

**PROBLEMS AND PROSPECTS OF TEA CULTIVATION
IN KANYAM VDC, ILAM DISTRICT, NEPAL**

A Thesis

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ABBREVIATIONS/ACRONYMS

AD	Anno Domini
BA	Bachelor of Arts
BS	Bikram Sambat
CEDECON	Central Department of Economics
COC	Code of Conduct
CTC	Crush Tea Curl
FGD	Focus Group Discussion
Fig.	Figure
FY	Fiscal Year
GDP	Gross Domestic Product
Govt.	Government
HH	Household
HMG	His Majesty's Government
HOTPA	Himalayan Orthodox Tea Producer Association
IA	Intermediate of Arts
Kg.	Kilogram
LTP	Lawrie Tea Processor
M	Meter
MA	Master of Arts
mm	millimeter
Mt	Metric tone
NCDC	Namsaling Community Development Committee
NTCDB	National Tea and Coffee Development Board
NTDC	Nepal Tea Development Corporation
S.N.	Serial Number
SLC	School Leaving Certificate
Sq Km	Square Kilometer
TU	Tribhuvan University
VDC	Village Development Committee
WN	Ward Number

CHAPTER I

INTRODUCTION

1.1. General Introduction

Nepal is an agro-based and landlocked developing country. It is covered by the area of 1,47,181 sq. km. and located between 26⁰22' to 30⁰27' north latitude and 80⁰4' to 88⁰12' east longitude.

Nepal is highly depended on agriculture. Agriculture contributes 38.0 percent of total GDP (Gross Domestic Product) and more than 80 percent people are engaged in agriculture sector. The total agriculture land is 2,64,100 hector. Out of total land, 27 percent land is in Tarai which is fertile and 73 percent is in Hill and Mountain where production is lower than Tarai. Out of total agricultural production, cereal crops have occupied 33.68 percent, cash crops 6.87 percent, horticulture 21.57 percent, animal husbandry 27.66 percent, fishery 0.99 and other 9.24.¹

The cash crops are very important in terms of industry and play significant role in the economy. Most of the cash crops are cultivated in Tarai but tea is cultivated in Tarai and hill side in the eastern part of Nepal.

Tea cultivation is not a new phenomenon for Nepal. The status of tea in Nepalese economy is almost similar to the other cash crops like jute, tobacco, ginger and cardamom. However, tea cultivation is newly introduced as a commercial point of view. Among the various cash crops,

¹ Ministry of Finance (2063), *Economic Survey, 2062/63*, MoF, Nepal.

tea is one of the important sources of foreign currencies. In recent years, tea cultivation is expanding in different districts of Nepal like Nuwakot, Ramechhap, Kaski, etc. and it is cultivated in 12 thousand and 5 hundred hector in the fiscal year 2062/63.²

The history of tea cultivation starting in Ilam is about 100 years old. In 1920 Mr. Goja Raj Singh Thapa had taken tea plants from Darjeeing and planted on his birta-land at Ilam district which is called 'Soktim Tea Estate'.³

According to the local people Tea bushes of Ilam Tea Estate were planted about a hundred years ago which seeds brought from China by the father of a governor of Ilam. There is no controversy about the fact that tea seeds were brought from China.

In Kanyam, tea plantation was started in 2028 BS only in the form of state tea corporation. After 2032 BS, it is known that the farmers started tea cultivation as a cash crop farming. Now it is cultivated in every ward of Kanyam VDC as a small and large farm size.

Tea cultivation has been divided into two sector i.e. (a) Private sector (estate/company), and (b) Smallholders.

Tea plantation is rapidly expanding in the various parts of Nepal but in the public sector, the tea estates are privatized according to government policy in the period of ninth five year plan. Government policy encouragement and emphasis to the tea cultivation in the private sectors and smallholder have provided more employment by expanding tea cultivation.

1.2. Statement of Problem

²

³ Nepal Rastra Bank (2059) *Samachar*, Barsik Prakashan, NRB, Baishakh, P. 149.

Tea is the best friend. Most of the people used it as a medicine of various diseases viz. anti-tumor, anti-ulcer action, suppression of blood glucose increaser, etc. It is one of the important cash crops farming in mostly the eastern part of Nepal and other hand, it replaces the subsistence farming. It plays significance role to preserve the environment. It is necessary to improve the transport irrigation, marketing labor trade etc., for promoting of tea farming. Geographical complexity, economic insufficiency, lack of in-depth study, research for betterment of tea plantation and production has not been successful for tea cultivation.

Now, in Ilam district, tea is the main source of income and it also helps to earn foreign currency. It can be cultivated in both hilly and the Tarai regions. It helps the land from being landslide and other natural disaster.

Tea cultivation in Kanyam VDC has a long history in Nepal. Now, it has been increasing rapidly in this VDC and most of people involve in tea cultivation. So, there is essential to the study of problems and prospect of tea cultivation for the achievement. Thus, it is also important problem of study.

1.3. Objectives of the Study

The objectives of this study are devised into two parts viz. general and specific. The general objective of this study is to find out the problems faced by the tea cultivators and forecast the future position of tea in the domestic and international market. To achieve the general objective, the following are the specific objectives.

1. To study the trend of tea cultivation.
2. To examine and analyze the problems of tea cultivation.
3. To forecast the future prospects of tea production.

1.4. Significance of the Study

The significance of the study is dealt in points below.

1. To gain knowledge about tea cultivation.
2. To find out the problems encountered in tea cultivation.
3. To provide suggestions to solve the problems which are found in the area of tea cultivation.
4. To help making plan and strategies to improve tea cultivation.
5. To know what things are to be done for development of tea.

1.5. Scope of the Study

The area of the study is concerned with the problems of tea cultivation in Kanyam VDC. It also studies the way of farmers' cultivation and production. So, it provides knowledge for better improvement of tea cultivation.

1.6. Limitations of the Study

There are certain limitations of this study which are as follows:

- Resources are limited.
- The reliabilities of the study are dependent upon response of respondents.
- The nature of the study for most part is descriptive study.

CHAPTER II

METHODOLOGY

This chapter deals with research methodology in order to achieve specific objectives with reference to research design, selection of the study area, source of data, universe of the population of the study area, sampling procedure and sample size, selection of the respondents, tools and technique of data collection, data processing, analysis and interpretation.

2.1 Research Design

Research design is a plan, structure and strategy of investigation conceived so as to obtain answers to research questions and to control variance. The research has been designed as analytical as well as descriptive is followed. The purpose of the design is to describe and analyze the trend of the tea cultivation and problems faced by the tea cultivators and forecast of future of tea of Kanyam VDC. This study has been made more empirical with relevant primary data collected from the study area.

2.2 Selection of the Study Area

The study area is the Kanyam VDC, which is one of the VDCs of Ilam district. It lies at the middle-east part of Ilam district on the way of Mechi Highway and the range is from 700 to 1840 meters. It lies in my residential area where there no special study of smallholders of Kanyam VDC carried out about tea cultivation and production until now. Therefore, Kanyam VDC for the study area was selected.

2.3 Nature and Sources of Data

This study is supported by both primary as well as secondary data. So, the required data and informations to the study have been collected from the primary and secondary source of data collection. Various research studies, textbooks, statistical reports, different researches published by different institutions like NTCDB, NCDC and VDCs are major sources of secondary data and information. However, the nature of the study is mainly based on primary data collected from the field survey, field observations and interviews.

2.4 Universe and Population Study

Kanyam VDC of the Ilam district is the universe of this study. The population of this study includes selected household heads in the study area and VDC personnel.

2.5 Sampling Procedure and Sampling Size

According to the household survey 2006, the VDC has a total of 1477 household. Out of total households, 535 (76.12%) are engaged in tea cultivation. Among them 162 household has been selected for the survey which represents 30 percent of the total tea cultivated household. VDC consist 9 wards and every ward is involving in tea cultivation are selected randomly for questionnaire survey. The survey has been conducted during October/November 2006.

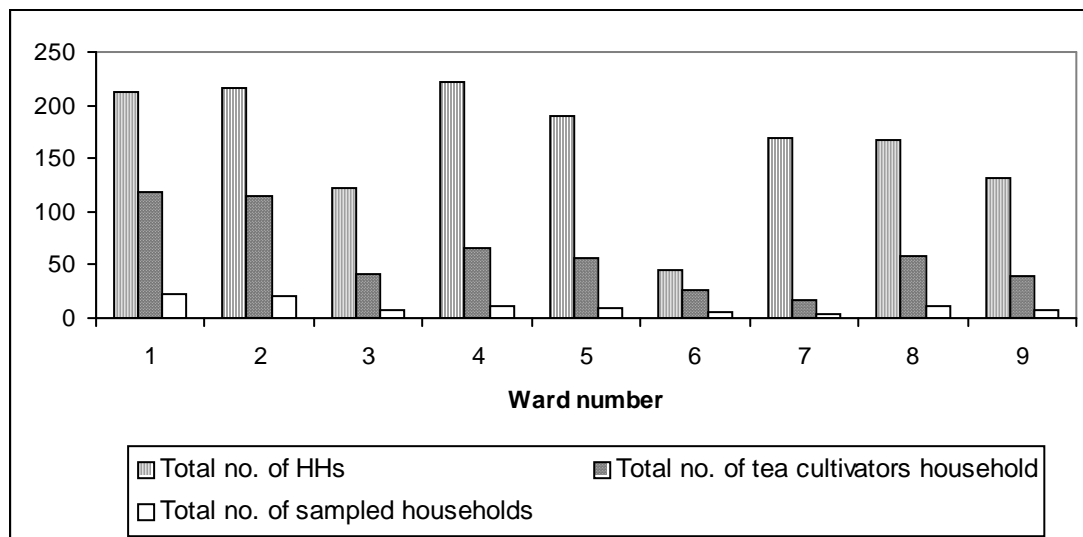
Lottery method was consulted in order to selected households for the sample. The member of sample households included in the study is given in table 1.1:

Table 1.1: Sample Frame

Ward no.	Total no. of HHs	Total no. of tea cultivators household	Total no. of sampled households
1	212	119	36
2	216	114	34
3	123	42	13
4	222	65	20
5	190	56	17
6	45	26	8
7	169	16	5
8	168	58	17
9	132	39	12
Total	1477	535	162

Source: Field survey, 2006.

Figure 2.1: Sample Frame



Source: Based on the table 1.1.

2.6 Tools of Data Collection

This study is supported by both primary and secondary data. Although, the research was intended to be more field based, secondary sources of data were also used to arrive at right conclusion. The

secondary data are mainly based on books, research reports, articles and VDC Official records.

2.6.1 Household Interview Questionnaire

Household questionnaire was the main tool of data collection. It was designed to collect data from the field. The questionnaire was asked to the household heads. The household heads provided the real data to the research which was more reliable to interpret the data. The questionnaire included socio-economic conditions, educational status, present situation of tea cultivations and its problems and prospects. Both the close and open-ended items were included in the questionnaire.

2.6.2 Key Informants Interview Checklist

Key informants interview checklist was another tool for the collection of data. It was designed to get information on socio-economic status, techniques about tea cultivation, problems of tea and its future. The key informants were social workers, political leaders, tea experts and former leading tea cultivators.

2.6.3 Focus Group Discussion (FGD)

Focus Group Discussion (FGD) was conducted to pick out some hidden information supporting the objectives of the study. FGD guidelines were the tools for information collection. The participants were the local, social workers, political leaders, tea experts, members of Himalayan Orthodox Tea Producers Association (HOTPA), former leading tea cultivators. Before organizing the group discussion, FGD instruction was prepared and participants for discussion were informed. They were provided with the topic of discussion and time schedule. Before operating discussion, one moderator was appointed who was already trained on the topic of discussion by researcher himself. Then,

continually primary research questions, why questions, testing questions and likes were asked to the general members. The moderator had asked the questions and responded to the answers of general members. The researcher recorded notes noted and information relevant to the study in a separate diary.

2.6.4 Published and Unpublished Document

Along with the tools discussed above, used in this study, published as well as unpublished materials were also used. These sorts of materials helped in reviewing the literature and interpreting primary data collected from the field.

2.7 Data Processing, Analysis and Interpretation

After the completion of field survey, the information was gathered in one place. The data thus gathered were first edited and then coded with the help of a coding table. After coding the data, they were tabulated. Before tabulating data, they were classified and put under required headings and sub-headings. The data were converted into percentage as well as frequency table. The information obtained from the secondary source as well field observation, formal and informal interview were similarly processed and tabulated. The analysis was done with simple statistical tools such as tables, percentages, averages, bar-diagrams and pie-diagrams. So this study presents the data analyzed quantitatively and qualitatively.

2.8 Procedure Employed

Procedure of the methodology has been summarized which is as follows:

- a. First of all, related literature were reviewed and the data required for the study were identified and collected from the mentioned sources.
- b. Data are presented in tables, bar-diagrams, pie-diagrams under different headings as required in the study. Percentages and averages were calculated and included in the tables.
- c. Presented data are analyzed using descriptive and analytical methods.
- d. On the basis of the study, conclusion was deduced and suitable recommendations made.

CHAPTER III

LITERATURE REVIEW

There exists a good deal of literature on the tea cultivation because both Nepalese and foreign people have made a series of studies on the tea. Many research activities have already been conducted about orthodox tea of Ilam. But, no research has been conducted till now in the case of smallholders of Kanyam VCD of Ilam district. For preparing this thesis, the related books, dissertations, reports and articles have been reviewed which are mentioned in four categories below.

1. Books

Herler has presented a good introduction in most of the aspect of tea planting. In his book, he has mentioned about the plantation of tea plant, its origin, and history of it. Similarly, he has described country-wise description of tea. He has also published a book in manufacturing tea, which is very informative (Herler (1964).

Sarkar has made a study on tea with special reference to its economic aspects. From the economic point of view, this is a very informative book which provides, recent data relating to the production of tea in the world (Sarker, 1973).

Amatya has dealt with the growth of individual cash crop farming and attempted to show the distribution pattern of each corps including tea in the second chapter, lastly he has made some suggestions for the development of cash crops farming in the country (Amatya, 1975).

Eden has given the significant developments made in Tea Culture and manufacturing, including the principles of tea production. This is a scientific research. In this book, the methods used in planting and managing tea Bushes are explained systematically. This is an informative

book. People interested on tea can get a good deal of information from his book in simple language (Eden 1976).

2. Dissertations

Joshi has made a study about tea industry in Nepal and he has found that increase in the per-capita income will have positive effect on the consumption of tea (Joshi, 1978).

Koirala has studied the total land under the tea cultivation extended considerably during the period of last twenty years. Consequently, its production as well as consumption has also increased significantly. Again, he has said that the people are being more optimistic and giving more attention in tea plantation. It seems that Nepal is likely to reach the goal of self-sufficiency before 2000 A.D (Koirala, 1983).

Rai has compared between private and public sector of tea production and he has found that both sectors are playing significant role for the consumption and export of tea and also has found that private sector is more active than public sector in Nepal (Rai, 2001).

Adhikari has studied about tea export condition of Nepal and has concluded that Nepalese orthodox tea is also source of foreign currency. It seems that Nepalese tea has bright future in international market (Adhikari, 2005).

3. Reports

Gautam, in his report, has studied on the expansion of tea area in Nepal, in the context of the pattern of consumption, the growth rate of population, the area under tea at present and future prospect, to increase the production and productivity and direct and indirect benefit form the investment in the tea production (Gautma, 1973).

Sharma has highlighted that tea is an important source of foreign currency and foundation of overall development of the country on the basis of geographical conditions. But, fair export duties are not specified.

Thus, export promotion is negatively affected. It is necessary to determine the export duty on the basis of percentage of per kg green tea. Price determination should be based on competitive market price unlike the present monopoly price of tea processing factories. Exportable tea should be free from local taxes, which will help lower price in the international market. Also, the study suggests implementing a supervision system in packed tea (Sharma 2001).

Whittle, in his report, has made arguments in favor of tea Development Foundation using the term 'development' rather than 'research'. The report covers the situation of tea growers in Nepal, current extension and research provision and area for training. The report strongly suggests that the need of 'Tea Development Foundation' as an independent trust for development and extension of Nepalese tea industry and the foundation should provide training service for small growers (Whittle, 2003).

4. Articles

Sharma has suggested that Nepalese tea, producing in eastern hilly region, is same as high quality and tea of Darjeeling tea by the reason of same climatic condition. In addition, Nepalese tea is relatively better than the Darjeeling tea because Darjeeling tea is produced in old soil of more than 100 years, but Nepalese tea is being produced on virgin soil. So, Nepal can earn foreign currency through export promotion by introducing the tea produced on virgin soil of hilly region in international market (Sharma, 1994).

Sanyashi, on his study, has covered almost all aspects of tea industry such as tea cultivation, tea manufacturing, marketing, consumption, financial analysis, economic analysis and management. It also deals with agro-climatic condition, market trends, future prospects and plants for expansion of tea area (Sanyashi 2001).

Shrestha has concluded that some of the following measures should be adopted for the development of tea in Nepal. The measures are development of infrastructure, classification of small farmer with debt cancellation, world-wide marketing for excess in the global market, conducting the research work for quality tea and for reducing the cost expenditure, priority for required manpower development (Shrestha, 2004).

Dr. Thapa has mentioned that there are unlimited possibilities of tea production in Nepal. Geographic situation and climate of Nepal is supposed to be suitable for orthodox tea production and the demand of tea is increasing day by day in the world market. However, there are a lot of challenges in tea production which are related to government, manufacturing and marketing. It concludes that there should be commitment for tea development of Nepal (Thapa, 2006).

From the perusal of books, dissertations, reports and articles as mentioned above, it is seen that systematic techniques and information of tea cultivation, production and marketing have been mentioned. But, previous studies have given less information about problems and prospects of tea in Nepal.

The present study helps identify the problems of the tea cultivation in Kanyam VDC. It provides trends of tea cultivation and production and also forecasts the future of tea in the international markets.

CHAPTER IV

INTRODUCTION OF THE STUDY AREA

4.1. Geographical Setting

4.1.1. Location

Ilam district lies in the eastern part of Nepal. It bounds in the north Panchathar, in the south Jhapa, in the east and west the west Bengal of India

There are 48 VDCs and a Municipality. Among them, Kanyam VDC is located about 36km east far from its headquarter. It is situated in the middle-east part of district. It is extended from north to south having rectangular shape which is situated $26^{\circ}50'30''$ to $26^{\circ}53'$ north altitudes and $88^{\circ}02'47''$ to $88^{\circ}07'42''$ east longitude of Mahabharate range.

4.1.2. Boundaries

Kanyam VDC is bordered by Fikkal VDC to the north, Kalbuang and Girmale VDCs to the south, Srianu and Samalbang to the east and Fikkal and Panchakanya to the west.

4.1.3. Relief

Geographically, Kanyam VDC is beautiful and hilly area. It is more or less rectangular shape. The height range is from 700m to 1840m from the mean sea level.

4.1.4. Drainage

Most of the streams flow from north to south like Biring and Siddikhola. Some of them are Jhampal Khola, Khanni Kola, Phagee Khola and Targoun Khola that flow from west to east. These streams are important for irrigation. River water fluctuates in the monsoon season.

4.1.5. Climate

The climatic condition of Ilam district is warm and cold. Summer becomes moderately hot and winter is mild cold. June is the hottest month and January the coldest one. So, maximum average temperature is 20.7C and minimum temperature remains 12.6C. Mean annual rainfall is 328mm which has been recorded in Kamyam tea estate. More than 90 percent of annual rainfall occurs in summer monsoon and 20 percent in winter. The winter rainfall is characterized by uncertainty. Dry and cold in winter and hot and rainy in summer are the climatic characteristics of the VDC.

4.1.6. Soil

Once soil survey of tea grown area of Ilam district was carried out by HMG, Department of Agriculture Soil Science Section in 1965. According to the result of this survey, Sunlay-clay-loam soil is spread all over the areas with varying colors on the upper part of the VDC and dark brown soil in the lower part of it.

4.2. General Land Use Pattern of Kanyam VDC

The land usage pattern is of different types based on users i.e. cultivated land, forest land, bush land and grazing land. It is an expression of man's interaction of his environment. It is also an outcome of the land capability, land suitability, technology and farmers decisions.

4.2.1. Land Use Pattern of 2003

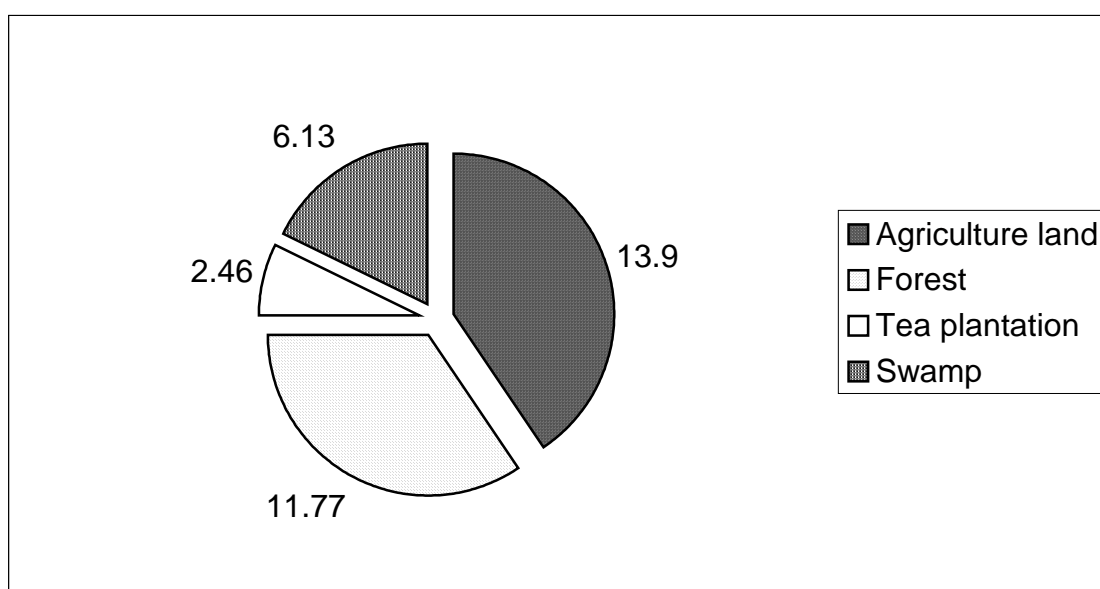
The main use land cover map of 2003 has been prepared based on the topographic of 2003 at scale of 1:2500. Four major categories of land users are agriculture land, forest land, swamp land and tea plantation found in the VDC. Land use pattern of Kanyam VDC is given in the table 4.1 below.

Table 4.1: Land Use Pattern of Ranyam VDC in 2003

S.N.	Land use	Area in sq. km.	Percent
1	Agriculture land	13.90	47.32
2	Forest	11.77	41.76
3	Tea plantation	2.46	8.80
4	Swamp	6.13	0.12
Total		29.26	100.00

Source: *Periodical Sustainable Development of Kanyam VDC*, NCDC, 2003.

Figure 4.1: Land Use Pattern of 2003



Source: Based on the table 4.1.

In 2003, the above table 4.1 and the figure 4.1 show that the largest portion of the land has been covered by agriculture land. The area of

agriculture land is 13.90 sq. km. of the total area. Similarly, the second largest portion of the land is covered by forest land and tea plantation covers the third largest portion of the land, and it seems that only 0.12 sq. km. land has been covered by swamp land.

4.2.2. Road Network

Road network is essential for development. In Kanyam VDC, there are many agricultural roads which link to the Mechi Highway. The Mechi Highway plays vital role in this VDC and crosses the VDC through south to west.

4.3. Socio-economic Condition

4.3.1. Educational Status

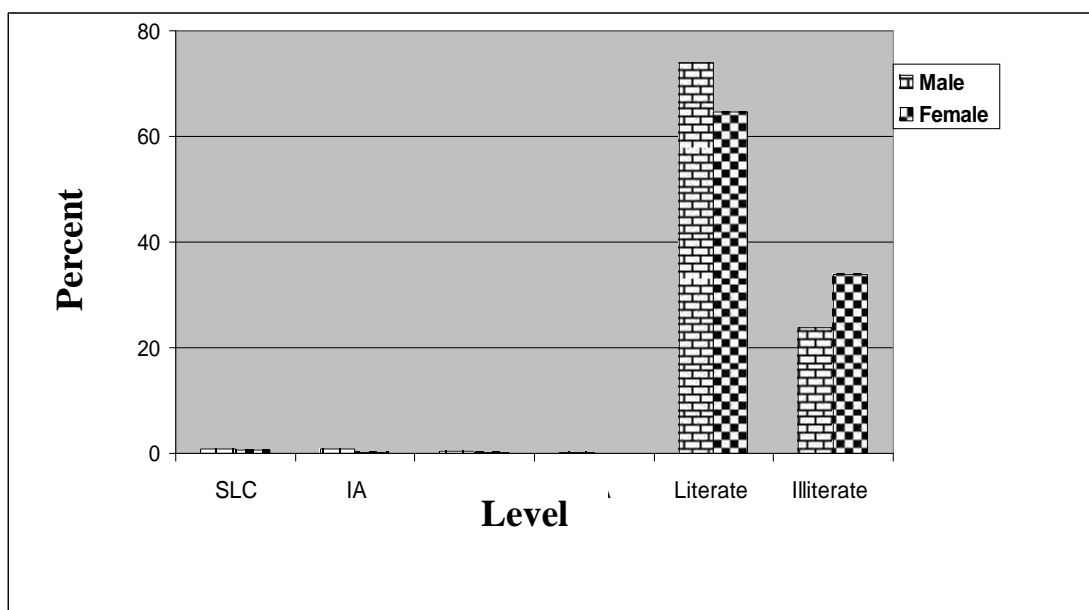
The overall education status of the people of Kanyam VDC seems well. There are nine government schools and three private boarding schools in this VDC. Out of the total government schools, one is secondary and others are primary. The general education status of the VDC is presented in the table below.

Table 4.2: Educational Status of Kanyam VDC.

S.N.	Class	Male	%	Female	%	Total	%
1	SLC	35	0.9	24	0.6	59	0.8
2	IA	31	0.8	12	0.3	43	0.6
3	BA	20	0.5	11	0.3	31	0.4
4	MA	6	0.2	1	0.1	7	0.1
5	Literate	2810	73.9	2442	64.7	5252	69.3
6	Illiterate	903	23.7	1286	34.0	2189	28.8
	Total	3805	100.0	3776	100.0	7581	100.0

Source: *Periodical Sustainable Development of Kanyam VDC*, NCDC, 2003

Figure 4.2: Educational Status of Kanyam VDC



Source: Based on the Table 4.2.

The above table 4.2 and the figure 4.2 show that the total population of Kanyam VDC is 7581, among them, 64.7 percent of the female and 73.9 percent of the male is literate. Similarly, 34.0 percent of the female and 23.7 percent of the male is illiterate. Similarly, in Kanyam VDC 0.8 percent of the people have completed SLC level and, 0.6 percent Intermediate level, 0.4 percent Bachelor level, 0.1 percent Master level.

4.3.2. Literacy Status of Each Ward

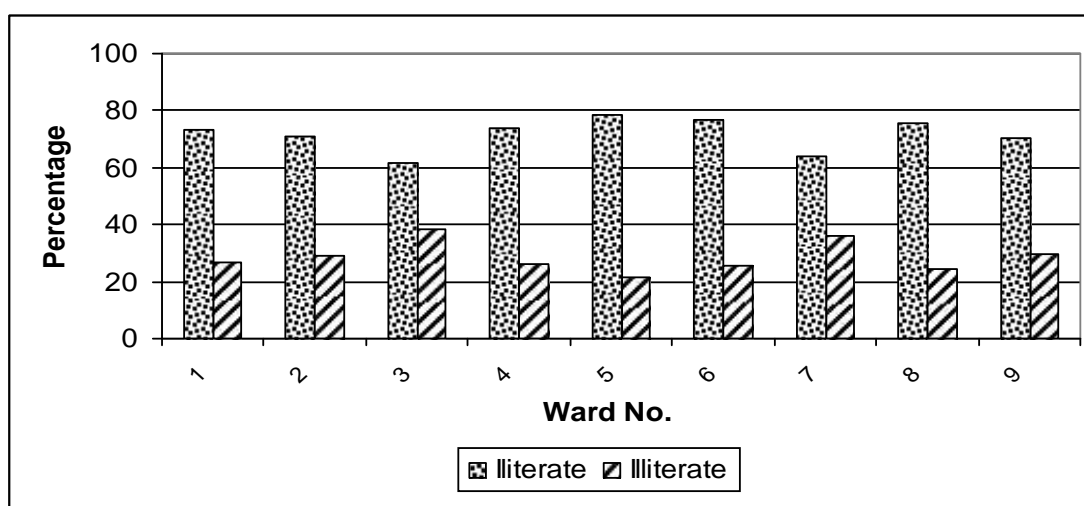
It seems that people of Kanyam VDC are highly conscious for their education. The total literate rate within Kanyam VDC is 69.3 percent. Among them, the people in ward no. 1, 4 and 8 are comparatively literate than other wards. The literacy percent of the VDC is highly far in the context of national literacy rate of Nepal.

Table 4.3: Literacy Status of Each Ward

W. N.	Total Population	Literate	%	Illiterate	%
1	1140	835	73.2	305	26.8
2	1035	734	70.9	301	29.1
3	653	403	61.7	250	38.3
4	1136	825	72.6	299	26.4
5	926	725	78.3	201	21.7
6	255	186	76.5	55	25.5
7	892	576	63.9	322	36.1
8	861	652	75.7	209	24.3
9	703	495	70.4	208	29.6
Total	7581	5431		2150	

Source: *Periodical Sustainable Development of Kanyam VDC*, NCDC, 2003

Figure 4.3: Literacy Status of Each Ward



Source: Based on the Table 4.3.

The above table 4.3 and the figure 4.3 show that ward no. 5 has the highest (78.3%) literate people and ward no 3 has the least (61.7 %) literate people in the VDC and ward no 1, 2, 4, 6, 7, 8, 9, has 73.2, 70.9, 72.6, 76.5, 63.9, 75.7, 70.4 literacy percent respectively.

4.4. Economic Condition

The major economic activity of the rural area is agriculture. Undoubtedly, the agriculture is the basic source of Kanyam VDC.

4.4.1. Occupational Structures

Agriculture is the basic source of rural economy. Out of the total economically active population, 93.1 percent people are engaged in agricultural activities and remaining 6.9 percent in non-agriculture activities in the study area. So, agriculture is the dominant economic activities of the people. It plays an important role in the economy of this VDC. Agriculture products are the main sources of income for maintaining the livelihood of the people. Several agriculture crops are grown in this study area like maize, rice, millet, wheat, etc.

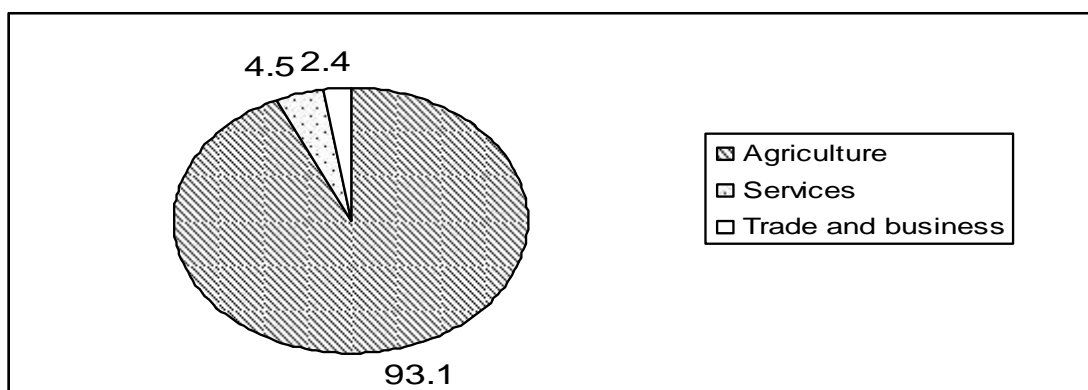
Tea is an important cash crop in this VDC. Other cash crops such as ginger, potato, cardamoms are also grown in negligible quantity. Among them, tea is the first ranking cash crop in the study area. It does not have to compete with cereal crops like rice, wheat and maize. It plays vital role in the economy of this VDC. The whole cropping pattern is an intensive subsistence nature. The smallholding due to the fragmentation and subdivision of the land, are dependant on monsoon rain. This is the basic characteristic of agriculture in Kanyam VDC.

Table 4.4: Occupational Structure

S.N.	Types	No. of households	Percent
1	Agriculture	1358	93.1
2	Services	66	4.5
3	Trade and business	35	2.4
Total		1459	100.00

Source: *Periodical Sustainable Development of Kanyam VDC*, NCDC, 2003.

Figure 4.4: Occupational Structure



Source: Based on the table 4.4.

The above table 4.4 and the figure 4.4 show that 4.5 percent people are engaged in the service sector. Among them, the majority people are engaged in teaching at the local schools. Besides this service, some people are involved in civil service. In the VDC, main trades are based on potato, ginger and cardamom, which are pertaining to the agricultural activities. This kind of trade has been going on with India for long. Among the households sampled so far, only 2.4 percent people are engaged in the trade and business.

4.4.2. Food Sufficiency Status

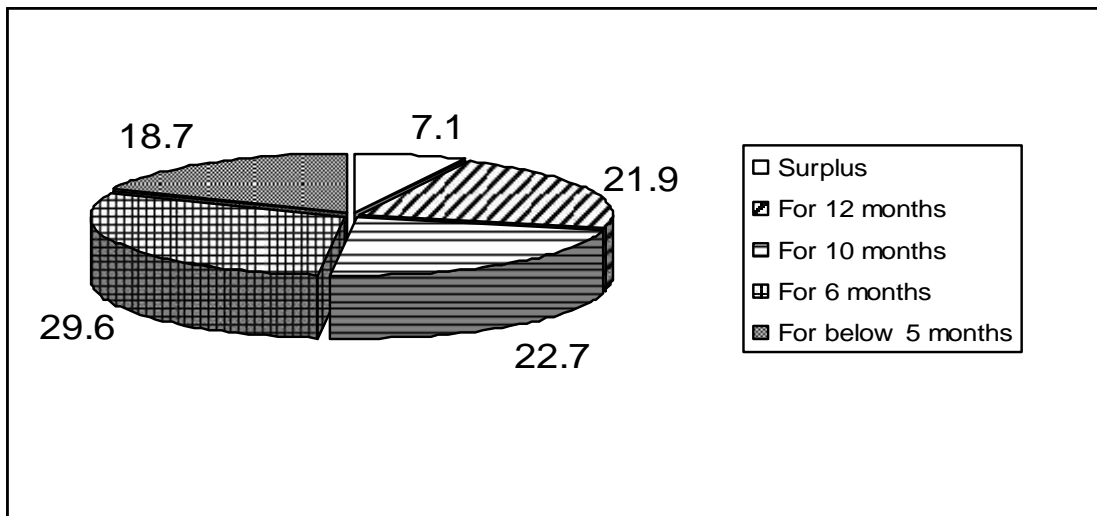
In Kanyam VDC, the yield from the agriculture land does not meet sufficient food requirement of the population. The food sufficiency condition of the households in the VDC is given below:

Table 4.5: Food Sufficiency Condition of the Households in the VDC

S.N.	Food sufficiency	No. of households	Percent
1	Surplus	104	7.2
2	For 12 months	320	21.9
3	For 10 months	330	22.7
4	For 6 months	431	29.6
5	For below 5 months	273	18.7
Total		1459	100.0

Source: *Periodical Sustainable Development of Kanyam VDC*, NCDC, 2003.

Figure 4.5: Food Sufficiency Condition of the Households in the VDC



Source: Based on the table 4.5.

The above table 4.5 and figure 4.5 indicate that only 7.2 percent of the total households are capable of selling their agriculture products and only 21.9 percent of the total households can fulfill for the whole year. Nearly, the half of the households in the VDC is suffering from food insufficiency for more than six month. Thus, people of Kanyam VDC depend on other sources to support their livelihood system.

CHAPTER V

TEA CULTIVATION IN KANYAM VDC

5.1. Background

Tea is the popular cash crop of the world. Now, the tea drinking tradition has been universal. Perhaps, there is no part left in the world today in where tea is unknown. However, the technique of taking tea differs from place to place. In the same way, the tea has become a very popular drink in Nepal for a long time. Before two decades, the tea was popular only in the hilly area of Nepal, but now it has popularity even in the Tarai too⁴.

At present, there are four types of tea produced in Nepal. They are as follows:

- a. Herbal tea
- b. Green tea (non fermentation)
- c. Oolong tea (partial fermentation)
- d. Black tea (fermented tea)

Black tea can be categorized in three parts. They are as follows:

- a. Orthodox
- b. CTC (Crush Tear and Curl)
- c. LTP (Lawrie Tea Processor)

Among them, CTC, orthodox and green teas are demanding in national and international market. Mainly, the CTC is produced in the Tarai. The orthodox and green tea are grown in the hilly areas only which are best for flavor and color to export.

Tea farming totally differs from fruit farming. Other crops like fruit and coffee are harvested once in a year. On the other hand, in case of tea plant, it is harvested from seven to eight months continuously in a year.

⁴ Damodar Gautam: *Project Report on expansion of tea areas*, NIDC P. Ltd., 1973, P. 1

5.2. Essential Condition for Tea Cultivation

Tea is mainly grown in the tropical and subtropical regions of the world. The following are the geographical limitations beyond which the cultivation of tea is almost impossible.

5.2.1. Topography

Tea farming can thrive both in hill and plain up to 2100m of altitude. Water lagging is very harmful for tea cultivation. So, tea cultivation prefers sloppy area. In the Tarai (Plain), tea can be cultivated where there is good drainage system.

5.2.2. Climate

Tea can best thrive in the tropical monsoon climate. It is grown in the period of 7-8 months and during this time, moderately high temperature about 20⁰c to 25⁰c and rainfall of about 150mm is favorable. Hailstone is highly injurious to tea plant. High range of temperature and frost also hamper tea plantation. Tea can grow in many areas where there is wet and warm climate.

5.2.3. Soil

Tea cultivation soil must be well drained. For rapid growth of tea plant, elements like phosphorus, potash, iron and nitrogen are essential in soil. Acidic soil is also suitable for tea.

In Nepal, instead of cultivated land, most forest and grazing land are used for tea cultivation. In this way, most of the tea cultivation is started in fertile and virgin land.

In fact, soil fertile condition of the tea cultivated land with almost similar climatic and soil condition extending from Darjeeling district of India has been decreasing day by day due the long time tea cultivation in this area. So, the cultivators annually use nitrogen, phosphorus and potash, because these chemical fertilizers help grow the plant rapidly. But, virgin soils need not chemical fertilizers.

5.2.4. Slope

Slope of the land is also prime physical determinant factors. Specially, it plays an influential role in farming system as agricultural land use pattern. Generally, slope has been categorized under the degree of various levels. Slope does not only contribute to cultivation inaccessibility, but also soil erosion and irrigation purpose. It also plays vital role in the process of formation of soil varying in degree of soil quality, soil level, soil variety, etc. The position of water level and air drainage is also determined by the nature of slope gradient. In the village, farmers perceive slope gradient very remarkably. Generally, gentle and moderate sloping lands are brought under tea cultivation.

5.2.5. Slope Aspect

Slope is also one of the important factors for the tea cultivation. The effect of slope aspect and farming system in the hill region is tremendous in regard to micro-climatic variation even in small area. Generally, slope aspect refers to the direction of the land exposure. Therefore, there is more or less on radiation input by various exposure of slope aspect. The aspect of slope plays the major role to distribution of tea cultivation land in the VDC.

5.2.6. Altitudinal Zone

Altitude is one of the more influential factors which determines different physical factor. The change in altitudinal zone makes differences especially in temperature, precipitation, wind, velocity, soil and relief. There are common factors in the altitude that differ from one place to another. The altitudinal variation plays significant role for production of tea. If the altitude is low, temperature is warm and the production becomes high. Similarly, if the altitude is high, the production of tea becomes low due to the cold temperature.

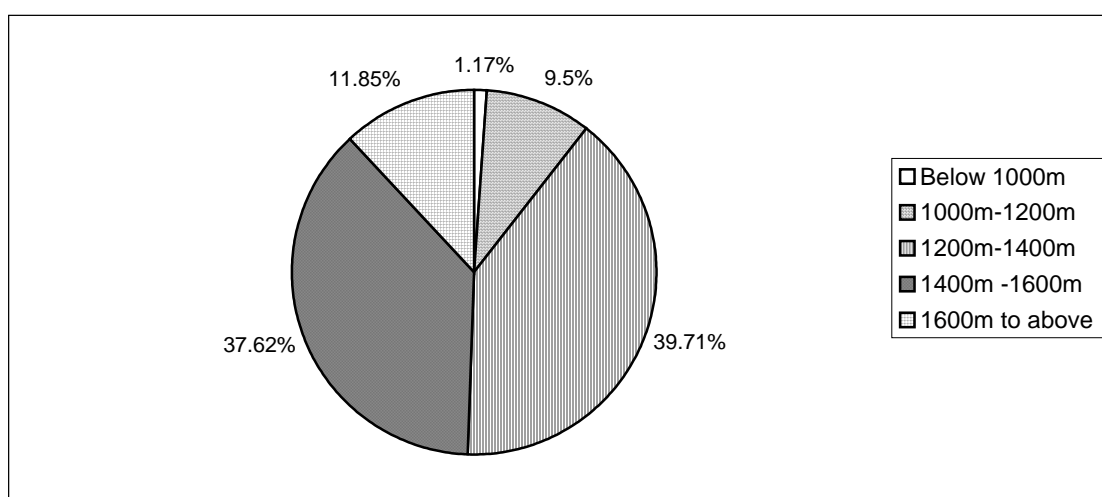
Different altitude regions also provide different options and facilities to human beings in the case of land use and other economic and social activities. Altitude ultimately brings change in geographic condition and difference in potentialities. The altitudinal area has been categorized in the five different altitudinal zones with every 200 meters interval of counter line.

Table 5.1: Altitudinal Zones of Kanyam VDC

S.N.	Altitude	Area in sq. km.	Percent
1	Below 1000m	0.33	1.17
2	1000m-1200m	2.72	9.5
3	1200m-1400m	11.19	39.71
4	1400m -1600m	10.60	37.62
5	1600m to above	3.34	11.85
Total		29.26	100.00

Source: *Periodical Sustainable Development of Kanyam VDC*, NCDC, 2003.

Figure 5.1: Altitudinal Zones of Kanyam VDC



Source: Based on the table 5.1.

The above table 5.1 and the figure 5.1 show that only 0.33 sq. km. (1.17%) of the total area is in below 1000m altitude. The altitude of 1000-

1200m is covered 2.72 sq. km., which is 9.65 percent of the total area. The large portion of land is under 1200-1200m altitude, which is 11.19 sq. km. (39.71%) of the total. Similarly, the second largest portion of the land is in between 1400-1600m altitude, the area is 10.60sq. km. and it covers 37.62 percent of the total area. Out of the total area, 3.34 sq. km. (11.85) of land is above 1600 meter. The altitude shows that there is very small portion of the land under 1000 meter is the study area. Tea cultivation has also been done above 1600 meter.

5.3. Tea Production in Nepal

There are two sectors involved for the production of tea in Nepal. They are (i) private (estate or company) and (ii) small holder. More than 60 private tea estates are expanded in Jhapa, Ilam, Panchthar, Tehrathum, Dhankuta and Morang districts. The third kinds of producers are farmers who depend on small farming development project. The project is implemented in Ilam (Jarbire, Fikkal and Mangalbare), Panchthar (Lalikharka), Tehrathum (Solam). After this step, tea production is rapidly increasing in farmer level.

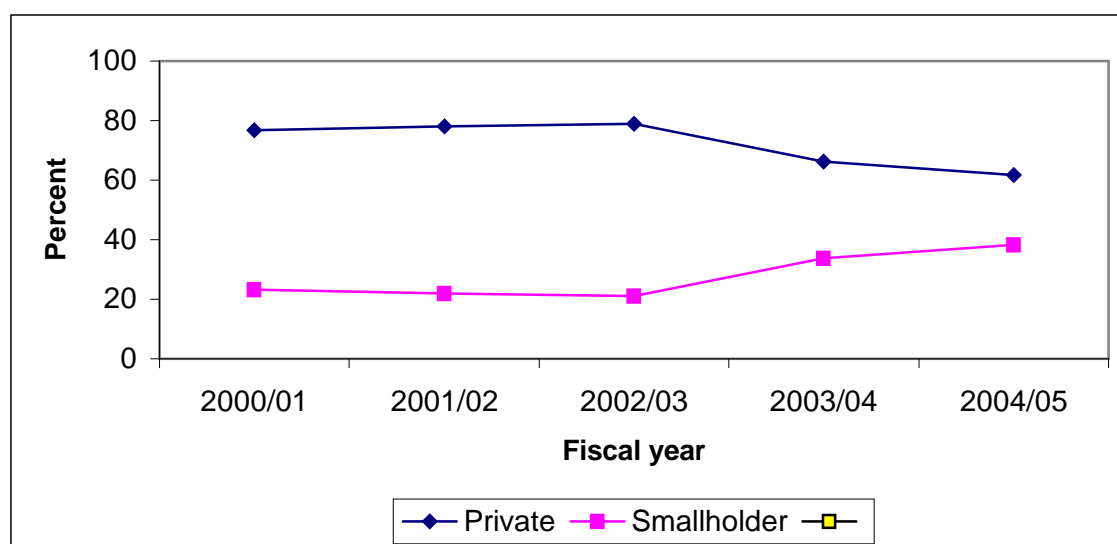
Private sectors are being more active than government sector in tea production. Accordingly, the government established Nepal Tea Development as tea entrepreneurs. After the establishment of government owned NTDC, there had been seven different tea estates expanded under it. But, those estates were privatized by government in the ninth five year plan. The private sector has established five different tea estates, namely, Budha Karan, Giribandhu, Himalaya, Satighatta and Mittal tea estate. The tea production of two sectors is given in the table 5.2 below:

Table 5.2: Total Tea Production in Different Sectors in Nepal

Fy	Private	Percent	NTDC	Percent	Smallholder	Percent	Total
2000/01	5089579	76.7	-	-	1548503	23.3	663882
2001/02	5864720	78.0	-	-	1653855	22.0	7518575
2002/03	6478000	79.0	-	-	1720000	21.0	8198000
2003/04	7714669	66.2	-	-	3956535	33.8	11651204
2004/05	7789893	61.8	-	-	4816188	38.2	12606081

Source: *Tea A Tea*, NTCDB, 2006.

Figure 5.2: Total Tea Production in Different Sectors



Source: Based on the table 5.2.

The above table 5.2 and the figure 5.2 show that the total production is continuously increasing due to privatization of NTDC, private and small holders.

5.4. Tea Cultivation Area in Nepal

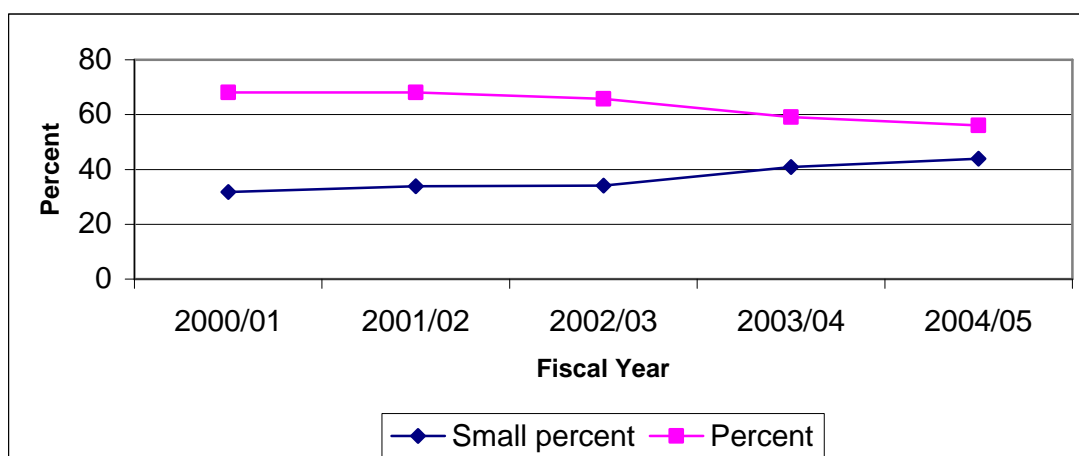
Tea cultivation has started in Nepal after the establishment of Ilam and Saktim tea estates. From that period, almost a century tea cultivation was hidden in our country. When private tea cultivation started in 1959, the tea cultivation increased rapidly. As a result, NTDC was established in 1964 to launch cultivation of tea in our country. Area under tea cultivation of private and smallholder is given in table 5.3.

Table 5.3: Area Under Tea Cultivation (in hector)

Fy	Private	Percent	NTDC	Percent	Small holder	Small percent	Total
2000/01	8179	68.1			3818	31.8	11997
2001/02	8179	68.1			4186	33.9	12346
2002/03	8321	65.8			4314	34.1	12643
2003/04	8869	59.1			61453	40.9	15012
2004/05	8911	56.1			6989	43.9	15900

Source: *Tea A Tea*, NTCDB, 2006.

Figure 5.3: Area Under Tea Cultivation



Source Based on the table 5.3.

The above table 5.3 and the figure 5.3 show that private sector has used more land than others have. Private sectors are in the first position and smallholders are in the second position in terms of land under tea cultivation. Comparatively, private and smallholder tea cultivation is increasing in every year.

5.5. Changing Trend of Tea Cultivation

Tea cultivation is a popular for a long. So, it is not a new practice in Kanyam VDC. Kanyam Development Corporation was started in 2028BS although in local level there is not actual record. According to

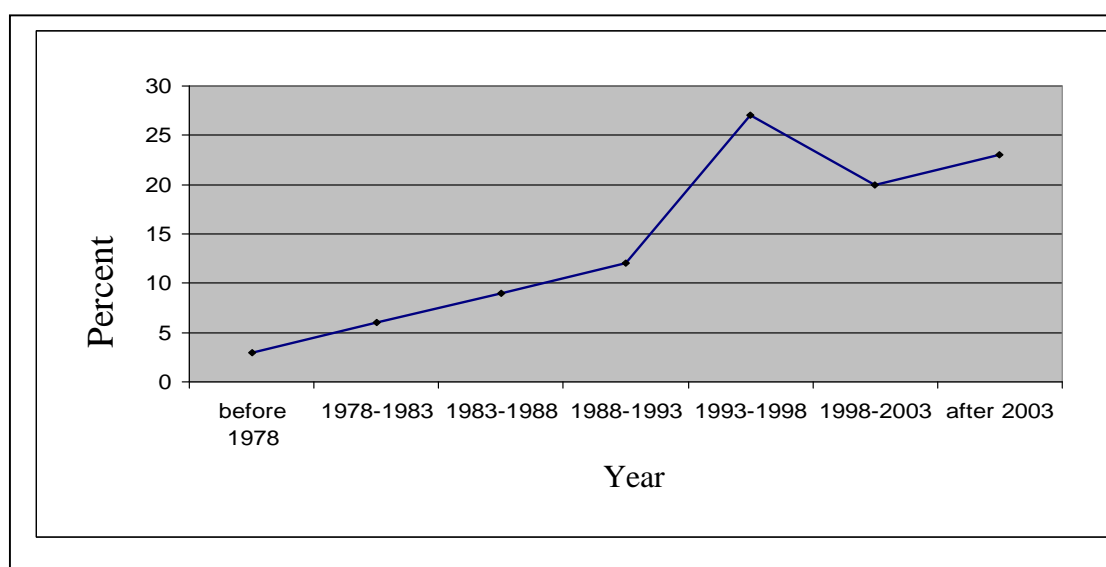
field survey report tea cultivation had been started before 2032 BS. Tea cultivation trends are presented in the table below.

Table 5.4: Changing Trend of Tea Cultivation

Year	Additional Household	Cumulative Status	Additional Percent
Before 1978	16	16	3
1978-1983	32	48	6
1983-1988	48	96	9
1988-1993	66	162	12
1993-1998	143	305	27
1998-2003	107	412	20
After 2003	123	535	23
Total	535		100

Source: Field survey, 2006.

Figure 5.4: Changing Trend of Tea Cultivation



Source: Based on the table 5.4.

According to the above table 5.4 and the figure 5.4, there were only three tea cultivators in Kanyam VDC before 1978. Only 6 percent farmers started to cultivate tea in the period of 1978-1983. After then, due to the knowledge, market and fitted geographical condition farmers were more interested in tea cultivation. Tea cultivation was widely occupied after the decade of 1983-1988, 1988-1993, 1998-2003 and after 2003, respectively 9, 12, 27, 20 and 23 percent of which is remarkable trend of tea cultivation in Kanyam VDC.

5.6. Spatial Distribution of Tea

Tea cultivation is familiar in the eastern part of Nepal. It is cultivated in Ilam, Jhapa, Panchthar, Dhankuta and Tehrathum districts. Among them, Ilam has the apex position for tea cultivation.

Geographically, all part of Ilam district is suitable for tea cultivation. Mainly, Kanyam, Fikkal, Panchkanya, Kolbung, Samalbong, Shree Antu, Laxmipur, Boudhadham, Danabari and Ilam municipality are the leading areas of the Ilam district.

Although, Kanyam is one of the famous VDCs for tea not only in Ilam, but also in Nepal. Tea cultivation is not evenly distributed here; it is concentrated in certain areas in the Kanyam VDC. Especially, it has been cultivated in these areas where there is adequate physical as well as social awareness about tea.

5.6.1. Wardwise Distribution

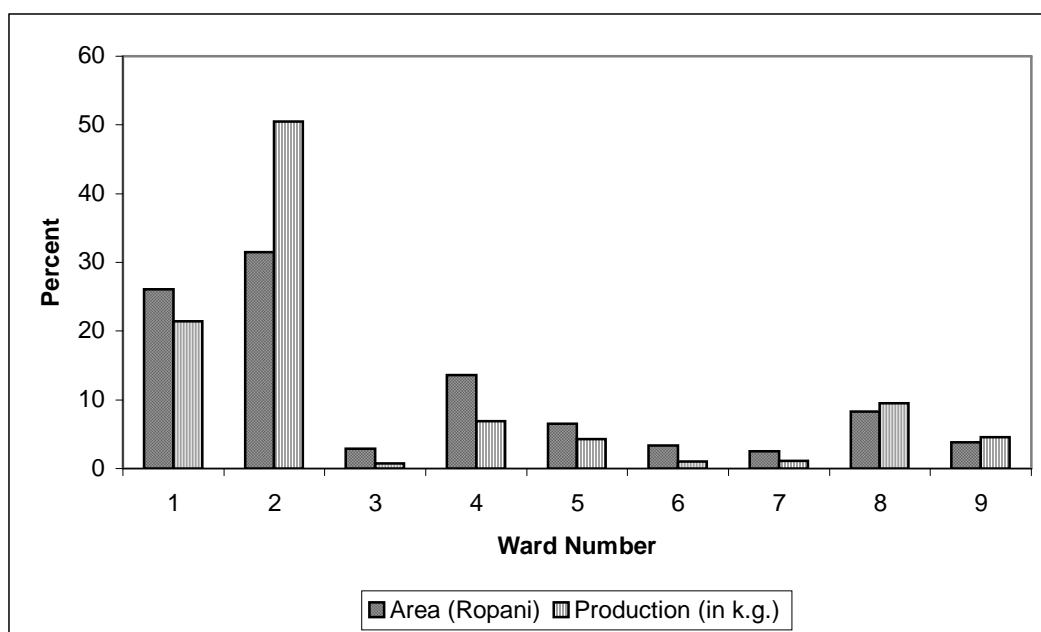
Tea cultivation is not equally distributed in every ward of Kanyam VDC. Wardwise distribution of tea cultivation area and production are given below:

Table 5.5: Wardwise Distribution of Tea

Ward No.	Household	Area (Ropani)	Percent	Production (in kg.)	Percent
1	119	1260.5	26.1	120626	21.4
2	114	1525	31.5	285548	50.5
3	42	140	2.9	3681	0.7
4	65	631	13.6	39030	6.9
5	56	305	6.5	24520	4.3
6	26	160	3.4	5502	1.0
7	16	121	2.5	5954	1.1
8	58	399	8.3	5365	9.5
9	39	284	3.8	2665	4.6
Total	535	4839.5	100	564577	100

Source: Field survey, 2006.

Figure 5.5: Wardwise Distribution of Tea Cultivation



Source: Based on the table 5.5.

In the above table 5.5 and figure 5.5, ward no. 2 covers the largest area of tea cultivation and production having 31.5 percent tea cultivated area and 50.5 percent production. It has the highest land utilized for tea in Kanyam VDC. On the other hand, ward no. 7 covers 2.5 percent tea cultivation area and 1.1 percent production. It shows that the ward no. 7 is poor in tea cultivation and the ward no. 3 is poor in tea production.

5.7. Farm Size, Production and Productivity of Tea

The important factor of farming is the size of land which influences the farmer's decision regarding agricultural activity and determining his income from farming. It also determines the volume of agriculture yield, production and productivity of the land. There are different sizes of tea plantation in Kanyam VDC. Most of the tea farms are very small in size and in range of 5-10 Ropani. According to the farm size, they have been categorized into four groups, which are given in the table below:

Table 5.6: Farm Size and Productivity of Tea by Sampled Households

Farm size in ropani	Total area in ropani	No. of household	Percent	Average farm size	Production (in kg.)	Productivity (per Ropani)
0-5	1140.5	250	46.3	4.6	167000	146.2
5-10	1770	158	29.5	11.2	192000	108.5
10-15	730	56	11.0	13.0	90000	123.3
15-20	689	40	7.5	17.2	65000	94.3
Above 20	510	31	5.7	16.5	50577	99.1
Total	4839.5	535	100	62.5	564577	571.4

Source: Field survey, 2006.

The table 5.6 shows that 46.3 percent household whose farm size is less than 5 ropani under tea cultivation. The average farm size of this category is 4.6 ropani. Number of household having 5-10 ropani of land is 29.5 percent of the total households. Average farm size of this group is 11.2 ropani. Similarly, the number of households having 10-15 ropani and above 20 ropani of the land under tea cultivation is 11 percent, 7.5 percent and 5.7 percent respectively. Average farm size of these groups is 13.0, 17.2 and 16.5 ropani respectively. This table also indicates that the productivity of the tea is highest among the farmers who have the area upto 10 ropani of the land which yield maximum return as compared to the other farm size. However, the middle size of tea farming is suitable for more productivity and technical sufficiency.

5.8. Changing Pattern in Area and Production of Tea in the Study Area

Tea cultivation of the study area has increased by the result of increasing market price and physical suitability. The farmers are continuously expanding tea cultivation. The changing trends of tea cultivation are given in the table below:

Table 5.7: Area and Production of Tea by Sampled Households

Fy	Area in ropani	Absolute change in %	Production in kg.	Absolute change in %	Productivity (per Ropani)
2001/02	4450	-	495000	-	111.2
2002/03	4600	3.1	550020	9.7	119.6
2003/04	4760	3.3	559500	1.7	117.5
2004/05	4800	0.1	560000	0.1	116.7
2005/06	4839.5	0.1	564577	0.1	116.6

Source: Field survey, 2006.

According to the above table 5.7, in the fiscal year 2001/02 the area under tea cultivation was 4450 ropani and productivity was 111.2 kg. per ropani. In 2002/03, the total area under cultivation increased to 4600 ropani and absolute change was 3.1 percent. Similarly, production also increased from 495000 kg. to 550020 kg. in this year.

In the year 2003/04, the area under tea cultivation was 4760 ropani, but the production increased by 1.7 percent and productivity increased by 119.6 kg. in this year.

Fiscal year fiscal year 2004/05 and 2005/06, tea cultivation has stagnated because of so many factors, which brought low cultivation and production. Among them, lack of market competition causes price reduction. Political instability hinders the access of the raw materials for

tea from getting to the tea factory that helps promote depression of tea cultivators.

5.9. Land Use Change in Kanyam VDC by Tea Cultivation

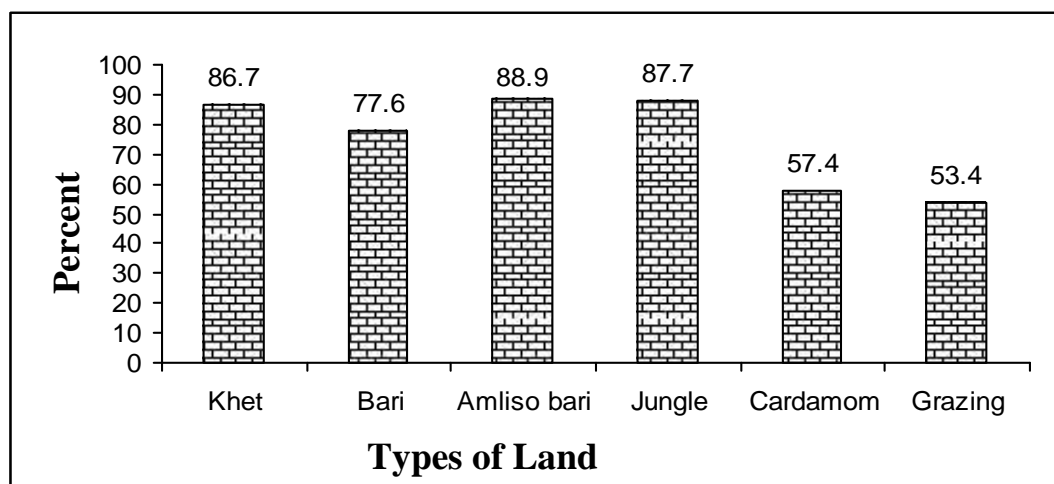
Tea cultivation land is rapidly changing in Kanyam VDC for 20 years. Most of the farmers have been changing their khet, bari, amliso bari and jungle for tea plantation. So, there is drastic change in land by tea cultivation which is shown in the table below:

Table 5.8: Land Changed by Tea Cultivation

S.N.	Types of land	Before tea cultivation in ropani	After tea cultivation	Tea Cultivation	Percent of the change
1	Khet	9784	8487	1297	86.7
2	Bari	4799.5	3724.5	1075	77.6
3	Amliso bari	9068	8063	1005	88.9
4	Jungle	1782	1259	523	87.7
5	Cardamom	5850.5	5361	489.5	57.4
6	Grazing	966	516	450	53.4
Total		32250	27410.5	4839.5	

Source: Field survey, 2006.

Figure 5.6: Land Use by Tea Plantation



Source: Based on the table 5.8.

The above table 5.8 and the figure 5.6 show that 86.7 percent of khet is changed by tea cultivation and 53.4 percent of grazing land is changed by tea cultivation. Similarly, 77.6, 88.9, 70.7 and 57.4 percent of bari, amlisobari, jungle, and cardamom land are changed by tea plantation area respectively.

5.10. Price Parity of Tea, Ginger and Cardamom and Area under Cultivation

Price parity is an important element of cultivation, which helps determine to select high return from different cultivations, and it also helps improve economic status of cultivators which are given below.

Table 5.9: Price Parity of Tea, Ginger and Cardamom and Area under Cultivation

FY	Average price of Tea (greenleaf) per kg.	Average price of Ginger per kg.	Average price of Cardamom per kg.	Price ratio of Tea, Ginger and Cardamom	Area under Tea cultivation (in ropani)	Area under Ginger cultivation (in ropani)	Area under Cardamom cultivation (in ropani)
2001/02	20	10	212	10:5:106	4450	975	5850.5
2002/03	18	10	212	9:5:106	4600	975	5655
2003/04	16	8	187	16:8:187	4760	850	5557
2004/05	15	7	125	15:7:125	4800	630	5459
2005/06	15	8	175	15:8:175	4839.5	630	5361

Source: Field Survey, 2006.

The above table 5.9 shows that in FY 2001/02 the average price of greenleaf was Rs. 20 per kg. which is the highest price up to 2005/06 and FY 2004/05 and 2005/06 seem the price constant.

In the FY 2001/02 and 2002/03, the average price of ginger was Rs. 10 per kg. which indicates the highest price up to 2005/06 and in FY 2004/05 the price of ginger was Rs. 7 per kg. which indicates the lowest price up to 2005/06.

In the FY 2001/02 and 2002/03, the average price of cardamom was Rs. 212 per kg. which indicates the highest price up to 2005/06 and in FY 2004/05 the average price of cardamom was Rs. 125 per kg. which is the lowest price up to 2005/06.

Price ration of per kg. in the FY 2001/02, 2002/03, 2003/04, 2004/05 and 2005/06 is 10:5:106, 9:5:106, 16:8:187, 15:7:125 and 15:8:175 respectively.

Area under tea in the FY 2001/02, 2002/03, 2003/04, 2004/05 and 2005/06 is 4450, 4600, 4760, 4800 and 4839.5 respectively.

Area under ginger in the FY 2002/03, 2003/04, 2004/05 and 2005/06 is 975, 975, 850, 630 and 630 respectively.

Area under cardamom in the FY 2002/03, 2003/04, 2004/05 and 2005/06 is 5850, 5655, 5557, 5459 and 5361 respectively.

Field survey also shows that the trend of tea cultivation gradually increasing and others are decreasing due to the higher returns of tea but cultivators of the cardamom are replacing tea due to the non-curable disease (Furke).

5.11 Cost and Its Return of Different Cultivations

Cost and return analysis is necessary in the economic point of view if there is higher cost than the return, cultivators do stop their farming and if the higher return, cultivators become encouraged to more cultivation and more production themselves. Some competitive cultivation and its returns are given below.

Table 5.10: Cost of Tea Cultivation (NRs./per ropani)

SN	Components	Cost
1.	Land preparation	480
2.	Plants	1400
3.	Chemical fertilizers	720
4.	Insecticide	150
5.	Weeding	240
6.	Harvesting	1500
7.	Transportation	625
Total Cost		5115
Average production of tea (per ropani in kg.)		415
Average price of tea (Rs. per kg.)		15
Total return		6750
Net return		1110

Source: Field Survey, 2006.

The above table 5.10 shows that the total cost of cultivation is Rs. 5115 and the total return is 6225 and its net return is Rs. 1110.

Table 5.11: Cost of Ginger Cultivation (NRs. per ropani)

SN	Components	Cost
1.	Land preparation	720
2.	Seeds	3000
3.	Weeding	650
4.	Insecticide	175
5.	Harvesting	240
Total cost		4785
Average production of ginger (per ropani in kg.)		720
Average price of ginger (Rs. per kg.)		8
Total return		5760
Net return		975

Source: Field Survey, 2006.

The above table 5.11 shows that the total cost of ginger production is Rs. 4785 and total return of the ginger production is Rs. 5760 and the net return of the ginger production is Rs. 975.

Table 5.12: Cost of Cardamom Cultivation

SN	Components	Cost
1.	Land preparation	240
2.	Plantation	900
3.	Weeding	550
4.	Harvesting	660
Total cost		2350
Average production of cardamom (per ropani in kg.)		35
Average price of cardamom (Rs. per kg.)		175
Total return		6125
Net return		3775

Source: Field Survey, 2006.

The above table 5.12 shows that the total cost of cardamom production is Rs. 2350 and the total return of cardamom is Rs. 6125 and the net return of cardamom production is Rs. 3775.

5.12 Comparative Cost of Production of Tea, Ginger and Cardamom

Cost is a determining factor in cultivation. Therefore, cultivators get encouraged or discouraged on the basis of cost and return of the production. Comparative cost structure of different cultivation is given below.

Table 5.13: Comparative Cost of Tea, Ginger and Cardamom (NRs. per ropani)

SN	Total	Tea	Ginger	Cardamom
1.	Total cost	5115	4785	2350
2.	Average production (per ropani in kg.)	415	720	35
3.	Average price (Rs. per kg.)	15	8	175
4.	Total return	6225	5760	6125
5.	Net return	1110	975	3775
6.	Cost per kg. (Break even point per kg.)	11	7	67

Source: Field Survey, 2006.

The above table 5.13 shows that the cultivation highest position in cost of production which is Rs. 5115 and the cardamom cultivation is lowest position in the cost of production which is Rs. 2350 and the ginger cultivation is in second position in the cost of production which is Rs. 4785.

The highest net return from cardamom production is Rs. 3775, the lowest net return from the ginger cultivation is Rs. 975, and the tea cultivation is in the second position, which is Rs. 1110.

Cardamom is the highest position in the average price with Rs. 175 and the ginger is in the lowest position with Rs. 8 and the tea is in the second position with Rs. 15.

Cardamom is in the highest position in the cost of production with Rs. 67 per kg. and the ginger is in the lowest position with Rs. 7 and the tea is in the second position with Rs. 11.

5.13 Factors Influencing Tea, Ginger and Cardamom Cultivation

There are many influencing factors in the cultivation, which are playing crucial role in the cultivation and production. Therefore, here are

mentioned only common influencing factors of tea, ginger and cardamom cultivation, which are as follows.

- 1. Market Price:** Price is a main factor determining the production in the market, which is playing vital role for determining the future of different cultivations. Therefore, its changing behavior is creating uncertainty in the field of tea, ginger and cardamom.
- 2. Technical Support:** Technical support also plays significant role for improvement of cultivation and production, but there is not any government and non-government institution for providing support in the study area. So, tea, ginger and cardamom cultivation is being influenced by this.
- 3. Financial Support:** It is another important factor of different cultivations, which helps to systematic cultivations, expanding the production and market promotion. But, there is not any government and non-government institution in the study area, so farmers of tea, ginger and cardamom are depending on the local money lenders in high rate of interest.
- 4. Government Policy:** Nepal as a developing country based on agriculture, here the effective policy akin to agriculture is necessary for changing of the traditional farming into modern agriculture farming along with contributing to the economic development. However, in our country, such kind of effective agriculture policy and package programs has not been initiated yet and what has already been in existence could not touch the ground of the rural area, which has affected to expanding and promoting of the agriculture development.

These are main factors that influence the cultivation and production of tea, ginger and cardamom. Among them, the changing nature of market price is major influencing factor in the field of tea and ginger cultivation.

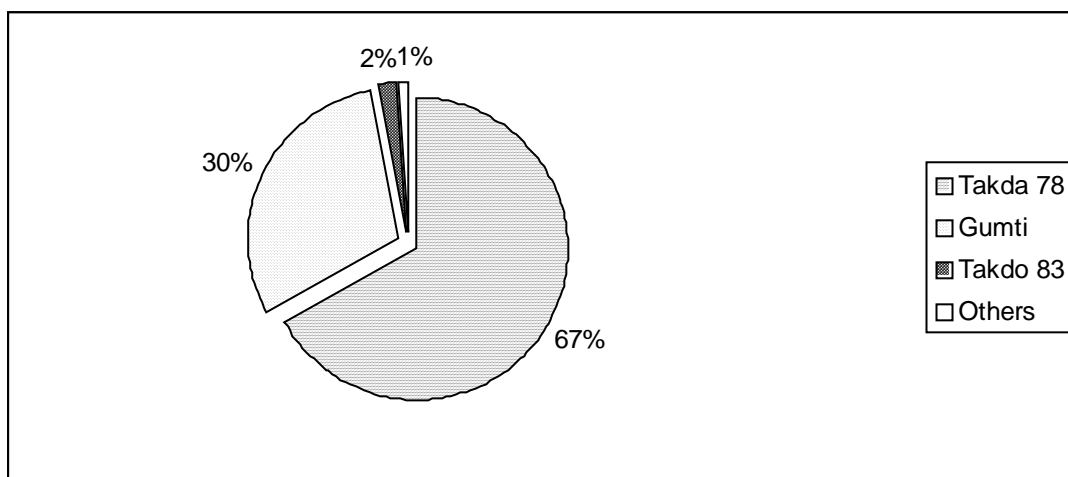
5.14. Kinds of Tea Plant

There are different types of tea plant planted in Kanyam VDC. There are mostly planted Chinese origin plant on the basis of colour and flavour of orthodox tea. Here, some selected plant names are given below:

- a. Takda 78
- b. Gumti
- c. Takda 83
- d. Fubshiring
- e. Tarapur
- f. Benek bone
- g. Aambadi

Tea plants planted mostly in the Kanyam VDC are presented below in the figure:

Figure 5.7: Kinds of Tea Plant



Source: Field survey, 2006.

According to the above figure 5.7, among the tea-cultivated land, Takda 78 covers sixty-seven percent, Gumti twenty percent, Takda 83 two percent and other one percent.

5.15. Manuring of Tea Cultivation

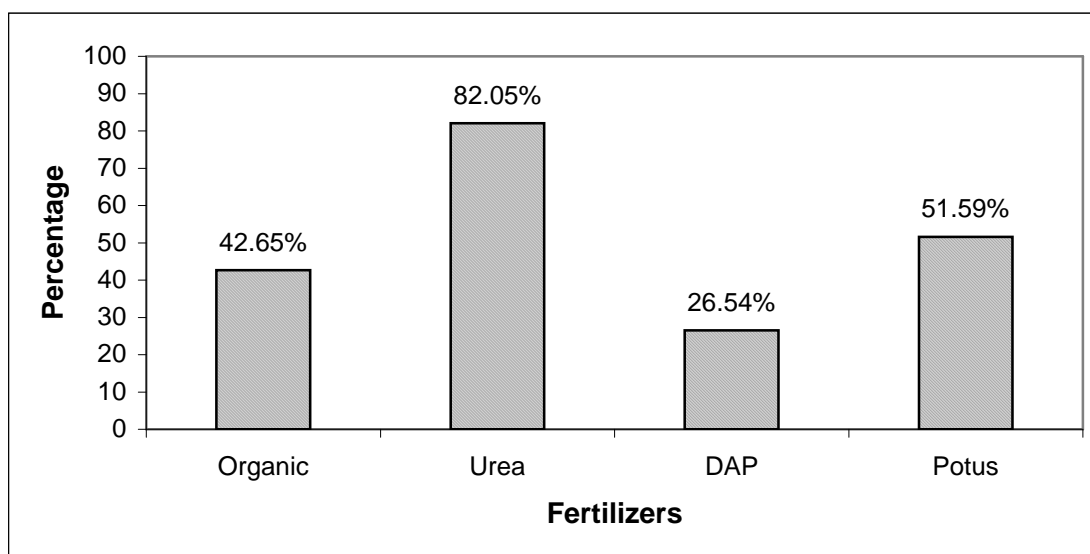
Manuring system or method is not balanced in Kanyam VDC. Technically, manuring should be balanced for cultivation for good production, and long life of tea plant. Here is given recent manuring of tea cultivation in the table below.

Table 5.14: Different Manuring Users of Tea Cultivation

S.N.	Fertilizers	Users no.	Percent
1	Organic	230	42.65
2	Urea	440	82.05
3	DAP	250	26.54
4	Potus	270	51.59

Source: Field survey, 2006.

Figure 5.8: Different Manuring Users of Tea Cultivation



Source: Based on the table 5.9.

In Kanyam VDC, it is found that the use of fertilizer viz. potash DAP and organic are used in percent 82.05, 51.59, 42.05 and 26.54 respectively. This shows unbalanced usage of fertilizer according to tea technician.

5.16. Kinds of Diseases

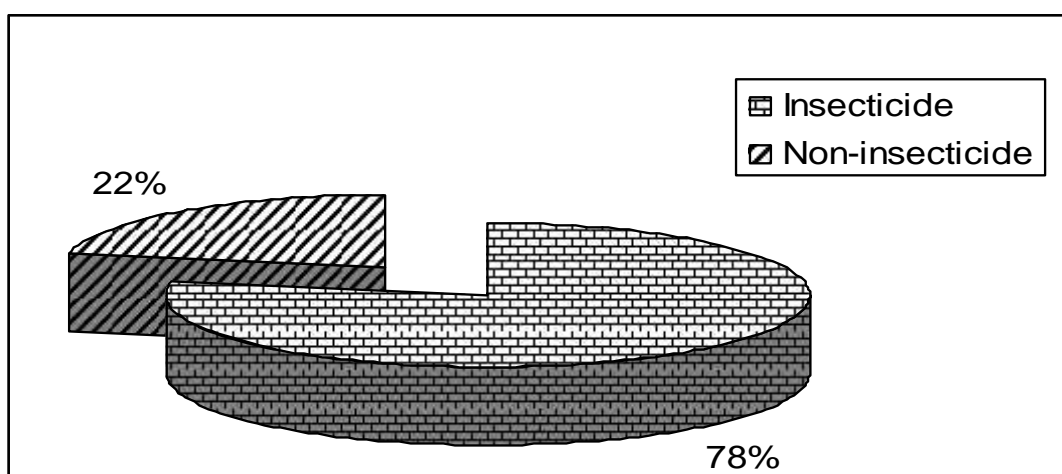
There are some specific diseases in tea cultivation, which cause reduce production. So, it should be identified in time. Some diseases are related to tea cultivation which is as follows:

- a. Blister Blight
- b. Helopeltise
- c. Fusarium
- d. Thrips/Tassids
- e. Red Spider
- f. Cockehater

5.17. Use of Chemical Insecticide

Tea cultivation is one of the main cash earnings of Kanyam VDC. There are different kinds of insecticides used for protection. In tea cultivation, use of insecticide is necessary for controlling of diseases. For disease control, 78% chemical insecticide is used in Kanyam VDC and only 22% farmers do not use chemical insecticide.

Figure 5.9: Use of Chemical Insecticide



Source: Field survey, 2006.

The above figure 5.9 shows that 78 percent chemical insecticide used in tea cultivation and 22 percent non-insecticide tea cultivation in Kanyam VDC.

5.18. Market of Green Leaf

All tea cultivators sell fresh green leaf in different manufacturing factories. Only in few percent of green leaf is manufactured by domestic method. Main market of green leaf is given below:

- a. Small tea producer P. Ltd. Dactarkhala Fikkal.
- b. Ilam tea producer P. Ltd. Tinghare
- c. Hill range P. Ltd. Chippitar Fikkal.
- d. Gurase tea industries P. Ltd. Dhankuta
- e. India

CHAPTER VI

PROBLEMS AND PROSPECTS OF TEA CULTIVATION IN KANYAM VDC

Nepal is agro-based economy and its future depends on scientific farming. The economic development is interrelated with the development of agriculture. However, the condition of agriculture is far from satisfactory in present. So, Nepalese agriculture is still suffering from multiple problems like technical knowledge, irrigation, transportation, etc.

Kanyam VDC is also agro-based economy dominated by cash crops cultivation. However, the satisfactory production of cash crops is hampered by the technological and other proper knowledge of the villager. In different aspects, based on the field survey, the farmers are facing basic problems in tea cultivation in the Kanyam VDC. Out of the total sampled households, the following numbers of respondents pointed out the following main problems which are related with the tea cultivation.

- Lack of Technical knowledge
- Lack of Pesticide and insecticide
- Lack of Labour supply
- Lack of Chemical fertilizer
- Lack of Established markets
- Inadequate Irrigation
- Lack of Tea factory in local level
- Lack of Market competition
- Lack of Revaluation of tea cultivated land
- Insufficiency of government policy.
- Lack of Transportation
- Political instability

As mentioned above problems of tea cultivation in Kanyam, we can divide into two categories. They are 1. policy problems, 2 technical problems.

6.1. Policy Problems

There are certain policy problems in tea cultivation which are playing significant role for decreasing of tea cultivation and its production. So, it is standing as a main problem, which can be described as follows:

1.1. Insufficiency of Government Policy

1.2. Lack of revaluation of tea cultivated land

1.3. Political instability

6.1.1. Insufficiency of Government Policy

Nepal is recognized as an agricultural country. So, there should be basic policy for agriculture development. Government policy was appeared in 2057 BS which is insufficient to tea export and tea expansion. It is also not clear about price determination and subsidy providing to farmers of tea. Now, it is standing as a problem.

6.1.2. Revaluation of Tea Cultivated Land

In present time, most of the tea cultivators are suffering from the revaluation of tea land. There is no difference between tea cultivated land and non-tea cultivated land. Government has not taken any interest towards revaluation of land and it is hampering to other economic activities. So, it is recognized as a significant problem in the Kanyam VDC.

6.1.3. Political Instability

After 2050 BS, the political situation remains unstable. Due to the frequent strike, tea production is hampered from getting market. The strike set by the political organizations along with its brotherhood and sisterhood organizations has affected the work in tea field market of it.

This kind of activity has hampered not only recent tea production, but also tea production of the whole year. So, it is recognized as a significant problem in the Kanyam those who are related to tea cultivation.

These basic problems are mainly concerned with the government and related institution (NTCDB) than tea farmers. So, it has hampered for all tea farmers not only in Kanyam VDC but others either. In this way, these kinds of problems cannot be solved by local level.

6.2. Technical Problems

There are certain technical problems for improvement in tea cultivation. For this, only tea specialists can provide suggestions and technical information. In this context, specialists are not available for getting technical knowledge and support in local level. The identified technical problems are as follows:

1. Lack of technical knowledge
2. Lack of insecticide and pesticide.
3. Lack of well trained labour supply
4. Lack of chemical fertilizer
5. Lack of established market.
6. Lack of adequate irrigation
7. Lack of market competition
8. Lack of transportation

6.2.1. Lack of Technical Knowledge

The lack of technical knowledge is a major problem for the tea cultivation in Kanyam VDC. This aspect is mainly concerned with government service and other associate agencies. But, there are not adequate technical suggestions, training and knowledge for supporting tea cultivation. Technical knowledge existing at present situation is as follows:

Table 6.1: Present Position of Technical Knowledge

S.N.	Institute	Total tech. H.H.	Trained	Percent
1	HOTPA Fikkal	535	70	13.08
2	Small tea expansion programme Fikkal		30	5.60
3	Others		10	1.86
Total		535	110	20.56

Source: Field survey, 2006.

The above table 6.1 shows that there is only 20.55 percent farmers who obtain technical knowledge and 79.54 percent farmers are out of it in the Kanyam VDC.

6.2.2. Lack of Pesticide and Insecticide

Due to the lack of proper knowledge on pesticide and insecticide, farmers do not know about using new input of cultivation like fertilizer and insecticide. In the study area, most of the farmers are suffering from insect and plant disease due to the lack of proper knowledge about these. This kind of phenomena has caused production decreased. At present, existing situation of information on pesticide and insecticide are as follows:

Table 6.2: Present Position of Pesticide and Insecticide

S.N.	Institute	Total tea HH	Proper users	Percent
1	Baral agro-vate, Kanyam	535	55	10.28
2	Pradhan		20	5.73
3	Negen		15	2.80
4	Others		5	0.93
Total		535	95	17.74

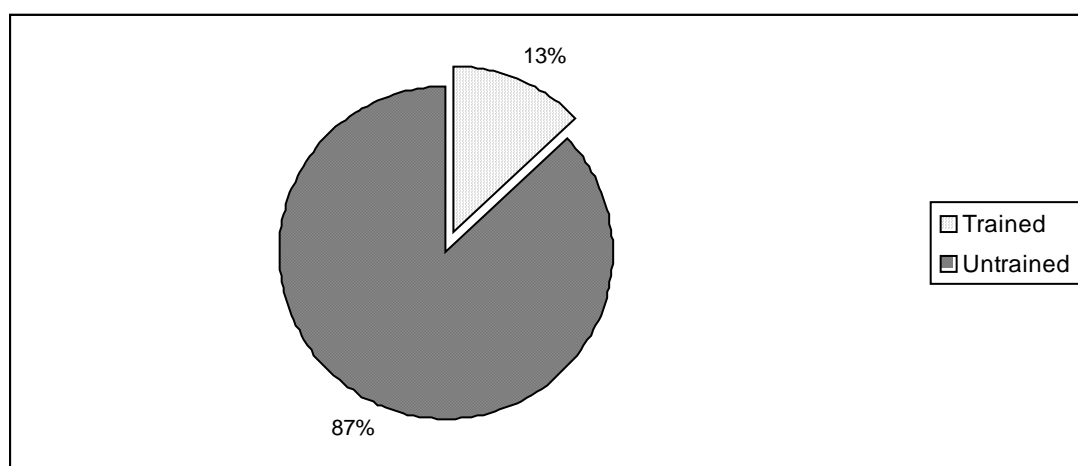
Source: Field Survey, 2006.

The above table 6.2 shows only 17.74 percent tea cultivators can proper use insecticide, and 82.26 percent cultivators have no idea about using insecticide.

6.2.3. Lack of Well-trained Labour Supply

Lack of well-trained labour supply is also one of the main problems for tea cultivators of the study area. Specially, these kinds of phenomena such as time of cutting, harvesting, plantation and manuring require well-trained labour supply. Therefore, there lacks the well-trained labour for supporting the tea production and expansion for tea cultivation. The pie-diagram presented below shows the condition of the lack of well-trained labour supply.

Figure 6.1: Present Position of Well-Trained Labour



Source: Field survey, 2006.

The above figure 6.1 displays 2.56 percent labor is well-trained because 110 tea cultivators have already received training on it (see in the table 6.1). On the other hand, 79.44 percent of the tea cultivators are out of this training.

6.2.4. Lack of Chemical Fertilizer

Lack of availability of chemical fertilizer is also one of the major problems for tea cultivators. In the study area, farmers are suffering from the lack of proper and required quantity and quality of fertilizer for tea

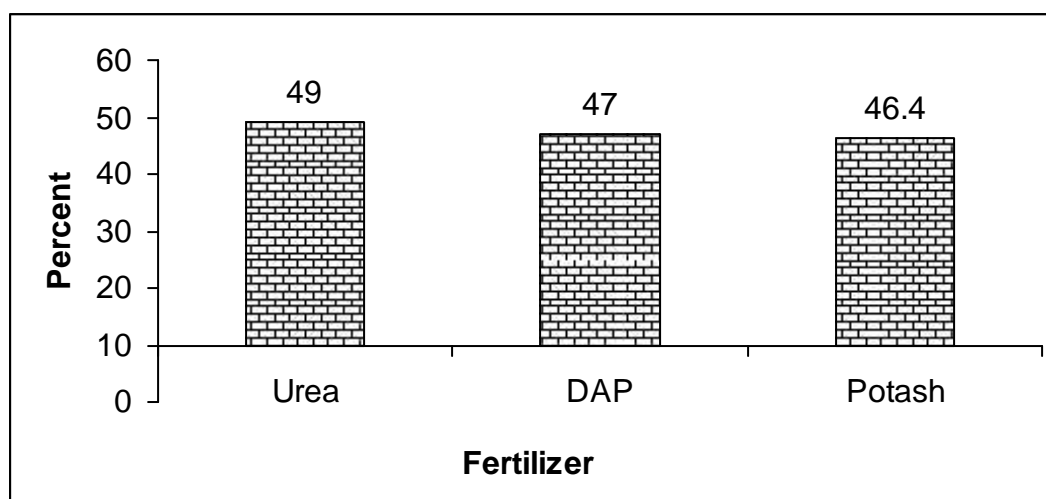
production. Due to this cause, the tea production is decreased. The present situation of fertilizer used and available is given below in the table 6.3:

Table 6.3: Present Position of Chemical Fertilizer

S.N.	Fertilizer	Requirement in kg.	Availability in kg.	Percentage of Availability
1	Urea	193560	95000	49.0
2	DAP	96780	45500	47.0
3	Potash	96780	45000	46.4
Total		387120	185000	47.8

Source: Field survey, 2006.

Figure 6.2: Present Position of Chemical Fertilizer



Source: Based on the table 6.3.

The above table 6.3 and the figure 6.2 show that there is 47.8 percent chemical fertilizer available in the Kanyam VDC and 52.2 percent is unavailable for tea cultivation.

6.2.5. Lack of Established Market

Lack of established market is also another problem of study area. Due to this problem, farmers are not getting market facilities in local area for sale of green leaf. This has caused farmers earnings going downward.

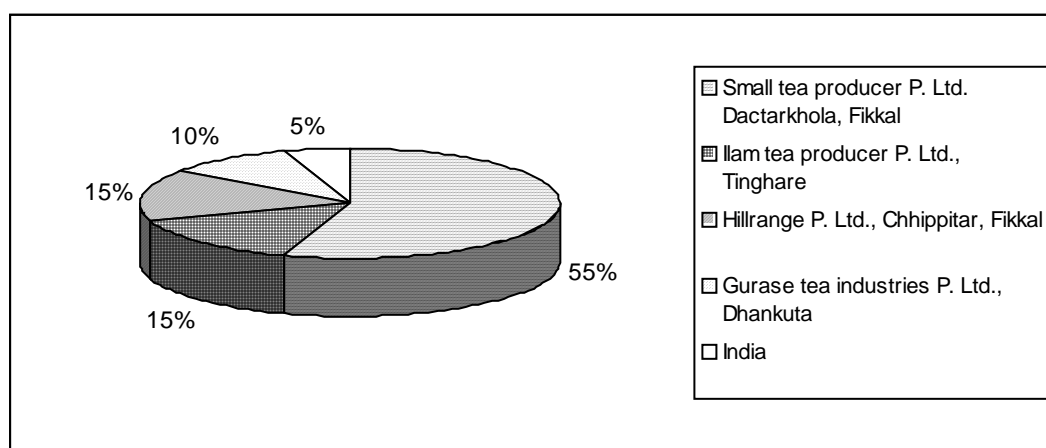
The present existing situation of green leaf market is presented below in the table 6.4:

Table 6.4: Present Position of Established Market

S.N.	Factory	Percent
1	Small tea producer P. Ltd. Dactarkhola, Fikkal	55
2	Ilam tea producer P. Ltd., Tinghare	15
3	Hillrange P. Ltd., Chhipitar, Fikkal	15
4	Gurase tea industries P. Ltd., Dhankuta	10
5	India	5
Total		100

Source: Field Survey, 2006.

Figure 6.3: Present Position of Established Market



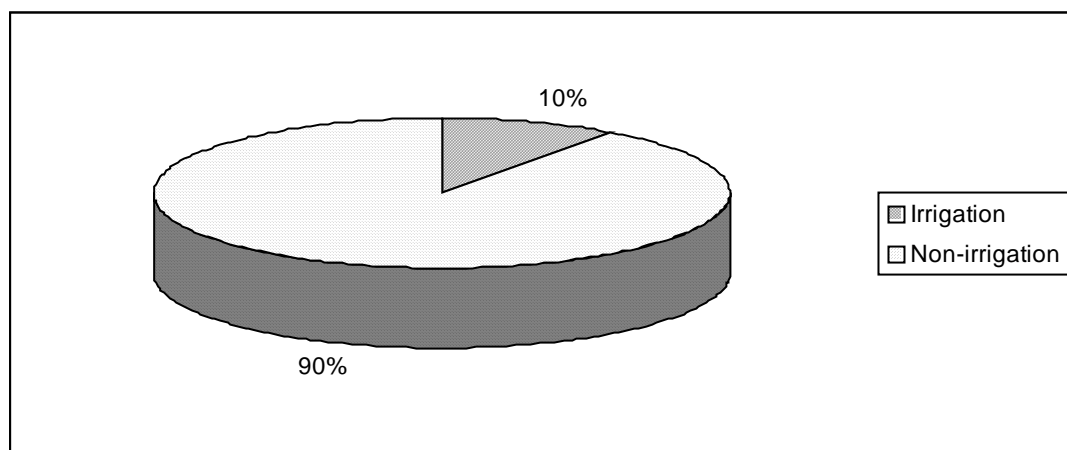
Source: Based on the table 6.4.

According to the table 6.3 and the figure 6.3, 55 percent green leaf is supplied to the small tea producer P. Ltd. and 5 percent to India. Like this, 15, 15 and 10 percent of green leaf are supplied in Tinghare, Chhipitar and Dhankuta supply respectively. It concludes that there is not local factory for manufacturing tea in Kanyam VDC. So, it is a great standing problem.

6.2.6. Lack of Irrigation

Irrigation plays crucial role in agriculture sector. It helps promote tea cultivation and production. So, there is direct relation of the irrigation to the tea cultivation and production. The current situation of irrigation in the Kanyam VDC is presented below in the pie-diagram 6.4:

Figure 6.4: Present Position of Irrigation



Source: Field survey, 2006.

The above figure 6.4 shows 10 percent irrigation facilities are available in the Kanyam VDC for tea cultivation and 90 percent area out of the irrigation. So, it is a standing problem in tea cultivation and production.

6.2.7. Lack of Market Competition

About market competition, the above table 6.4 shows that there are limited factories for manufacturing tea. These factories are inadequate capacity of manufacturing of tea than the available green leaf. Because of this, there is no market competition. In this way, it has been a standing problem in manufacturing of tea.

6.2.8. Lack of Transportation

Transportation is an important aspect for the economic development. But, there is not good transportation for carrying green leaf to the factory. The current situation of the transportation in the Kanyam

VDC for supplying green leaf in other the factories out it is presented below in the table 6.5:

Table 6.5: Present Position of Transportation

S.N.	Farm to	Collection center %	Collection to factory %
1	Motor	-	40
2	Horse	60	40
3	Manpower	40	20
Total		100	100

Source: Field survey, 2006.

According to the above table 6.5, there is no vehicle transportation from farm to collection center. In this aspect, the means of transportation is horse and manpower. On the other hand, there is 40 percent vehicle transportation facility from collection center to factory. Instead, 40 percent green leaf transportation from the collection center to the factory is maintained by horse transportation means and 20 percent by manpower. Therefore, transportation also has been a big problem for green leaf supply.

6.3. Comparative Study of Problems

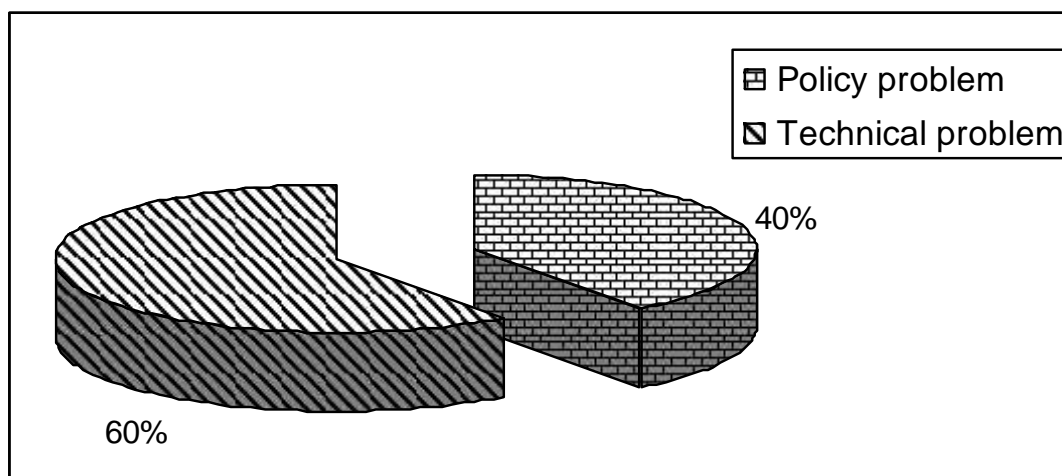
In this study, two kinds of problems have been identified for tea cultivation in the Kanyam VDC. They are policy problem and technical problem. These two problems are playing negative role in tea cultivation and tea production.

Policy problems are fully concerned with government and its agencies or institution. But, technical problems are partially concerned with government and partially with tea cultivators.

Technical problems can be solved by local institution or technician. If farmers are provided technical knowledge once, they will be benefited for long time. But, policy problems can be solved by government collaborating with the related experts and agencies and institutes for tea

cultivation, promotion and production. This kind of the problematic phenomena based on survey can be presented figure below.

Figure 6.5: Comparison between Policy Problems and Technical Problems



Source: Field survey, 2006.

The above figure 6.5 shows that 60 percent of the problems are technical and 40 percent policy are seen in the Kanyam VDC.

These types of problems as mentioned above are seen very complex which hinder directly in the process of tea expansion, production. To solve these kinds of problems, the government sector and the tea farmers should be aware in time.

6.4. Ways to Solve Basic Problems of Tea Cultivation

There are some important ways to solve all types of problems as mentioned above in tea cultivation and production and marketing which are as follows:

1. **Design of course of study in university education:** At present time, tea cultivation not only in certain areas but is expanding within the country. For this, no courses about tea cultivation and promotions have been conducted in university level till now. To fulfill this necessity, the foreign experts are being hired which can cost high. If this kind of course is conducted through university

level, the national experts can be produced, and that can help to reduce the cost of hiring foreign experts also. And, this can help promote the tea cultivation.

2. **Cooperative development:** By the help cooperative development, the farmers can be unified in group which can help share their knowledge each other. This kind of activity can help expand tea cultivation and maintain tea quality.
3. **Activising of government policy:** After privatization of NTDC, government sectors are passive towards the development of tea. For tea manufacturing and marketing in international level, government should pay their attention on it. The formulated policies on it to be accessed to the farmers by the government. For better developing tea cultivation, production and marketing, these passive governments sectors are to be avitivated.
4. **Commitment towards the development:** There is no commitment of public companies, investors and parties towards the development of nation. So, they are creating problems in the country. Such kinds of problems are necessary to be removed for economic development and agricultural revolution in the country. For this purpose, there should be commitment made by all the aspects. If these problems are solved, the tea production and export can be enhanced.

Above mentioned ways can play significant role in development of tea and it will help in the economic growth of Nepal.

6.5. Impact of Tea Cultivation in Kanyam

According to the field observation, there are seen two types of impact in the Kanyam VDC which are as follows:

6.5.1. Positive impacts

1. Providing environmental purity

The tea cultivation being done even in the waste land in the Kanyam VDC has helped to maintain the natural beauties and purity of the Kanyam environment.

2. Control in landslide

Specially, tea cultivation is also possible in the slop land. The roots of the tea plants covers the land tightly which help to control the land form being landslide.

3. Use of waste land

The tea plantation is even possible in such land where other farming is not possible. So, the tea cultivation helps use the waste land and increase the means of income.

4. Improvement of Economic Status

Tea plantation is a kind of long term cultivation. It maintains the income of the farmers seven to nine months in a year which provides the opportunities of employment for the locals and increases extra income form tea cultivation. So, this helps increase the economic status of the local people and the tea farmers.

6.5.2. Negative Impacts

There is negative impact along with the positive impact. The negative impacts are presented below.

- 1. Local precious herbal vanished:** The precious herbals are found in the hill side land. But, in tea cultivation, the land which covers the precious herbals are also cleared and this kind of clearing process causes the precious herbal to be vanished from that land.
- 2. Decreasing of forest land:** Now-a-days, due to the high income from the tea cultivation, the farmers are clearing up the forest and

starting tea cultivation that has caused the forests decreasing gradually.

- 3. Decreasing of grazing land:** Due to the high income from the tea cultivation, the farmers are clearing up the forest and starting tea cultivation that has caused the grazing land decreasing day by day. This has directly affected in the animal husbandry.
- 4. Decreasing of woods:** Due to the tea cultivation, the woods of the land are cut down. So, it has directly affected the wood to e decreased day by day.
- 5. Used of chemical insecticide getting bad impact for life:** The use of chemical insecticide in the tea cultivation has benefited the tea farmers in one hand. But, the locals, the tea farmers and the animals have been affected badly on the other hand. This has also affected the whole environment of the surroundings.
- 6. Impacts on drinking water and its source:** Water resources and its security are decreasing. Because of the use of chemicals in tea garden and clearing up the forest have affected badly the human beings too.
- 7. Local wild animals going to declining:** Due to the deforestation and use of chemicals in the land for tea cultivation has affected the local wild animals from being declined gradually.

6.6. Prospects of Tea Cultivation

Tea is most popular drink all over the world. So, its prospect and scope will basically depend on the following four major factors:

- a. Physical condition,
- b. Demand
- c. Quality, and
- d. Employment.

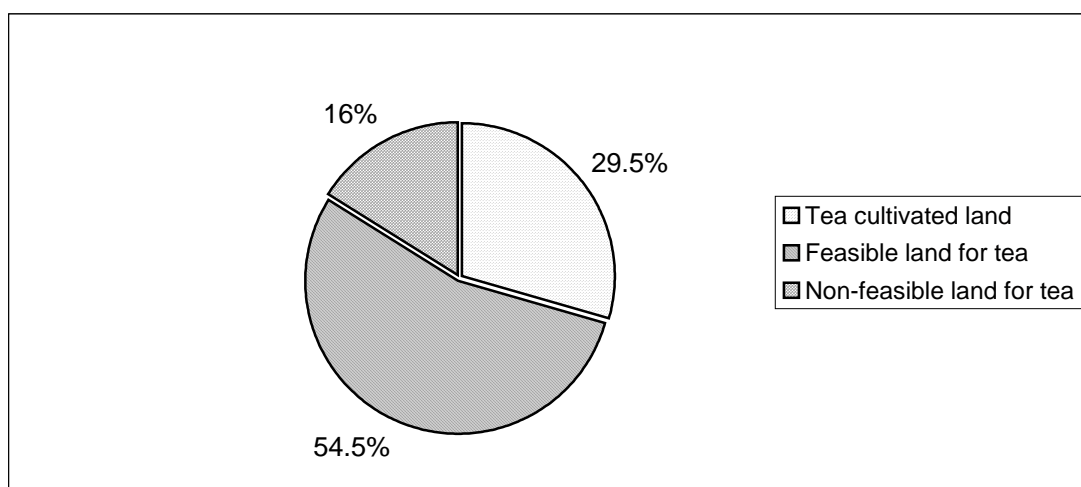
These points are dealt below.

a. Physical condition

Physical condition of Kanyam VDC has suitable for tea cultivation. Topographically, Kanyam VDC is covered by hills with height of 700m. from 1840m from the mean sea level and any species of tea could be cultivated easily. The climate of this area is subtropical. Similarly, in connection with soil more than half of the area of the VDC has sandy clay-loam soil which is better for tea cultivation and the soil is suitable for organic tea production.

According to farmers' experience, the physical condition is better for tea cultivation than other cereal crops like ginger, cardamom, etc. Tea plant requires 5 years for getting matured and tea once planted, it can produce tea for a long time. From economic point of view, it is also better than other cash crops. This is also positive result of physical condition for further development of tea cultivation in Kanyam VDC and tea can be grown easily where the same physical condition is suitable. Physical condition of tea cultivation in Kanyam VDC can be displayed in pie-diagram below:

Figure 6.6: Physical Feasibility for Tea Cultivation



Source: Field Survey, 2006.

The above figure 6.6 shows that 16 percent of the total land of Kanyam VDC is covered by tea garden, 29.5 percent of the land is not suitable for tea cultivation and 54.5 percent of the land is feasible for tea cultivation.

b. Demand

Definitely, in terms of demand, it has bright future because tea has been a luxurious beverage in the world with increasing demand. In the reference to Nepal, tea consumption has been increasing every year. In recent year, Nepal has only small portion of tea import from outside to fulfill national demand. The demand of orthodox tea from 2000/01 to 2004/05 in international market can be tabulated as follow:

Table 6.6: Present Position of Export/Import

Fy	Export		Import	
	Quantity Mt.	NRs. (in thousand)	Quantity Mt.	NRs. (in thousand)
2000/01	69.5	23084	-	9800
2001/02	79.5	27987	-	8838
2002/03	193	53908	-	468
2003/04	984.22	204822	-	992
2004/05	4316	438771	-	419

Source: *Tea A Tea*, NTCDB, 2006.

The above table 6.6 shows that in Fy 2000/01 Nepal exported 69.5 mt tea export in different countries and earned NRs. 23084 and imported tea NRs. 9800 from outside. Similarly, in the year 2002, 2003, 2004, and 2005, Nepal exported 79.6, 196, 984.22, and 4316 mt. respectively. This shows that the demand of orthodox tea is increasing day by day in international market.

The demand of national market has been fulfilled by foreign tea basically Indian tea. Now a days, the demand of Nepalese orthodox tea in

various star hotels and restaurants for Nepalese as well as foreigner⁵ is increasing. This proves that the demand of Nepalese orthodox tea is high in the international market.

c. Quality

Quality and reliability are the key factors for success of the tea product. It is supposed that the relatively newer bushes in and around the eastern hill of Nepal produces better quality of orthodox tea as compared with Darjeeling. Among the demanding orthodox teas in the international market, the quality of Darjeeling orthodox tea is deteriorating. In the perspective of the demanding orthodox tea internationally, the orthodox tea produced in Kanyam has played important role.

Additionally, research done in the recent past has suggested that Ilam's orthodox tea grown in the hilly environment with pure air and water could be branded as the high quality tea in the world.

In these connections, to strengthen the brand and unique excellence, GTZ/PSP/SNV have introduced and assisted the formulation of code of conduct amongst the manufactures of orthodox tea based on norms obtained for international federation of organic agriculture movements. Those who signed the COC contract on regulating, production processing an employment may also have the privilege to use the 'Nepal Tea' Logo. The logo reflects quality and purity of Nepalese orthodox tea in the global market.

d. Employment

Tea cultivation is a major cash crop of the Kanyam VDC. There are 4859.5 ropani land covered by tea and 535 household are engaged in tea cultivation.

⁵ J. B. Rai, *Comparative Study of Public and Private Tea Estate*, Dissertation submitted to the CEDECON, T.U., 2001. p. 15

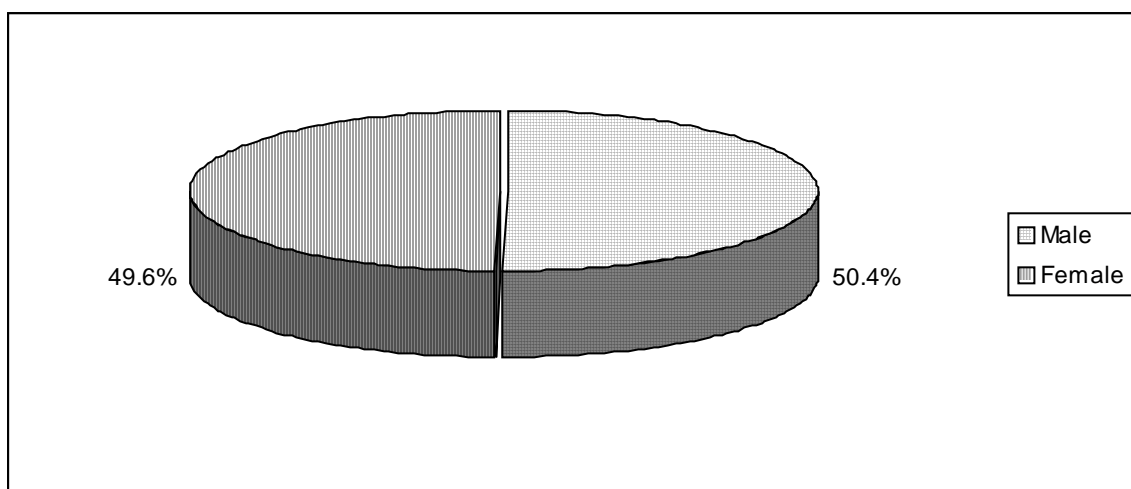
Now, tea cultivation is developing as in the form to industry, which requires more manpower for tea product. This helps reduce the rate of unemployment of the local area. It helps increase economic status of the locals and the tea farmers. Existing status of employment is given below I the table 6.7:

Table 6.7: Employment Status of Kanyam VDC

S.N.	Participation	Take care	Manuring	Poison spray	Plucking	Trimming	Total	Percent
1	Male	85	100	125	150	200	660	50.4
2	Female	100	50	30	320	150	650	49.6
Total							1310	100

Source: Field survey, 2006.

Figure 6.7: Employment Status of Kanyam VDC



Source: Based on the table 6.7.

The above table 6.7 and the figure 6.7 show that 50.4 percent males are employed in tea cultivation and 49.6 percent females are also employed in tea cultivation. Male and female are both equally employed in tea cultivation of Kanyam VDC.

With reference to the suitable physical condition, quality, employment and demand, Nepalese tea cultivation has bright future. So,

we should have to positive thinking, planning and action for the further development of tea cultivation all over the country.

6.7. Efforts on Tea Cultivation in Nepal

There are some efforts made by the government and non-government sectors for expansion and production of tea, which are as follows:

6.7.1. Government Sector

The government made policy related to tea production and development of tea in 2057 BS. Policies under tea cultivation and production are presented in the Appendix I.

Efforts on Development of Tea by Private Sectors

Some institutions involving for promotion, protection and development of tea industry in participation of private sector are as follow:

6.7.2. Nepal Tea Planters Association

Nepal Tea Planters Association was established in the year 1987/88. They organize and promote growers for production of CTC tea. Its main objectives are:

- To identify the problem related to tea industry.
- To solve the identified problems.
- To develop good relationship between management and labor.

The Association registered in fiscal year 1987/88 does not seem to be doing in the field of above area mainly because of:

- Lack of co-ordination among the planters,
- Absence of corporate practices suffering of side from the objectives, the NTPA does not have any specific roles outlined.

6.7.3. Nepal Tea Association

Nepal Tea Association was established in the year 1991 AD. And it has been working as Nepal Tea Packers and Traders Association. They help and state packaging export and import of tea. They are providing valuable service to the trade.

6.7.4. Himalayan Orthodox Tea Producers Association (HOTPA)

Himalayan Tea Orthodox Producers Association of small tea growers established in the year 1988 AD with common objectives of developing hill tea industry in Nepal.

HOTPA was established to promote and protect the orthodox tea, which has set up many programs and activities. Some major programs are as following:

- Establishment of an autonomous tea research center to develop high yielding seeds and clones.
- Establishment of technical school for tea.
- Programs to motivate small farmers to plant in their barren land.
- Training, plantation, packaging, processing to promote export.
- Research on organic agriculture for manufacturing compose and organic fertilizer.
- Establishment of Covenantal Tea Dryers in the remote areas for manufacturing hand made tea as an income generation activity.
- Promotion of local and traditional pest management on Ayurvedic principles
- Implement quality control system through Hazard Analysis critical control programs

- Improving productivity by adopting appropriate technology
- Undertake policy advocacy activities.

In the previous year, Nepal did not have its own identity in international market, but in the recent year with the efforts of government and associates agencies are planning to use its own branding 'Nepal Tea' Logo, which will give identity of Nepal's tea in the international market.

CHAPTER VII

SUMMARY, CONCLUSION AND RECOMMENDATIONS

7.1. Summary

Nepal is an agricultural country where more than 80 percent people are involved in agricultural sector. This sector contributes about 38 percent of total GDP.

Among the cash crops, tea is one of the best cash crops and has been introduced long time ago in the eastern part of Nepal. Mainly, Jhapa and Morang in the Tarai and Ilam, Panchthar, Dhankuta and Tehrathum districts in the hills are producing tea at present.

Kanyam VDC is one of the most popular areas for tea cultivation. It lies in the middle of east part of the Ilam district, where tea plantation was started in 2028BS as a commercial crop. In the Kanyam VDC, the people are engaged in cash crops production and tea is one of them. From the source of field survey 2006, population depends on agricultural is 93.1 percent. Male and female both are participating in farming in Kanyam VDC. Tea cultivation is covered by 8.80 percent square kilometer of the total area of Kanyam VDC.

At present, there are both smallholder and private tea estates in Nepal. The production data is available up to 2006. It is evident from these data the trend of tea production of public sector has been fluctuating, but the tea production of private sector is increasing. All kinds of estate have not planted tea on their all registered land areas. They are managing to registered land areas and managing to cultivate tea at remote place. Farmers who have been farming have covered most of their land. Public estates have not increased any employment opportunity because of opening new gardens. In the same way, farmers are creating

self employment by the help of starting tea farming. Private sector is increasing for tea cultivation land, whereas land under smallholder is in fluctuating.

With reference of production small and large farm size gives low production per unit of land as compared to middle size of cultivation because of inadequate observation and manuring of tea cultivation.

The production of total area under tea cultivation is fluctuated trend. Shortage of irrigation, disease, lack of technical knowledge, lack of fertilizer is the main cause of fluctuating. Popularity of tea than other cereal crops farmers of the study is changing their khet, bari, amlisobari and jungle into tea plantation. It becomes a dynamic change of land use pattern of Kanyam VDC of Ilam district. So, cash crop has good prospect in Nepal. Among them, tea is playing significant role for changing life standard of the eastern part of the people.

Because of physical condition and demand of orthodox tea, the tea cultivation is rapidly increasing. However, tea cultivation is not free of problems. There are several problems of tea farming in the study area. Among them, lack of fertilizer, technical knowledge, market competition, insecticide is main problems. Instead, tea cultivation is growing in slow pace in the Kanyam VDC.

7.2. Conclusion

From this study, it is concluded that the farmers of study area have been changing their traditional type of farming into modern agriculture system. There must be improved seeds, chemical fertilizer and insecticide for high level of yield. Among them, tea cultivation may be more profitable than grain farming. So, efforts are to be made to encourage the farmers for tea cultivation.

Kanyam VDC of Ilam district is famous area for tea cultivation where tea has been under cultivation for 30 years ago. It should be noted that the cultivation of tea in Ilam was started 100 years ago. Now, Amlisobari, khet, jungle cardamom farm are also used for tea cultivation. Because, tea cultivation yields more profit comparatively than other farming.

Tea cultivation has given more employment to the local people. More labor is required for plantation, harvesting and cutting. The male and female both are engaged in tea cultivation. Beside this, family members are highly involved in tea cultivation. Tea cultivation is comparatively more popular than cereal crops.

Instability price of tea is as a common nature of its market. Upto now, the Nepalese market is unsystematic, disorganized and limited. Therefore, farmers are facing so many problems. Now, government and non-government sectors are trying to make tea market, price, and quality and tea cultivation stable by the code of conduct.

7.3. Recommendations

Agriculture has been playing significant role in economic development of agro-based economy of a country and country side. Similarly, tea in the study area also is playing significant role. However, there are so many major problems which are already identified. So, it is essential improvement a lot to satisfactory production of tea. Serious attention must be paid in order to solve these problems. The following measures should be adopted to solve the problems.

The following measures should be adopted to solve the problems:

1. Due to lack of technical knowledge, farmers do not know about insect disease and application of chemical fertilizer in adequate

amount. So, to improve the technical knowledge, services of it must be made available in the village. Fertilizer, modern tools and insecticide and pesticide should be supplied at subsidy rate. It is necessary to provide such facilities in regular ways by establishing the government institution in the village.

2. It is also necessary to provide some disease resistant varieties of tea. The farmers are to be encouraged to cultivate with such varieties. If so, the problem of insecticides and pesticide can be reduced.
3. The improvement in irrigation such as available streams for tea land irrigation should be done by the government sector.
4. The problem among them, farmers cannot solve due to poverty. To improve the problem, they want loan. But, the lengthy processes for getting loan, they become unable from this access. And, they are to be dependent to have loan from the local money lenders in high interest. Therefore, the process for getting the loan should be simple and easy.
5. In the sense of market, government should search a new market for certainty of tea export at higher price of tea. It promotes tea cultivation and life standard.
6. Some measure should be taken to solve the problems of soil erosion, landslides and flood. Local tea cultivators should be educated in this regard. Some certain plans and programming should be adopted to avoid heavy flood, landslide and afforestation.
7. Literacy programs should be launched effectively in the study area.
8. It is necessary to improve livestock farming in the village for organic production.

9. Due to the problem of uncertainty of market price has discouraged the tea cultivators. So, the government should establish minimum support price to the profitable level.
10. Proper marketing network and institution should be established so that the fluctuation of price would be controlled.
11. Study area has been occupied with hilly area where there is not good transportation and they cannot benefit from cultivation. So it is suggested that transportation facilities should be extended in tea growing area.
12. Domestic demand of tea fulfilled by Indian tea is high in price in Nepal. Therefore, it is suggested that tea production should be increased in country so that it can substitute the Indian tea.
13. Those who are cultivating the land, their land should be revaluated by the government so that they can maintain higher level of life standard.

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APPENDIX – I

The Government Policy appeared in 2057 BS. The policies related to the Tea Cultivation are mentioned below.

Policies:

1. The Banks shall provide loans as priority credit on the minimum interest rates for tea cultivation processing.
2. After the registration of industry for the tea cultivation, the Banks shall provide loans up to 80 percent of the total project cost.
3. A grace period up to 7 years for orthodox and green tea in the hilly region and 5 years for CTC tea in the Tarai will be given on the loan provided for tea cultivation.
4. The interest on loan shall not be capitalized in grace period.
5. Income tax shall not be levied within the grace period.
6. The principal and interest amount of the loan invested on the tea cultivation shall have to be fully paid up within 10 years from the end of grace period.
7. There shall be an exemption of 75 percent land registration fee to be levied while purchasing and for tea cultivation.
8. The board shall recommend for exemption of land revenue on the land cultivated for tea.
9. A team comprising of members of Ministry of Forest and Soil Conservation, Ministry of Land Reform and Management, Ministry of Agriculture and Co-operative and National Tea and Coffee Development Board shall hire the public land in the districts where commercial tea cultivation is feasible and shall recommend such land to His Majesty's Government through Board. And, such lands may be awarded as lease, on such recommendation, up to a period of 50 years for tea cultivation.

10. The amount received through lease shall be deposited in the following funds:
 - 50 percent in the revenue of His Majesty's Government.
 - 50 percent in Tea Development Fund.
11. A capital grant will be provided for irrigation the tea cultivation as awarded to other crops. And a custom duty shall be levied at the same rate as that of agricultural equipment while importing pipe and other equipments required for irrigation.
12. Custom duty on the importation of equipments required for tea processing industry shall be levied at the same rate of agricultural equipment.
13. His Majesty's Government shall give priority for infrastructure development like road, irrigation, electricity, communication, education and health in the commercially tea cultivated areas.
14. An arrangement shall be made to avail the fuel wood required for the operation of ten industries directly from the concerned. Forest supply committee fixing the periodic quantity to entrepreneurs in a way not adversely affecting the local supply and the tree planted within the tea garden may be used by the tree garden itself.
15. The chemical fertilizers, pesticides, weedicide, and agriculture equipment etc. required for the tea business shall be allowed to import from other countries.
16. The Development Fund shall be established from the less to be received from tea entrepreneurs, grant to be received from His Majesty's Government amount to be received from tea entrepreneurs, grant to be received from His Majesty's Government amount to be received from International Non Government Organization and foreign grants or assistance. And such fund shall

be utilized in the development extension of tea with the participation of private sector.

17. Following activities shall be given priority to encourage land consolidation.
18. Arrangement of low interest loan shall be made to purchase land for tea cultivation.
19. The extension of land consolidation through tea cultivation shall be encouraged lawfully.
20. On the basis of feasibility study, any area of at least 300 Ropanies for tea cultivation shall be declared as tea area and the infrastructures like electricity, communication service, and agriculture road shall be given priority to develop in such areas.
21. The information received from the feasibility study of tea market shall be made available to tea entrepreneurs.

Market and Trade Promotion

- a. The auction system shall be developed with the participation of private sector or the introduction of tea in international market system. Necessary infrastructure shall be developed in this regard.
- b. The export promotion activity shall be mobilized in co-ordination with Agriculture Business Promotion and Statistical Division of Ministry of Agriculture, Agricultural Enterprise Centre (Federation of Nepalese Chamber of Commerce and Industry), Royal Nepalese Embassies and consulates. The information pertaining to production, quality, quantity and production areas shall be included in the poster, pamphlet and booklet to be published under the ministry of Tourism.
- c. The custom duty on packing materials to be imported for export of tea shall be levied of the same rate as agriculture equipment.

- d. While exporting tea, in case it is to be exported in quantity equal to that of one container, it shall not be required to open the latter of credit to the effect.
- e. The facilities to be received in export to other countries shall be provided in the export to India as well.
- f. Encouragement shall be made towards timely reform of the packing industry in order to development and establish domestic tea brand.
- g. For sale and export, the value added packed tea shall be encouraged than open tea.
- h. The participation of the small and co-operative tea entrepreneurs in trade fair, trade exhibition, workshop, seminars shall be encouraged by bearing such cost of participation by tea development fund.

Institutional Arrangement

The board shall perform following functions for the effective implementation of this policy.

- a. To render technical advice and assistance by conduction necessary study and research in relation to tea cultivation and to import the improved tea saplings from abroad in other to arrange for sale and distribution of it by increasing the quantity.
- b. To award grant to small farmers in order to transport the tea cutting.
- c. To render free technical service to small and co-operative tea farming.
- d. To recommend to concerned agencies in relation to awarding of concession of registration fees, land ceiling, land revenue etc., availing of custom facilities in the import of machinery, irrigation equipment, packing materials, steel structure letter of credit facilities and make field activities, in relations to fixing of national emblem after making field inspection.

- e. To recommend loan, pesticides, chemical fertilizers, agricultural equipment and fuel necessary for tea business.
- f. To keep records about tea entrepreneurs of the country.
- g. To stop the facilities provided if found not performed as per this policy after conduction regular inspection and supervision.
- h. To arrange for awarding prices and letter of appreciation annually for best producers, processors, tea packing industry and exporter in order to encourage the tea business.
- i. In order to provide information oriented materials for the development of tea business to keep up to data records of tea covered area, production information, auction quantity producer, processor, exporter, importer and researcher, and to provide such information to His Majesty's Government and concerned parties periodic basis.
- j. To maintain relation with tea related international agencies, enter into agreement and perform other joint efforts with the permission of His Majesty's Government.
- k. To develop Board as an autonomous entity along with the participation of private sector for the continuous development of tea business. The Board shall provide different recommendation and advice including awarding of land on lease for tea production and processing, and the Board shall realize fees for tea production and processing, and the Board shall realize fees for providing such services with the approval of His Majesty's Government.
- l. To collect national as well as international information covering study and research, market development of tea, and to provide information tea entrepreneurs.
- m. To cause to arrange in providing statistics and other related information on regular basis by all tea related agencies and to

arrange to stop for business malpractices of such information. To utilize such information in decision making, research analysis and market promotion.

- n. To engage in human resources development and research being affiliated with universities/trade schools.

Manpower Development

- a. A Tea Research and Training Centre shall be established with the participation of Nepal Agriculture Research Council, International co-operation and private sector.
- b. To arrange for domestic and foreign training under Tea Development fund for small farmers', tea farmers and the manpower working in tea co-operatives. And for other entrepreneurs, arrangement shall be made to bear such costs by themselves.
- c. No income tax shall be levied on investments made by entrepreneurs on training in order to encourage manpower development.
- d. An arrangement of training shall be made on time to time basis to technicians extending their services.

APPENDIX – II

Tea: From Seeding to Packing

1. Nursery to Plucking

Traditionally, seed was used for planting tea. At present, most of the new commercial tea estates of major tea growing countries are established from vegetative propagation are found in practice. A nursery is established by planting the seedlings in the ground or in bags is used for the later types. In the case of seed, nursery the spacing is 6-8 square inches and planted in 1/2inch depth. After the seeds or cutting and planted soil is covered with that grass and watered. Later, an overhead shade of that supported on bamboo at a high of about four feet is created. This soil is watered as necessary. When polythene bags sleeves are used for rooting these are covered to maintain high humidity. When rooting occurs, tea plants are removed to an open nursery and planted in individual containers. Heavy shade is provide at first and gradually removed in the preparation for planting nurseries are established twice a year during September, October, June and July. Field preparation, planting space, shade plants managing, pruning, and plucking.

First, jungle clearing is done with the cutting and burning of bush wood. Tea steers are the felled and stubs removes. Grasses are burnt and land completely hoed and seedlings with a clod of soil planted. The planting space varies from country to country depending to soil type, temperate and rainfall. In Nepal, the planting space is found to range from 5feet by 2.53 feet resulting in 3440 and 2900 plants per acre respectively. The recent concept is that the space should be 4 feet by to .5 feet resulting in 4256 plants per acre. Shade is necessary for tea in Tarai. Most of the tea shade plant found in the type of A Stipular commonly known as Black Sirish.

The most important fertilizer for tea is nitrogen and this is related to leaf growth. Other two important nutrients are phosphorus and potash. The optimum doses of all the three nutrients depends upon the age of all the three nutrients depends upon as of plants, type of pruning practiced and soil type.

Pruning is another important operation, which determines the weight of the bushes it is plucking points and yields in the coming year.

2. Manufacturing

After the tea is plucked and carried to the shade for weighting, the following steps are involved in manufacturing of tea.

a. Withering

The weighted leaf is spaced over the floor. Generally, the process takes 18 hours and nearly 40 percent of weight is lost. A temperature upto 30.2°C may be safely employed for the first hour, if necessary after which it should fall to 20.7°C or less.

b. Rolling

The withered leaf is subjected to rolling which least for 90-100 minutes for 2-3 rolling. The rolling room should be cool with the temperature not above about 26.7°C . If temperatures are much in this level, some system of cooling and humidification should be installed.

c. Fermentation

This is most important step of black tea manufacturing where considerable bio-chemical change takes place. The rolled leaf is spread on 1 inch to 1 and half inch thick on a fermenting space such as wood, galvanized sheet glazed tiles, glass and cement floor. The temperature is 60°F to 80°F . When there is lack of enough fermenting space, chemical fermenting is used and time requirement is reduced considerably.

d. Drying

The fermented tea is fed in drying machine. There are large iron chambers inside in which trays move from top to bottom on a moving belt. A continuous blast of hot air is forced in the chamber through which the trays of tea pass. This prevents tea from further oxidization and excessive moisture. However, there is a practical limit to raise inlet temperature and outlet temperature of the air thickness of the spread leaf on trays. The trays speed and volume of air flow. The moisture content of fired tea should be 3 percent. After it has been left to cool and stored in the following day. This figure may rise to 4 percent to 5 percent or even higher.

For drying tea leaf, coal, wood, or diesel are used as a fuel. Electricity can be used but it is too expensive in our country. The leaves come out from the drier not in one uniform size, but in a combination of different sizes.

e. Grading

Grading means to separate the leaves of different grades. This is done by the sorting machine, which separates the size of leaves. The large pieces are not passed through the holes of the sorting machine. The small pieces are sorted and called Broken Grades and large pieces are names as leaf grades.

f. Storing and Packing

The graded tea is put into a large wooden beam chest with its name. The assembled chests should be stored in the firing room for a few days, in order that they shall be dry. The tea chest must be sound, otherwise tea may 'go off' on keeping. In packing plywood chest, polythene bags etc. then they are sent to market.