

$$= 225 + \frac{(-105)}{60} \times 50$$

=137.5

$$S.D. \sqrt{\frac{\sum fd'^2}{N} - \left(\frac{\sum fd'}{N}\right)^2 \times i}$$

$$= \sqrt{\frac{447}{60} - \left(\frac{-105}{60}\right)^2 \times 50}$$

$$= \sqrt{\frac{447}{60} - \left(\frac{-105}{60}\right)^2 \times 50}$$

=104.5

$$\mathrm{CV}. \frac{\sigma}{X} \times 100\%$$

$$= \frac{104.5}{137.5} \times 100\%$$

=76%

Appendix-II

Calculation of Average Income, S.D. and C.V. (2070)

Income from large cardamom (Rs.000)	Mid value	N of H.H (f)	d'=$\frac{X-A}{i}$	fd'	fd'^{2}
0-40	20	14	-4	-56	224
40-80	60	12	-3	-36	108
80-150	100	10	-2	-20	40
120-160	140	6	-1	-6	6
160-200	160	7	0	0	0
200-240	220	5	1	5	5
240-280	260	3	2	6	12
280-320	300	2	3	6	18
320-360	340	1	4	4	16
		N=60		Σfd'=-97	Σfd'^{2}=429

$$\overline{X} = A + \frac{\sum fd'}{N} \times i$$

$$= 160 + \frac{(-97)}{60} \times 40$$

=95.33

$$S.D = \sqrt{\frac{\sum fd'^2}{N} - \left(\frac{\sum fd'}{N}\right)^2} \times i$$

$$= \sqrt{\frac{429}{60} - \left(\frac{-97}{N60}\right)^2} \times 40$$

=85.2

$$CV.\frac{\sigma}{\overline{X}} \times 100\%$$

$$= \frac{585.2}{95.33} \times 100\%$$

=89.37%

Type equation here.

Questionnaire

INTERVIEW SCHEDULE

1. Personal Description

Farmers Name …… address……. .caste.....

Religion …..... Language ……

2. What is the structure of your family?

age	Female			Male			Situation of Education			
1-10	Married	Unmarried	Total	Married	Unmarried	Total	Illiterate	Literate	S.L.C.	above S.L.C
11-20										
21-30										
31-40										
41-50										
51-60										
61-70										
70 above										

3. What is the main occupation of your family?

i. Agriculture ii. Agriculture aided by government services.

ii. Agriculture aided by government services iv. Agriculture aided by business

4. How much land do you operate?

land	Ropani	Anna
Low Land (Ket)		
Bai		
Pasture Land		
Wetland		

5. How much of the following crops did you produce in previous year?

Crops	2069	2070
Paddy		
Maize		
Millet		
What/Barley		
Other		

Role and Status of Large Cardamom farming which is the source and agricultural income in your family.

i. Cardamom farming ii. Paddy farming

iii. Maize farming iv. Millet Farming

Before how many years did you start the large cardamom cultivation?

i. Before one year ii. Before two years

iii. Before three years iv. Above three years

What was the cash income from different sources in given two-years?

Product crops	years 2069	2070
Agricultural crops		
Fruits and Vegetable		
Livestock		
Cardamom		

How much large cardamom did you planted in last two yers?

Year	**Area of Land**
2069	
2070	

How much large cardamom did you planted and product in last two years?

Years	**Area**	**Production**
2069		
2070		

Are there any problem to sell large cardamom?

i. Yes ii. No

Do you get the proper market and price to sell the cardamom?

i. Yes ii. No

How much did you income received from large cardamom in last year's.

Years	**Area**	**Incom**
2069		
2070		

6. It there any change in the selling price of the large cardamom?

i. Yes ii. No

If yes, what is the price in the last two years

Cardamom	**Year**	
Cardamom	**2069**	**2070**

7. Do you have difficulty get following inputs in production of large cardamom?

Items	Yes	No
Seeds /and fertilizer		
Compost		
Labor		
Pesticides and		
insecticides		
Better land		

8. Are you going to expend the production of large cardamom in future?

i. Yes ii. No

9. what are the main problems to expand of production of large cardamom?

Subject	**Yes**	**No**
Seeds and fertilizer		
diseases		
Economy		
Marketing and Transportation		
Facilities		
Government Policy		

10. What do government should do for the production of large cardamom?

Give your opinion ……..

……

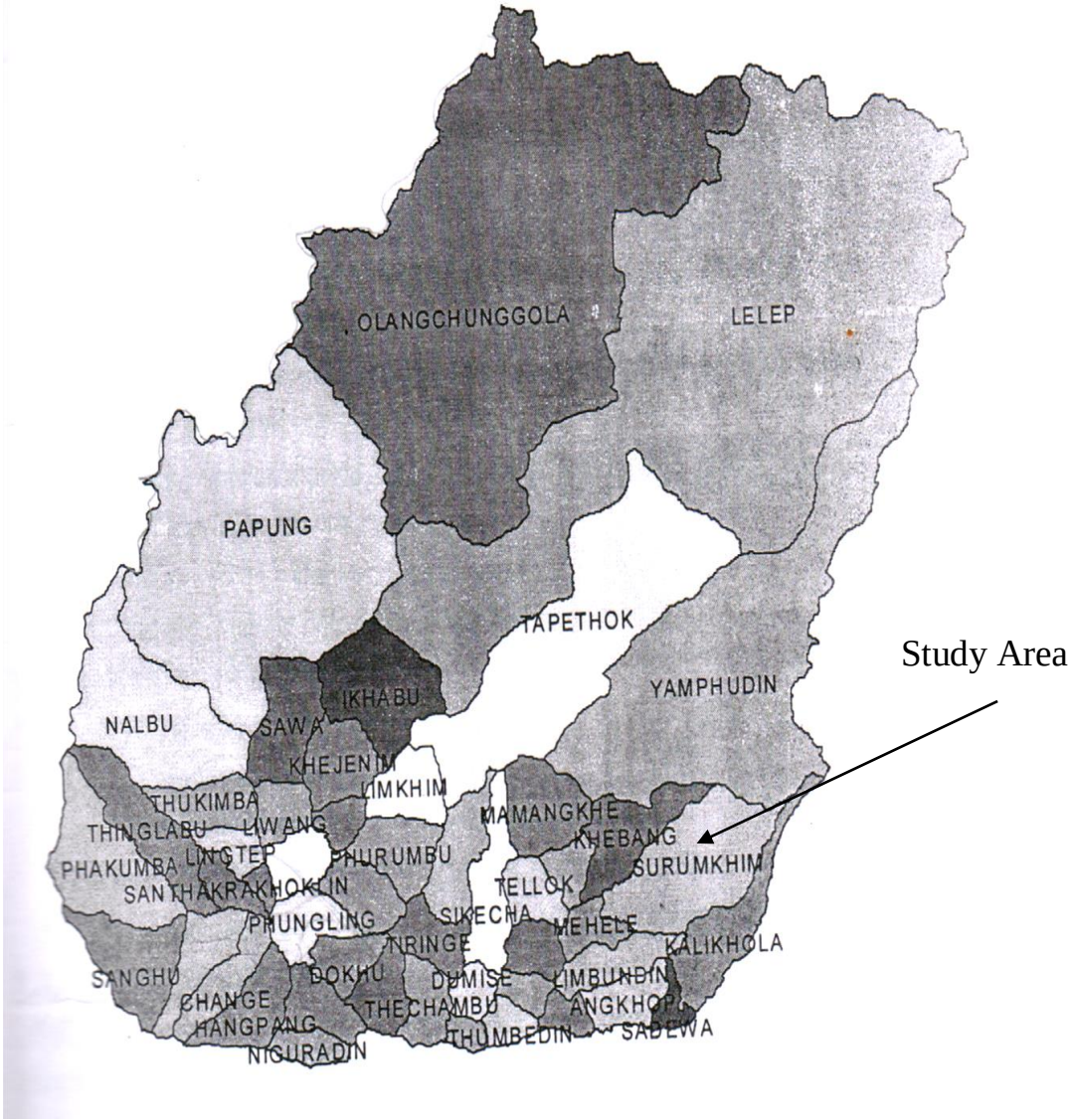
……

Farmer's Signature

Appendix–III

Some Photos of Study Area

Taplajung District



Study Area

Large Cardamom

Farmers Harvesting Large Cardamom

Plants of Large Cardamom