

**A STUDY ON VEGETABLE FARMING AT NUNTHALA VDC OF
KHOTANG DISTRICT**

A Thesis

**Submitted to the Central Department of Economics,
In partial fulfillment of the Requirement for the
Degree of Master of Arts in Economics**

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LETTER OF RECOMMENDATION

The Thesis entitled **A Study on Vegetable Farming at Nunthala VDC of Khotang District** has been prepared by Tikaram Rai under my supervision and guidance in partial fulfillment of the requirements for the Degree of Master of Arts in Economics.

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ACRONYMS AND ABBREVIATIONS

APP	:	Agriculture Perspective Plan
ARK	:	Annual Report of Khotang
CBS	:	Center Bureau of Statistics
DDC	:	District Development Committee
DHQ	:	District Health Quarter
FGD	:	Focus Group Discussion
GDP	:	Gross Domestic Production
GO	:	Government Organization
GON	:	Government of Nepal
IATA	:	International An Transports Association
INGOs	:	International Non-Government Organization
KDF	:	Khambuwan Democratic Front
KJWP	:	Kirant Janamukti Worker's Party
KNLF	:	Khombuwan National Liberation Front
KRY	:	Kirant Rai Yayokha
LGP	:	Local Government Programme
MoA	:	Ministry of Agriculture
MoF	:	Ministry of Finance
NARC	:	Nepal Agriculture Resources Council
NEFIN	:	Nepal Federation of Indigenous Nationalities
NGOs	:	Non-Government Organization
NPC	:	National Planning Commission
NRs	:	Nepalese Rupees
PRSP	:	Poverty Reduction Strategy Paper
UNDP	:	United Nation Development Programme
USD	:	United State's Dollars
VDC	:	Village Development Committee
WDR	:	World Development Report
WTO	:	World Trade Organziation

CHAPTER I

INTRODUCTION

1.1 Background of the Study

Agriculture is the main profession of majority of Nepalese, who has accounted for more than 80 percent of self-employment. The economy is dominated by agriculture, so that agriculture plays a major role in the economy, which contributes 40 percent of the total GDP (CBS, 2011). And it is generally accepted that the key to economic development in agriculture is prospectively. Agriculture farming in Nepal is labour intensive. The economically active population lives mostly in rural, people take it as the way of life.

Agriculture is the backbone of Nepalese economy. More than 65% of the Nepalese population engages in agricultural occupation. Agriculture in general is basically rural based occupation. About 85.8% of the population in the country lives in the rural area and agriculture continues to be the dominant sector in the Nepalese economy. Agriculture extends employment opportunity (full and partial) to 80 percent of the population. The development and enhancement of the productivity of this sector plays a vital role in the productive employment generation and improving economic development of the country (Interim Plan, 2010).

Agriculture is the country's major economic sector, employing about 65 percent of the economically active population and accounting for about 40 percent of gross domestic product (GDP) in 2005. Forests and farmland together occupy half of Nepal's total land area. Cereals such as rice, maize, wheat and millet account for nearly 90 percent of crops produced, and for 56 percent of all agricultural production (MoF, 2008).

The poor performance of agriculture in developing countries is due to the neglecting in the priority. The agricultural production method has changed relatively slowly due to the lack of technological and biological innovation, which was restricted by farmers' attitude, values and ability. Todaro flashes the condition of traditional agriculture that, output is produced only for family consumption, the land and labor are principal factors, capital investment is minimal, technological limitation, rigid

social institutional, fragmented markets and communication network between rural area and urban center tend to discourage higher level of production (Todaro, 2004).

Rural poverty in Nepal is mainly characterized by lack of access to resources. The poor have low productively land. This is partly as a result of lack of credit and modern inputs, in turn a result of inadequate infrastructure and weak institutions. Lacking usable roads, farmers cannot obtain modern inputs or get their Crops to market. Whatever services the government provides appear to be captured by better-off households because the poor are not well organized to defend their interests (Devkota, 2008).

Fighting poverty is a difficult task and the task of poverty alleviation is not only accomplished by governmental organizations (NGOs) Especially, International Non- Governmental organization (INGOs), Netherlands Development Organization, Action Aid Nepal, etc, are accelerating the act of poverty reduction through different programmes. Among them UNDP is one of the major contributor in the task and local Governance Programme (LGP) is one of its biggest of Nepal, covering the central, eastern, mid- western and for western regions front hill mountain and the Terai regions of Nepal. This is based on social mobilization approach. The holistic social mobilization approach espoused by south Asia Poverty Alleviation has made a critical contribution to enhancing the capacity of people in remote villages to effectively priorities in partnership with the elected local government. It is in this context the government views social mobilization as all-important compliment to decentralization. Furthermore, The National Planning Commission considers social mobilization and decentralization two key pillars to its poverty alleviation strategy (Joshi, 2006).

Throughout much of the developing world, agriculture is still in its subsistence stage. But in spite of the relative backwardness of production technologies and the misguided convictions of some foreigners who attribute the peasants' resistance to change as a sign of incompetence or irrationality, the fact remains that given the static nature of the peasants environment, the uncertainties that surround them, the need to meet minimum survival levels of output and the rigid social institutions (OJha, 2006).

“Subsistence agriculture is a highly risky and uncertain venture. It is made even more so by the fact that human lives are at stake. In regions where farms are extremely small and cultivation is dependent on the uncertainties of variable rainfall, average output will be low, and in poor years the peasant and his family will be exposed to the very real danger of starvation. Accordingly, when risk and uncertainty are high a small farmer may be very reluctant to shift from a traditional technology and crop pattern that over the years come to know and understand to a new one that promises higher yields but may entail greater risks of crop failure" (Todaro, 2004) . There are various factors affecting the transformation process of subsistence farming into commercial farming in Nepal.

Nepal Agricultural Perspective Plan has mentioned the objectives: to accelerate the growth rate in agriculture through increased factor productivity; to alleviate poverty and achieve significant improvement in the standard of living through accelerated growth and expanded employment opportunities; to transform the subsistence-based agriculture into commercial one through diversification and widespread realization of comparative advantage; to expand opportunities for an overall economic transformation by fulfilling the precondition of agricultural development; to identify immediate, short term and long term strategies for implementation, and to provide clear guidelines for preparing periodic plans and programs in the future (Pradhan, 2005).

In Nepal, Agriculture includes various aspects such as of agriculture i.e., livestock rising, cash crop farming, cereal crop farming, horticulture etc. The climatic condition of Nepal is suitable for all types of agricultural activities lying in the sub-tropical to the cool temperate sector of Nepalese agriculture where there are great possibilities for development. The favorable soil and climatic condition of Nepal permit to grow almost all kinds of vegetable farming crops, which can contribute significantly to the economic development of the country. There are different varieties of vegetables. These vegetable can be divided as green vegetables. Off season vegetable tropical vegetables, sub tropical vegetable and temperate vegetable etc. vegetable production in small scale and large scale, small vegetable production is done in kitchen garden, which helps to supply daily required quantity and nutrition requirement for an individual family, and surplus sell in local market as freely

distribute to their relatives as well as neighbors. Since several years some farmer families practice commercial vegetable pockets are concentrated specific along with high way and near the town areas. Since the fifth five year plan period, Government has special categorized specific and general programs to promote and supply the fresh vegetable production. Due to specific production program were emphasized to lunch in consolidated pocket area particularly high ways in production potential areas around cities.

In Nepal context, due to available of diverse climatic region during their normal season of production and send the marketable product to other areas as off-seasonal vegetable where those vegetable cannot be grown during that period. Now a day farmers are practice. Off season. Production by creating controlled environmental condition (Shrestha, 2062).

Vegetable production is now slowly getting into commercial phase rather than other agriculture sector. Now a day, the consumers are also conscious with the nutritional value of vegetable. Farmers have considered vegetable farming as their main source of income. The cropping intensity has been increased adopting seasonal and off seasonal vegetable with modernization in agriculture system, the production practice are also being changed. Vegetables and vegetable seed production can export, which help to supply nutritional requirement and “low value high price” crop.

1.2 Statement of the Problem

Economic development is a burning issue of Nepal. The issue exists everywhere but it is crucial and debilitating in developing countries, where more than one person in five subsists on less than US \$ 1 per day (WDR, 2000). In Nepal, 85.8% people are living in vast rural areas and facing deadly problem of poverty. Developed countries are catching more and more opportunities but in countries like ours we are trapped in the depended ring of poverty our physical and social infrastructures are destroyed day by day and the gap between the haves and haves not is also widened. This has led to the frustration of the poor people. They are isolated from society by so called elites. The ability of rural people is so limited that they are not able to meet their hand to month requirement. Lack of basic health is also in frustrating condition (APROSC & JMA, 2000).

Nepal is predominated by vast rural areas only 17 percent of the people living in urban areas. So, the magnitude of poverty is much wide spread in rural areas. However, the recent government data indicates that poverty is 21% incidence in the country declined from 31% (CBS, 2011). Mainly facing the conflict, more than thousand were killed and also thousand are displaced. Rural infrastructure and government service are limited in remote areas. Over 95% of the poor people are still living in rural areas and remaining 5 percent live in urban areas. According to government data, the gap between the haves and have not is widened. As a result of unequal growth in per capita consumption across different income groups and geographic region, inequality increased substantially. The poverty rate remain and much higher in rural areas.

Agriculture holds the main key to alleviation of poverty, which is pervasive and wide spread in Nepal. It is only through the board based agricultural growth that a high and sustainable economic growth and poverty reduction can be possible in Nepal Agriculture Perspective Plan (App) also focuses this point poverty has been major focal point in all the planned development efforts of Nepal. Two reduce poverty food security has always been a major concern of all development agents and various means and ways to ensure food security has been tried on. The current cereal based cropping pattern is on such effort on the part of the poor farmers .Which passage of time is now clearly evident to all that this risk aversion attitude of the farmers is not going to help them in improving their standard of living. As the area on the cultivation can't be expanded, it was realized that there is a need to shift the current largely subsistence-oriented agriculture to more commercial and high value agriculture (CEAPRED, 2005).

In the context, vegetable farming is an important and productive sector in agriculture commercial vegetable farming is the effective fighting equipment for mitigating of rural poverty. Vegetable farming both main season as well as off-season offers good opportunity to improve the economic status of the rural poor farmers. It is a good source of income for the farmers to earn in a short period of time and in less investment we can improve economic condition and that leads the overall improvement of their daily livelihood so that commercial vegetable farming is source of income.

The following research questions are set for this study

- What is situation of vegetable farming in Nunthala VDC of Kotang district?
- How is the trend of vegetable farming in the study area ?
- What are the problems and prospects of vegetable farming in study area?

1.3 Objectives of the Study

The general objective of this research is to study the role of vegetable farming.

The specific objectives are as follows:

- i) To examine the trend of vegetable production in Nunthala VDC,
- ii) To study the role of vegetable farming in the study area,
- iii) To identify the problems of vegetable farming in the study area, and
- iv) To analyze the prospects of vegetable farming in the study area.

1.4 Significance of the Study

The vast ecological diversity in Nepal offers a unique opportunity to grow a wide range of high-value, low-volume commodities and generate high income from limited farmlands. Commercial vegetable farming has become popular among farming in accessible areas especially in recent year. Increased agriculture production and poverty reduction have been accorded high priorities in the national agenda as stated in the poverty reduction strategy paper (PRSP) and agriculture perspective plan (APP). The study intends to measure the current status of commercial vegetable farming in the study area. It will also attempt to explore the relation between poverty and commercial vegetable farming. Income generation is the most essential factor economic upliftment of the nation.

This study has great importance at national and local levels at the national level; it will be very helpful to make plan and policies for economic development. This study will also indicate some way to the future researcher also offer information to the people interested in commercial vegetable farming.

1.5 Limitations of the Study

Each and every research work has its own limitation and present study is also not freed exception. The other limitation of the study is as follows.

- a) This study focuses only on vegetable farming.
- b) The possible outcome may or may not be generalized in the case of commercial vegetable farming in other areas of Nepal, due to the different in topography available resources and knowledge of the farmers.
- c) Information is obtained from village response. So, the accuracy depends upon response of the villagers.

1.6 Organization of the Study

This study is divided into six chapters the first chapter is introductory which includes background of the study, statement of the problem, objectives significant, limitation and organization of the study. The second chapter deals with reviews of literature. Third chapter is concerned with methodology of the study, which included the research design, Rational of the study area .Nature and source of data, Universe and sample, data collection techniques tools and methods of data analysis and interpretation procedure. Description of study area is mentioned in the fourth chapter. Chapter five mainly concerned with data presentation and analysis which includes social economic condition of respondents, Vegetable production and related information, Contribution of commercial Vegetable farming in income generation, level of income people before and after commercial vegetable farming, and problems and prospects of commercial vegetable farming. In the last chapter summery conclusion and recommendation are included.

CHAPTER-II

LITERATURE REVIEW

Review of literature is a critical evaluation, analysis and synthesis of existing knowledge relevant to our own research problem. It is useful to develop new ideas and analytical methods in research. Through this, researcher should gain different kinds of information and experiences of others. To conduct this research some relevant literatures have been reviewed which help researcher to address research issue systematically. For this research study, following relevant studies have been reviewed

2.1 Theoretical Review

Kaini in his articles entitled "Role of ICTs to Alleviate Poverty through Agricultural Development: ICT Initiatives in Agricultural Research and Extension Systems. In: Proceedings of the Regional Workshop on Role of ICT for Poverty Alleviation through Agricultural development in SAARC Countries" has focused some of the prominent agricultural programs that the government has focused to achieve the poverty reduction goal are vegetable and fruit production programs, fishery development program, sericulture and apiculture, goat farming, pig and poultry farming, agricultural training creating self-employment opportunities, and so on. Agricultural and socio-economic development is such development that is people centered, concentrating on improving the human condition, and conservation based, maintaining the variety and productivity of the nature. In this context, new options need to be researched to broaden the non-chemical approach of farming, directed towards ongoing problems of continuous agricultural production (Kaini, 2013).

Devkota in his article entitled "Measurement of Poverty: Anthrop-economic Perspective" has focused on rural economic and its major challenge to development and principal obstacle for prosperous human life. Poverty and agriculture are interrelated to each other and the percentage of population below poverty line is estimated to be 23 and 44 in urban and rural areas, respectively. The APP has estimated that it would reduce poverty at a rapid rate to 14% within 20 years and the plan is designed to encourage those activities that skew the income distribution

towards the poor, particularly, the poor women. Some of the prominent agricultural programs that the government has focused to achieve the poverty reduction goal are vegetable and fruit production programs, fishery development program, sericulture and apiculture, goat farming, pig and poultry farming, agricultural training creating self-employment opportunities, and so on (Devkota, 2012).

Sharma in his article entitled "Natural Resource Conservation and Sustainable Development" has focused in his dissertation on agriculture and rural development which are intrinsically interrelated elsewhere in the developing countries, especially true for a country like Nepal. It is claimed by the scholars that, for Nepal, agriculture is and will remain a major contributor to the sustenance, employment and development of the poor as well as the better-off sections of the population for a long time. Even in Japan, which is now a well known as an industrialized developed country, the number of people relying on agricultural sector did not reduce during a long period between 1870 and 1940. Such number did not decline even until the 1960s, although non-agric employment grew substantially by that time. In countries and areas such as Taiwan, Kenya, Thailand, Costa Rica, Columbia, and Punjab (India), it was the development of agricultural sector that chiefly led to economic growth and overall prosperity among the people (Sharma, 2009).

Ghimire in his article entitled "Current Issues of Fruit Crop Protection in Nepal: Strategic Perspective" has focused Agricultural and socio-economic development people are centered on improving their income condition. He studied productivity of the nature of agriculture. In this context, new options need to be explored to broaden the non-chemical approach of farming, directed towards ongoing problems of continuous agricultural production (Ghimire, 2005).

The report of World Bank highlights on poverty in Nepal is deep and complex, and only a concerted effort to improve public interventions while mobilizing community initiative holds hope for a reduction in poverty. The report further highlights on poverty that is more widespread and deeper in file more remote areas in the mid- and far- western development regions and mountain belt. Poverty in rural Nepal is too deep and too entrenched to be rapidly or widely alleviated. Still a steady, sensitive effort at combating and reducing it can bring progress in the new century (World Bank, 2005).

NPC reports entitled "Interim Plan" has focused on Nepal's agriculture particularly the hill and mountain is subsistence in nature and therefore, availability of food security from their own farm throughout the year is the life goal of the majority of the farmers. This is evident from the fact that the farmers themselves used the factor of 'Food Availability' from their own farm to differentiate their standard of living (NPC, 2002).

Ministry of agriculture "Report" highlights with the sharp acceleration in agriculture, farm incomes will rise rapidly. Farmers will then have the purchasing power to boost the demand for high-value agricultural commodities-particularly milk, vegetables, and fruits- and for non agricultural goods and services from the small and medium-scale enterprises of villages and market towns. Over the course of the twenty-year Agriculture Perspective Plan, the rural poor will decline by 5.5 million and the proportion of the rural population in poverty will be only one-quarter that at present. Ecologically fragile lands will revert to forestry and an increased area will be planted to soil-conserving tree fruits and to fodder crops, including fodder trees and legumes. As nonagricultural employment then gathers momentum, it will be diffused throughout the nation's market towns, thus slowing the growth rate of Kathmandu, with salutary environmental effects. The APP states the condition not only of accelerated growth in agriculture but also of employment growth, which is the key to reducing poverty in Nepal (MOA, 1996).

Joshi in his article "Agrarian Reform and the Livelihood of Rural People in Nepal" has focused on agriculture and its role in evolution of agrarian culture in Nepal from ancient times. It has always been a major sector of economy of the country from ancient time to date. The total area of land available for agricultural activities is estimated as 25,98,970 ha. This is second biggest type of land use after forest in the country. Gross Domestic Product (GDP) of the nation contributed by the agricultural sector is NRs 1,83,357 million in FY 2060/61. Agriculture sector was contributing 39% of GDP in 2060/61 reducing from 51.22% in 2042/43. This reduction was because of development of other non agricultural sector of production of the country. Despite that the agricultural sector has remained the central concern of policy planner in the kingdom from the beginning of planned development intervention. Government expenditure in this sector has augmented to 8599.6millions of NRs in 2000/01 from

1367.9 NRs in 1974/75. So far total area receiving irrigation facility has been increased to 1001412 ha Agricultural sector provides employment for 65.5 percent work force of the country in 2001 reducing from 94.3% in 1971 and 82.44 in 1996/97 (Joshi, 2010).

2.2 Policy Review

According to Nepal planning commission, in course of various discussions held between civil society and people, has identified some major factors of poverty. "The factors included are related to problems such as distribution of lands, debilitated approach of poor in resources, fragmentation of holding and causes related to weak implementation such as incapacity to curb down the leakages and irregularities, political instability, lack of uniformity between policy and programming, ineffective plan formulation, and resource allocation and weak monitoring.' The plan further states,' There are other worth- mentioning.' Socioeconomic causes such as low rate of economic growth, lack of technical education, unexpectedly low positive response from private; sector and social security problems etc (NPC, 2002).

Gautan and Shrestha on their report they focus on policy of vegetable and fruit production and marketing in Nepal and focus of the following law such as;

- National Agriculture Policy 2004
- National Tea Policy 2000
- National Coffee Policy 2003
- National Seed Policy 2000
- National Fertilizer Policy 2002
- Agri-business Promotion Policy 2006
- Agri-biodiversity policy 2007
- Irrigation Policy 2003

Above policy give priority on poverty elevation through vegetable and fruit cultivation in Nepal. It is being accorded to the developmental commercial fruits and vegetable in the specific agro-ecological areas where transport facilities have already been developed (road corridors) or are in the process of development Promotion of high value low volume vegetable crops (e.g. vegetable seeds) is being emphasized in

the remote areas. Kitchen gardens are to be established throughout the country in order to improve the nutritional status of the majority of the people (Gautan & Shrestha, 2011).

NPC (1997)

The twenty years long term Nepal Agricultural Perspective Plan has mentioned the objectives: to accelerate the growth rate in agriculture through increased factor productivity; to alleviate poverty and achieve significant improvement in the standard of living through accelerated growth and expanded employment opportunities; to transform the subsistence-based agriculture into commercial one through diversification and widespread realization of comparative advantage; to expand opportunities for an overall economic transformation by fulfilling the precondition of agricultural development; to identify immediate, short term and long term strategies for implementation, and to provide clear guidelines for preparing periodic plans and programs in the future.

NPC highlights on the background of natural resources of Nepal, agriculture and forest resource are the main basis of Nepalese economy, which contribute to rising living standard of the people. Indication of transformation in agriculture towards commercialization and diversification has been noticed in the areas with the transport, electricity and technology. Now it is a need transform subsistence agricultural development by reducing the pressure of increasing population and generating modern technology with existing utilization pattern and developing transport market mechanism (NPC, 2002).

Observing the APP the researcher has selected the title to analyze the factors affecting the transformation of subsistence farming into commercialization with respect to the mid hill of Nepal.

NPC focuses on the goals and target set by the Tenth plan is, to reduce the overall poverty rate through the creation of income and employment-generating activities in the key sector like agriculture, an overall GDP growth rate of 6.2 p.a. at factor cost is also envisaged, together with a substantial improvement in agricultural growth to round 4.1 percent per annum. The rural area oriented poverty reduction strategy of Tenth Plan firstly stressed on the economy with strong potential for

income and employment growth, the growth strategy will need to be broad based and pro-poor, and focus on rural agricultural growth. For the broad based economic growth, prioritizing and refocusing policies and activities in the agriculture, irrigation, forestry, and power (rural electrification) sector are crucial for achieving agricultural growth targets. The major objectives set for the agricultural sector are to increase agricultural production, productivity and income, both to reduce poverty of rural farmers and increase food security. The tenth plan also seeks to promote agro-biodiversity conservation and environment protection, in addition to encouraging the adaptation of need based technology. Likewise, one of the major objectives is to promote domestic agro-products in local as well as foreign markets. The growth strategies for agriculture to modernize, diversify and commercialize crops by expanding the use of technology, and increasing the access of farmers to modern agricultural inputs and credit. Similarly to promoting the participation of private sector and NGO/ INGOs in service delivery, market promotion and infrastructure development, the main activities to implement the APP, includes package programme that promote smooth supply of fertilizer, provision of irrigation facilities, and expansion of rural agricultural roads, rural electricity and improving the market network. Policies and activities conducive to carrying out research and development will also be adopted (NPC, 2007).

Three Years Interim Plan (2007-2010)

In order to revitalize national economy, investment will be increased in physical infrastructures supporting agriculture. The agriculture is gradually transforming toward commercialization from subsistence system due to past development efforts. There has been an increase in production and consumption of cash crops. There is also coordinated mobilization of research, extension services, market, vocational development, food technology and quality control, supply of production inputs and rural infrastructure development and promotion work. There is an effective emergence of cooperative, private and community organizations and corresponding decrease in involvement of government sector in the flow of services. The production of consumer goods is increasing more than expected. At the policy level, Agricultural Policy, 2004, and National Agricultural Vocation Policy, 2006 have been promulgated for the development of agricultural sector. In the agriculture

and cooperative sector, the per person food consumption was 275 kg. while the target for the first year was to increase from 264 kg. to 286 kg., vegetable production (including non seasonal) was 80 kg. while the target was to increase from 66.74 to 79.15 kg., fruit production remained 21.63 kg. while the target was to increase from 16.17 kg. to 17.89 kg., fish production was 1.87 kg. while the target was to increase from 1.5 kg. to 1.87 kg., meat production was 8.6 kg. while the target was to increase from 8.5 kg. to 9.94 kg., milk production was 51 kg. while the target was to increase from 47.05 liters to 50.85 liters. The increase has been more than expected. Similarly, there has been diversification of production technology of herbs like chiraito, allo, and keshar. In addition, there has been development of farming technology of varieties of high-value agricultural production. Similarly, efforts are underway for diversification and modernization in the agricultural sector (<<http://www.npc.np>>).

2.3 Empirical Review

Basnet highlights in his article "Policy Issues in Urban-rural Linkage in Rural Development in Nepal: Empirical Study of two Medium Sized Towns" has focused the situation of Nepalese farmer and its market position. Many brokers are benefited by the present marketing system, it should be stopped and farmers are promoted by the decentralization of selling and collection centers. In 1952, USAID funded Tribhuvan Development was established. This was regarded as the beginning of planned agricultural extension service with "block development" approach. Rural youth program was launched and 4-H clubs were organized at village level that was mandated to carry out agricultural extension activities also. Structural adjustment i.e. establishment of testing farms and extension offices were started. Agriculture development has getting top priority in all the five-years plans. Different theoretical model have been employed as if Nepal is one of the experimental sites to verify the models whether they actually work. Nepal is established as a heavily aid receiving developing country. Thousands of foreign experts and Nepalese elites have exercised for agriculture development. Donors have supported us in Generating technologies and extending them widely in rural communities. Their interest also has been shaping our development in many ways. Different approaches and strategies were employed for manpower and technology development and for wider research and extension (Basnet, 2012).

Bhattarai in his book "The Nature of Underdevelopment and Regional Structure of Nepal" has described the issues in agriculture development in terms of four law motion in agriculture as- (i) the questions of 'Prime mover' in agricultural development (Lenin seems to use the term 'carries of technical process' interchangeably for 'prime mover'); (ii) the operation of the law of socialization in agriculture; (iii) characterization of 'peasant proprietorship'; and (iv) differentiation of the peasantry. As described by him, land (the basic material element of agricultural production) and labor (the principal source of value in all production are the basic conditions of factors of agricultural production. Besides, irrigation and modern inputs are the other factors of agricultural production. The absolute measure of level and growth of agricultural production is of crucial significance for a society dominated by use-value production (Bhattarai, 2012).

Pokhrel in his report "Utilization of Sources of Information by the Farmers in the Adoption of Improved Agricultural Practices of Paddy Cultivation in Chitwan" has described Nepal's resource base for agriculture is severely limited by the nature of the terrain. Only 3.1 million hectares or 21% of the total land area is cultivated and there is no significant potential for expansion, Due to high population pressure, the average landholding is declining over the years. Poverty, food insecurity, social and economic inclusions are the major problems, especially in the rural areas of Nepal. The mountain agriculture is traditionally composed of elements of self-sufficiency. Nepalese hill farming includes the field crops, livestock; horticulture, forest and beekeeping cover the risk against famine and other natural disaster (Pokhrel, 2011).

Ojha focuses on his thesis "Agriculture and Development Interrelations" has described Agriculture sector in Nepal has remained as the main basis of food security, rural employment, poverty level reduction and national income. As a landlocked underdeveloped country with basically an agro-based economy, Nepal has to choose a road that fits own sustainable situation. As a member of world Trade Organization (WTO), Nepal is to fulfill obligations and commitments required by WTO agreements latest January 1, 2007. Agriculture and rural development are intrinsically interrelated elsewhere in the developing countries, especially true for a country like Nepal. It is claimed by the scholars that, of Nepal, agriculture is and will remain a major contributor to the sustenance, employment and development of the poor as well as the

better-off sections of the population developed country, the number of people relying on agriculture sector did not reduce during a long period between 1870 and 1940. Such number did not decline even until the 1960s, although non-agric employment grew substantially by that time. In countries and areas such as Taiwan, Kenya, Thailand, Costa Rica, Columbia, and Punjab (India), it was the development of agriculture sector that chiefly led to economic growth and overall prosperity among the people (Ojha, 2009).

Sharma in his book "Natural Resource Conservation and Sustainable Development" has highlighted lack of national market, lack of infrastructure, loss in distribution, small transaction, inability of delivery, lack of coordination are the key feature of Nepalese agricultural market. And difficulties of transport and collection, lack of market information, lack of storage facility, lack of institutional credit, presence of middle man, lack of grading and standardization, adulteration lack of farmers organization are the major problem of agricultural market in Nepal. The Nepalese agricultural market is affected by import of Indian production. In order to improve Nepalese agricultural system, import of Indian yield should be checked and ensure the transportation of yield of small farmers, systematized agricultural market should be established in every district (Sharma, 2009).

According to the APROSC and J.M Association report, "Nepal Agriculture Perspective Plan" the potential and existing practice of agriculture in the nation are very much heterogeneous in terms of the variation in agro ecological and physiographic characteristics. High Himalayas is feasible for cattle and sheep rearing whereas hills carry potentiality in horticulture development. Tarai is feasible for various type of grain vegetable, and cash crops. Nevertheless, the fragmented land holding and household based farmland operation practice constrained mechanization of the sector in the country. Whatever be the potential and comparative advantages in this sector, Nepalese farmers are operating their small holdings land for their subsistence purpose. Almost mixed farming practice s of vegetable, grains and fruits production combine with a small number of livestock raising are the prevalent pattern in Nepalese farm regardless of the different agro-ecological region (APP Monitoring and Evaluation System (APROSC and J.M Association, 2008)).

UNDP report "Urban Agriculture: Food, Jobs and Sustainable Cities" has highlighted Nepal is small but extremely diverse country with more than 24.8 million people at present. Agriculture in Nepal is contributing 65% employment of the economically active population. The share of agriculture in GDP is about 38%; more than 80% of the rural population depends heavily on agriculture sector for their employment and about 65% of the total income of rural households comes from agriculture. As more than 80% rural population depending on agriculture and they are mostly fall below poverty line, poverty alleviation without agricultural development is not possible in Nepal. Realizing this fact, the government of Nepal has set a principal development objective of poverty reduction through agricultural development for the Tenth Plan (2002-2007). Poverty reduction is one of the principal objectives of the 20 years Agriculture Perspective Plan (APP, 1995-2015). To achieve the objectives, APP has identified livestock, high value crops, agribusiness and forestry as its priority outputs. Commercialization of agriculture is essential for alleviating poverty in Nepal and it is realized that agriculture can only be commercialized by effective uses of information and communication technologies, giving the farmers a commercial orientation (UNDP, 2008).

Thapa on his article "Re-strengthening Horticulture Institutions in Enhancement of Horticulture Industry in Nepal" has described Agriculture development in Nepal has passed through various models of development. In each model, horticulture and livestock sector have got the priority. With a view to put agriculture into a high growth path, APP was implemented. However, it failed to relate the development activities with the institutions responsible to implement them (Thapa, 2007)

Adhikari on his dissertation "Women in Commercial Vegetable Farming" has focused chemical fertilizer use in Nepalese agriculture, and he finds the traditional production in Nepal is labor intensive with small field sparsely planted with seeds of mixed genetic type. Plants grown are also under tillage system of traditional agriculture. Even most of the big farmers of the country have not applied capital intensive technique. Now the big farmers of the Tarai area are going to use capital intensive technique also such as tractor, chemical fertilizer, improved seeds and plant protection materials etc. In modernization agricultural animals' power and machinery

are substituted for human labor than mechanical power replaced animal power. The increased use of agricultural inputs also modernized also substitute both land and labor (Adhikari, 2006).

According to the MoA "Report" has described Agricultural economics of rural Asia has always been centered on small farms that include maintenance and use of livestock. In this sense, almost all farmers in Asia are mixed farms. In Nepal, particularly in the mountain and hill areas, reliance on livestock had traditionally been even higher. Livestock has provided a sort of famine insurance and has been important form of asset accumulation for the poor. Nepalese agricultural market is traditional. The organizations which are working on agricultural market are also being neutral. Some participatory organization (like *Shajha*) are busy for selling salt, sugar, seeds, manure etc. rather than to promote the farmers saving. Some organizations are buying milk, sugarcane, jute, tobacco, tea, coffee etc. But here is the lack of organized market for crops production, so that the farmers are deprived of getting fixed price. The production and productivity is less because of less output in agriculture. Actually Nepalese agriculture market can be found in different forms like daily, weekly, monthly, or in *hatbazar*. But now a day's market is being enlarged in some of the cities. People are running some systematize vegetables and fruits collection center to promote the agricultural market smoothly (MoA, 2006).

Devkota on his article "Agriculture and Sustainable Development: Conceptual Approach" has focused Agriculture sector in Nepal has remained as the main basis of food security, rural employment, poverty level reduction and national income . As a landlocked underdeveloped country with basically an agro-based economy, Nepal has to choose a road that fits own sustainable situation. As a member of World Trade Organization (WTO), Nepal is to fulfill obligations and commitments required by WTO/SPS agreements latest by January 1, 2007. Nepal's economy is vulnerable with rugged topography and limited croplands. Of total 147000 Sq. km, land area limits to 17.0 percent, which is not all time suitable for cultivation of food and cash crops throughout the kingdom, except in the Tarai. Mid hill is especially appropriate only for tropical products (Devkota, 2004).

NARC, report highlight on Accessing of various parameters of the commercial vegetable farming is quite useful for sustainable production. It helps point out the slacks and to take corrective measure (NARC, 1996).

The formal labor hiring practices in Nepal are quite limited, small holding and subsistence farming are characteristics of family based agricultural activities. The unequal distribution of land in the tarai has probably led to move labor to force work wage. There in the hills, where there is less disparity in land holding less than 2 percent of work force are wage works. Labor exchange on to one labor exchanges between farm house hold is a Common practice in the hills too supplements the farm labor. Wage payments don't occur in this system of labor contact. Mutual relationships within the community are the basis for labor exchange. In ensure the timely supply of the labor at the peak labor requirement. These types of mutual labor arrangement system are named as 'parma' whereas casual labor arrangement is none know as 'Jyala'. Vegetable production is more management required crop then cereals. The labor management system of different landowner is viewed as important factors of this study.

Hossain on his book "Role of ICTs to Alleviate Poverty through Agricultural Development: ICT Initiatives in Agricultural Research and Extension Systems. In: Proceedings of the Regional Workshop on Role of ICT for Poverty Alleviation through Agricultural Development in SAARC Countries" has described the characteristics of the developed commercial farming (a) High degree of specialization, full market orientation, (b) Capital intensive, developed land resources, (c) facilities for machinery keeping, maintenance and storage, (d) low labor inputs, (e) high technology, high input level, qualities seeds, (f) Sophisticated management, proper timing of activities, few constraints due tradition or taboos, (g) High output per area per labor high a and quick returns to cash outlays, (h) High quality and uniform outputs, (i) Industrial type of collecting, transport and processing, well developed marketing channel, (j) Efficient agri-business network, (k) well developed credit and banking facilities, (l) existence of extension advisory service, farmers organization associations (m) well developed research back up and training facilities, developed early warning system (weather, diseases outbreak), (n) Efficient communication net work, easy access to market information, good roads and developed transport net

work, (o) Relatively easy access to input and their fast delivery, (p) Protected prices subsidies, tax reduction facilities for investment,(q) Access to water, electricity, sanitary facilities and (r) access to medical care, education facilities, etc (Hossain, 1997).

According to the Kurit's article Nepal is predominantly agricultural country there are many literatures available regarding the agriculture production, cultural practices, marketing, different sector of agriculture and policy in national level. In Nepal, systematic research and development started only after the establishment of government horticulture farms in sixties. In 1972, the vegetable development division in the National Agriculture Research Council (NARC) was established to coordinate research, seed production and development of vegetable crops. In 1987, NARC was given the mandate for all agricultural research including vegetable crops (AVRDC, 1992). Kurita has done the illustrate work in the field. This is the result of his long staying visits to different ecological belts of Nepal. In the study, starting from the general survey of Nepalese agriculture, he has also explained some of the socio-economic condition, vegetable farming techniques, marketing aspects and consumption of vegetable production in country and also studied about the possibility of introducing some suitable Japanese vegetable in different ecological belts of Nepal. Agriculture development policy of GoN is based on the agriculture perspective plan (APP). APP has identified Agriculture as a lead sector for poverty alleviation and for increasing as a backward linkage. To promote vegetable production, the ninth five-year plan has the commercial vegetable production will be launched in pocket areas with consideration to economic of scale in production of market oriented vegetable in the pocket areas in and around the North South Highways. The program includes formation of horticulture trade promotion and linking with wholesale market centers (Kurita, 1978).

Pyakuryal on his dissertation "Utilization of Sources of Information by the Farmers in the Adoption of Improved Agricultural Practices of Paddy Cultivation in Chitwan" has highlighted Traditional agriculture in Nepal essentially a cultural characterization where traditional cultivation practices are being practiced from generation to generation and have been prevalent and customary usage. Since the beginning of the ancient history agriculture alone is considered as productive one, for

it yields so they believed the subsistence its works, the earning of its entrepreneur and surplus, while industry and trade would be sterilize. Nepalese agriculture are natured with traditional because of low capital, unskilled labor and lack of incentives towards environment on agriculture related works. Despite the unchanged of traditional agriculture there is necessities towards modernization if the country spends more of its resource on productive new plants and then proceeds spending more on education. To divert agricultural modernization there is equally need to developed new productive plants and trained manpower as well. Beside there are so many conditional factors that has to adopted for the modernization. These factors are physical; as well as institutional infrastructure expansion of agriculture, the use of science and technologies, extension program as well as experimental research policy should be laid down in the number of village's farms. Relevant research findings and its implementations program should be carried out towards he specified area. In general integration is higher in mid hills than in the Tarai. Hill and Tarai crops, livestock, trees pasture farming households and market are integral component of farming system. Nepalese farming system is enormous and diverse, different farming systems are followed by different ethnic groups. Family and non family labor are the major source of human labor in both hills sand Terai. Bullocks are important in both Terai and hills, but are still important in the hills because modern machinery can't be used in hills. Small farmers live in various intensities of marginal and fragile environment and fallow traditional farming system (i.e. subsistence farming system). According to Pyakural, in Nepal there are four types of farming system in practice. They are crop dominated farming system, horticulture dominated farming system, and livestock dominated farming system and integrated farming system. Nepalese farming system are small farm based, and are highly intensified, diversified and complex. In recent years non-traditional crops such as flowers, fruits and vegetable have been included into diversified agricultural programs to enhance the earning of foreign exchange (Pyakurel, 1997).

The above reviewed literatures show that government investment in agricultural sector is high but it gives low output. In this study it analyze the situation of vegetable farming in Khotang district where more than 80% people are involved in farming. Vegetable is one of the cash crops of Nepal. From vegetable farming farmers enhance their economic situation. This study also analyzes problems and prospects of

valuable in the study area and provides suggestions for the improvement of the situation. Periodic plan began in Nepal Since 2013 and government highlights on agriculture sectors including vegetable farming though but no attempt has been done so far in Nunthala VDC and the focus of the study justifies the present works.

In Nepal, different researchers related to agriculture crops such as paddy, maize, wheat, etc. have done personally and instructionally have done but in this study area nobody has done till now. For the further study related to agriculture product this study helps who are interested about it.

CHAPTER III

RESEARCH METHODOLOGY

Research methodology is an important component of the study. It involves decision about the research design, sources of data information, sampling design if primary data is to be collected and survey tools for data collection.

3.1 Rational of the Selection of Study Area

The present study was carried out in Nunthala VDC of Khotang district, which is located in the western development region in Sagamatha Zone. The economic status of this district is normal. Agriculture is the main occupation of this VDC. The study area was selected for this study because it is accessible for the researcher and such kind of research has been done in this area before.

3.2 Research Design

Research design followed in the study is exploratory and descriptive. This study is a socio-economic study of the objectives of the study has been fulfilled by using exploratory cum descriptive research design.

3.3 Sources of Data

The study is based on both secondary and primary data. Secondary data have been used to present the background of the study and supplement and complement the findings of the study. Secondary data were collected from various sources such as books, journals, previous theses on the subject and government publications.

3.4 Sample Size

Nunthala VDC of Khotang district was selected for the study where about 360 households. Among them 100 household were selected by using purposive sampling techniques from each households one respondents were selected. The entire respondent was participated in cooperative. Personal interview has been taken from the selected household. From each household hold one respondent was selected from

interview. There are nine wards in VDC each 8 ward of the VDC 10 and from wards no 9 there selected 20 respondents. In total there were 100 respondents for this study

3.5 Methods of Data Collection

Structured questionnaire, FGD, key informant interview and observation were used for collecting data from the selected households. The field survey was conducted after passed this proposal.

3.5.1 Household Survey

The household survey has been conducted in order to collect qualitative and quantitative facts about socio-economic status of people living in the study, poverty situation and the role of agriculture in upliftment of economic condition.

3.5.2 Observation

Certain information has been collected observation method. Researcher observe agriculture activities such as farming, selling goods, house pattern etc and guess the situation of economic status. Observation also helps to check the information provided in the interview.

3.5.3 Key Informant Interview

Key informant interview is also used using checklist. The key informants of this study were local leader, cooperative manager, VDC secretary etc.

3.6 Methods of Data Analysis

The study follows proper method of data analysis according to the nature of data and information. Collected data and information were presented and analysis by using simple mathematical and statistical tools such as table graph percentage, etc.

CHAPTER IV

ANALYSIS AND PRESENTATION OF DATA

4.1 Description of the Study Area

Khotang District covers 1,591km Total area: 1,591km Khotang in a Nutshell Population: 206,312 Total VDCs: 76 Female: 109,220 (53%) Municipalities: 0 Male: 97,092 (47%) Eligible people registered to vote: 92,215 (May 2013) Total households: 42,647 Aged 10-24: 70,865 Average household size: 4.8 Female: 33,363 Human Development Index: 0.442 Male: 37,502 Literacy rate: 69% Women's literacy rate: 61% Proposed budget per person: NRs 10,587for 2012/13 Foreign aid disbursement per capita: USD 57.00 Foreign aid commitment: USD 46 million, 77% through GoN Basic Education Schools: 483 Higher Secondary Schools: 86 Campus: 4 Hospitals: 2 Health Posts: 8 Sub-Health Posts: 65 Khotang is one of the districts particularly sensitive to ethnically driven federalist movements. There is significant mobilisation of various identity groups in Khotang around the demands for a Khambu or a Kirat state. The Khambhuan Rastriya Dal, formerly known as Khambhuan Rastriya Morcha and led by R. K. Khambhu, has considerable influence in the district; it is the group leading the movement for a Khambuwan province. Khumbuwan Democratic Front (KDF) and Khumbuwan National Liberation Front (KNLF) also demand an autonomous Khambuwan state. In addition, a social organisation representing the Rai community, the Kirant Rai Yayokha (KRY) and Nepal Federation of Indigenous Nationalities (NEFIN) carry out activities in support of identity-based federalism (ARK, 2012).

Underground armed groups in the district, such as the Kirant Janawadi Workers' Party (KJWP) and the Samyukta Jatiya Mukti Morcha (SJMM), also advocate for an autonomous Kirant state. Their perceived association with violence and semi-criminal activities detract from their political agendas and the legitimacy of the broader movement. Both groups have splintered over time. KJWP demands a greater Kirant state to include all hill districts of the Eastern Region and Ramechhap of the Central Region as well as Jhapa, Morang, Saptari and Udaypur. It was established in 2007 as an armed underground outfit but some of its leaders split off, denounced violence, and engaged in dialogue with the government, KJWP was very active across the district till 2011. Following an attack on a police post in Nunthala in

September 2011, police arrested several of its cadres and leaders and KWJP's strength decreased significantly. Khotang has a District Police Office, 13 Area Police Offices, and 15 Police Posts, which together are staffed by 465 personnel, only 1.5% of whom women. The District Police Office has a human rights desk and citizen assistance cell. There is a Women's and Children's Cell within the District Police Office which handles cases of human trafficking, polygamy, rape and other gender-based violence.

In 2011, Khotang Police registered 41 crimes, 31 of these homicides, 20 suicides, 15 public offences and only four crimes related to in the Sagarmatha Zone of Nepal's Eastern Development Region. Its elevation ranges from 152 to 3,620 meters above sea level. Khotang District comprises 76 Village Development Committees (VDCs), 13 Ilakas hotang is predominantly an agriculture-dependent district; however, its production is not sufficient to feed its population throughout the year. Private enterprise and remittances are other sources of income for some people; however, reliable information on the inflow and utilisation of remittances is not available. Around 54% of the population aged 16 to 55 in Khotang is economically active. Migration to countries other than India (particularly the Gulf countries) has become more popular among the youth in this district in recent years. The largest portion of migrants are from the highly indebted, Dalit and socially excluded groups.

Most of the Dalit families still practice traditional occupations as blacksmiths, tailors, goldsmiths and coppersmiths. In rural areas they are generally paid in kind, though at DHQ they are remunerated in cash. Earnings from these traditional occupations are often not adequate for the survival of the families who rely on them. Dalits and Janajatis also commonly work as construction and agriculture labourers. Three commercial banks and one development bank have a local presence in Khotang; in addition, 37 saving and credit cooperatives with 1,802 members (44% of whom female) and 12 multipurpose cooperatives (no figures on membership are available). A total of 298 small scale cottage industries (228 in manufacture, 64 in the service sector, five in tourism and one in energy production) are registered in the Cottage and Small Industries Development Committee, but only 65% of them operate and employ 1,146 people. The main market centres in Khotang are Diktel, Waksila, Aiselukharka, Khotang, Chisapani, Buipa, Manebhanjyang, Chhitapokhari, Lamidanda, Simpani, Halesi, Arkhaule and hotang has one District Hospital with 15

beds, two Primary Health Centres, 10 Health Posts and 63 SubHealth Posts. Health facilities in Khotang are meant to be staffed by 333 personnel, but over a third of these posts (126) are vacant. The most common health problems dealt with in the district are intestinal worms, headaches, acute respiratory infections, pneumonia, gastritis, tonsillitis, amebic dysentery and uterine prolapse. There are relatively few new cases of tuberculosis in Dailekh, 13 among women and 28 among men in 2010/11, and 97% of cases were treated successfully in the preceding year.

Khotang has a low contraceptive prevalence rate (44%), well below the national target for 2015 of two thirds. Ante-natal care first visits as percentage of expected pregnancies increased in 2011/12 and reached 67% in Khotang, and fourth visits reached 60%. Still, although 905 female community health volunteers promote maternal and child health services across the district, a mere 17% of women deliver their babies with assistance from a skilled birth attendant.

The main crops cultivated in Khotang are rice, maize, wheat, millet, and potatoes. Livestock constitutes an integral part of the agriculture system and the majority of farming households keep cattle, goats, and buffalo. In 2001, 40% of households owned less than 0.5ha land, 33% owned between 0.5ha and 2ha, and the remaining 28% had holdings larger than 2ha. The District Agriculture Development Office has formed 412 farmers' groups across Khotang, with a combined membership of 6,765 farmers. Of these, 131 groups are actively functioning for agriculture development in their villages. Farmers' groups are registered with the District Agriculture Development Office and can as such apply for grants, trainings and agricultural inputs like seed, fertilisers, small irrigation and production technology. Of the registered groups, 45 are women's, 42 are men's, and 325 involve farmers of both genders. The District Agriculture Development Office provides services through its district office in DHQ as well as six Service Centres throughout the district and one Contact Centre. There are also 13 Livestock Service Centres across the district and 14 permanent *haat bazaars* (agricultural and livestock markets).

Livestock Office has formed a total of 355 groups (61 women's, 31 men's and 263 mixed) through which to deliver its technical and material assistance. Livestock Office has formed a total of 355 groups (61 women's, 31 men's and 263 mixed) through which to deliver its technical and material assistance.

In this chapter, It is analyzed the collected data regarding the objectives. Vegetable is one of the important cash crops and it plays vital role for the enhancement of economic status of the people living in rural area . For that it analyzes the socio economic characteristics of the respondents, the issue of poverty and its causes and strategy for poverty alleviation of people living in the study area.

4.2 Socio-economic Characteristics of the Respondents (Vegetable Farmers)

In this sub chapter it analyzes the socio economic characteristics of the respondents such as caste composition, education status, sex, age etc.

4.2.1 Caste-wise Composition of the Respondents

Caste composition is one of the important social characteristics of the respondents because it plays vital role on commercial vegetable farming in the study area. The following table and figure show the caste composition of the respondents.

Table No: 4.1
Caste-wise Composition of the Respondents

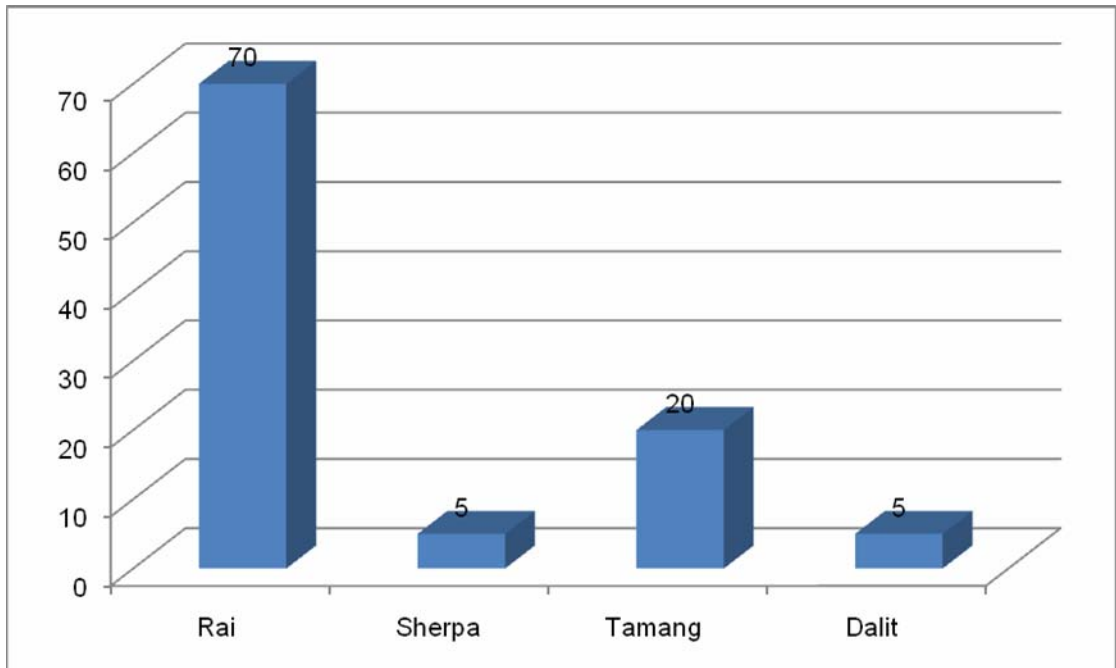
Castes	No.	%
Rai	70	70
Sherpa	5	5
Tamang	20	20
Dalit	5	5
Total	100	100

Source: Field Survey, 2014

Table no. 4.1 and figure no. 4.1 show caste-wise compositions of the respondents. Data shows that 70% are Rai and. In this way, 5% are Sherpa, Only 20% respondents are Tamang and 5% are Dalit. Among them caste and ethnicity Rai are highest then other caste and Dalit are less participation in the vegetable farming.

Figure: 4.1

Caste-wise Composition of the Respondents



Source: Based on the Table No. 4.1

4.2.2 Sex-wise Classification of Respondents

Sex is one of the social characteristics of the respondents because it determines gender based involvement of the respondents. The following table and figure highlight the sex composition of the respondents.

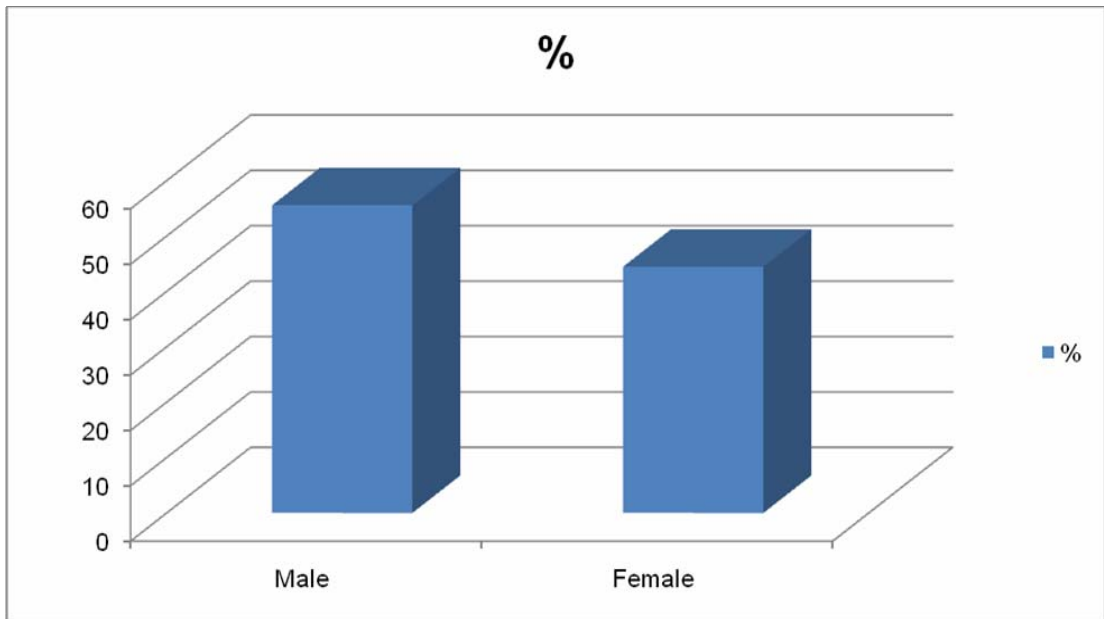
Table: 4.2

Sex-wise Classification of Respondents

Sex	No .	%
Male	55	55
Female	45	45
Total	100	100

Source: Field Survey, 2014

Figure: 4.2
Sex-wise Classification of Respondents



Source: Based on the Table No. 4.2

Table no. 4.2 and figure no. 4.2 show sex composition of the respondents. Data shows 55% of the respondents are male and 45% are female respondents in this study. Majority of the respondents are male in this study.

4.2.3 Age-wise Classification of Respondents

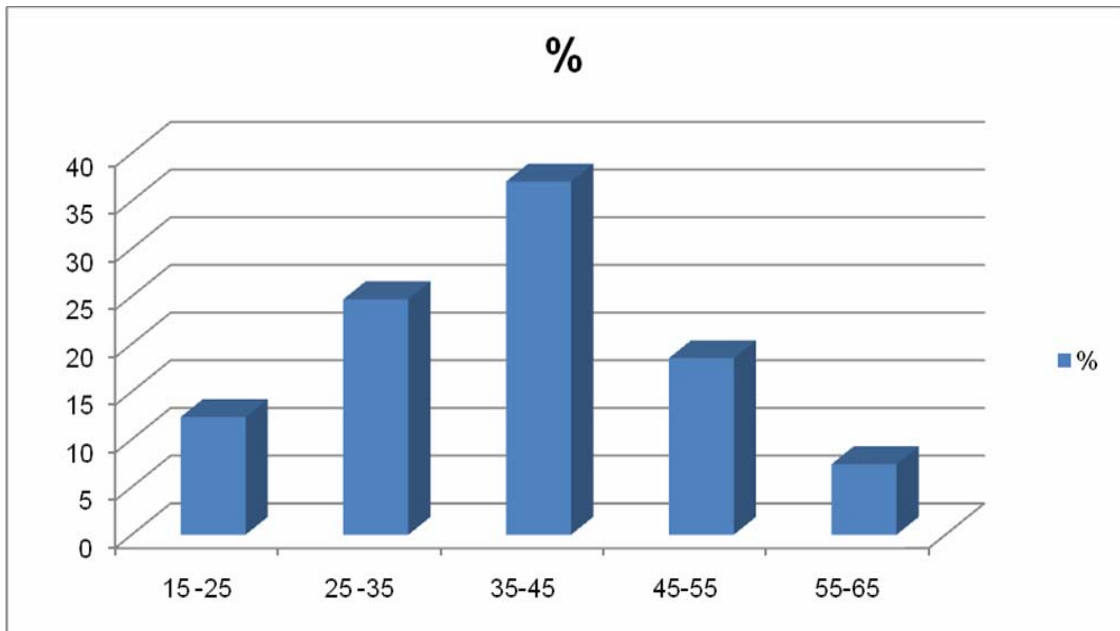
Age plays vital role on different activities of the respondents. It is one of the main characteristics of the respondents. The following table and figure shows the age composition of the respondents.

Table: 4.3
Age-wise Classification of Respondents

Age Group	No.	%
15 -25	16	16
25 -35	35	35
35-45	25	25
45-55	12	12
55-65	12	12
total	100	100

Source: Field Survey, 2014

Figure: 4.3
Age-wise Classification of Respondents



Source: Based on the Table No. 4.3

Table no. 4.3 and figure no. 4.3 show the age composition of the respondents. Data shows that 16% are between 15-25 years and 35% are between age group 25-35. In the same way, 25% are between age group 35 between 45 years age group. Similarly, 12% are between age group 45 -55 years and similarly 12% are between age group 55 to 65. It shows that majority of the respondents are between age group 25 to 35 and minority on age group 55 to 65.

4.2.4 Marital Status-wise Composition of Respondents

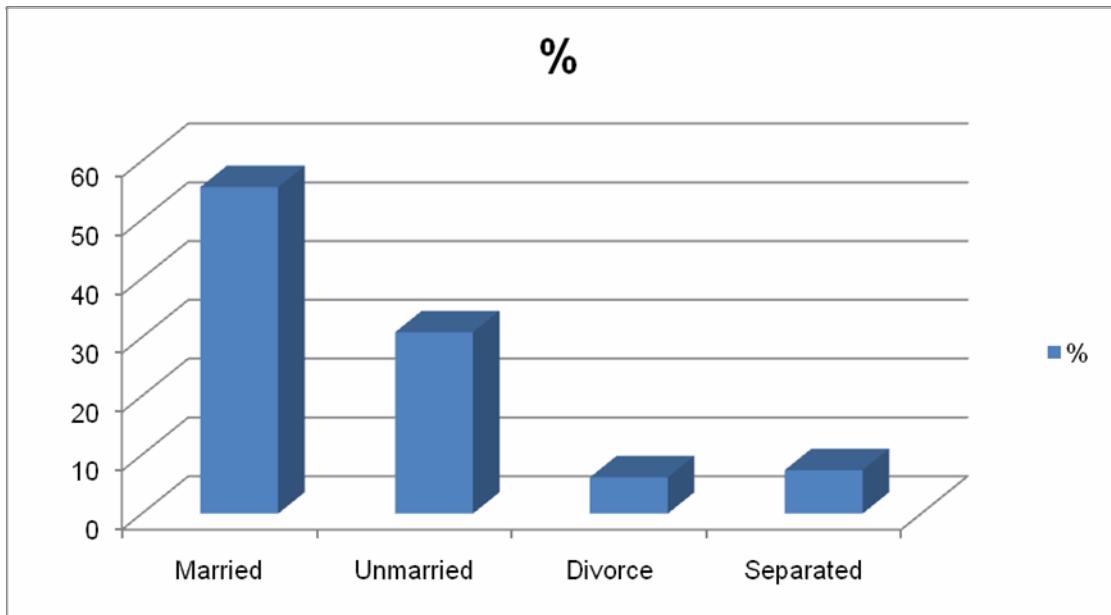
Marital status of the respondents play important role on business. It is one of the important social characteristics. The following table and figure show the marital status of the respondents.

Table: 4.4
Marital Status-wise Composition of Respondents

Marital status	No.	%
Married	80	80
Unmarried	20	20
Total	100	100

Source: Field Survey, 2014

Figure: 4.4
Marital Status-wise Composition of Respondents



Source: Based on the Table No. 4.4

Table no. 4.4 and figure no. 4.4 indicate the marital situation of the respondents. It shows that 80% are married and only 20% are unmarried. Among those respondents married is high involvement in vegetable farming.

4.2.5 Educational Status of Respondents

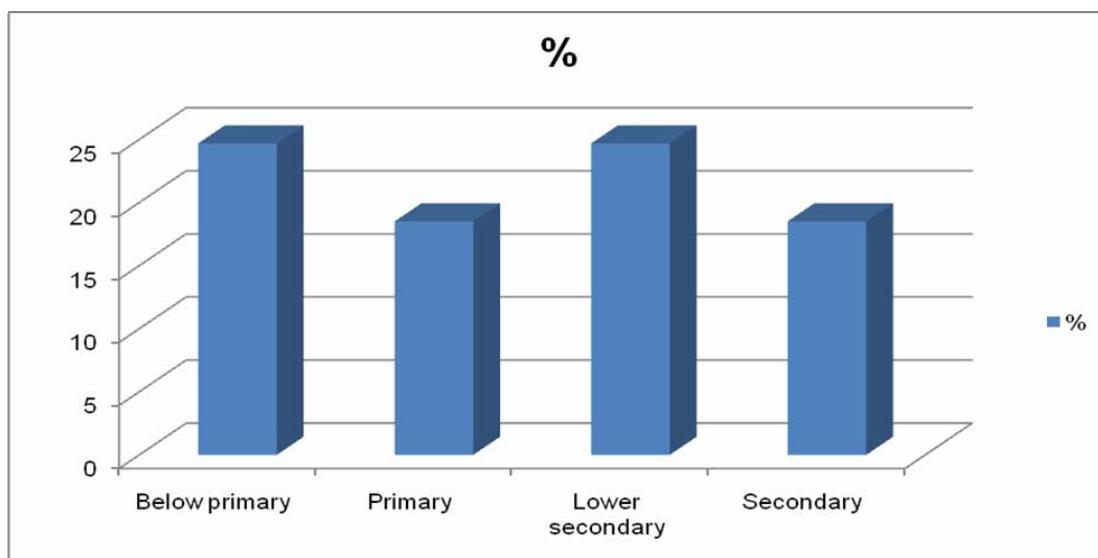
Education status of the respondents determined the occupational activities of the respondents. The following table and figure show the educational status of the respondents.

Table: 4.5
Educational Status of Respondents

Education	No.	%
Below primary	20	20
Primary	30	30
Lower secondary	24	24
Secondary	14	14
Higher	12	12
total	100	100

Source: Field Survey, 2014

Figure: 4.5
Educational Status of Respondents



Source: Based on the Table No. 4.5

Table no. 4.5 and figure no. 4.5 show the educational status of the respondents. Data shows that 20% respondents are below primary; similarly 30% are passed primary. In the same way, 24% are passed lower secondary level and 14% are passed secondary levels and remaining 12% are passed higher secondary level. Among them below primary and lower secondary passed respondents are highest than other level.

4.2.6 Occupational Classification of Respondents

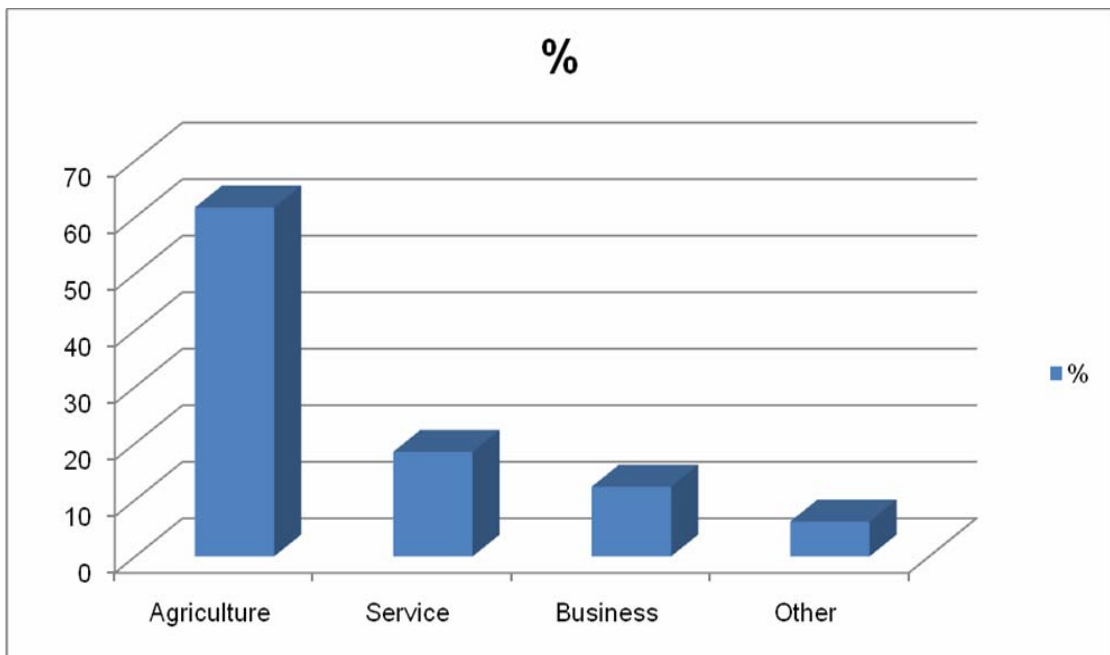
Occupation is one of the important economic characteristics of the respondents. In this study it analyzes the situation of vegetable farmer in study area. Following table and figure show the educational composition of the respondents.

Table: 4.6
Occupational Classification of Respondents

Occupation	No.	%
Agriculture	90	90
Service	3	3
Business	4	4
Other	3	3
Total	100	100

Source: Field Survey, 2014

Figure: 4.6
Occupational Classification of Respondents



Source: Based on the Table No. 4.6

Table no. 4.6 and figure no. 4.6 show the occupation of the respondents. Data shows that 90% of the respondents are involve in agriculture and 3% are made service sector as occupation, In the same way 4% involve in business and 3% are involve in other occupation like labor and work both near area and abroad.

4.2.7 Family Size Classification of Respondents

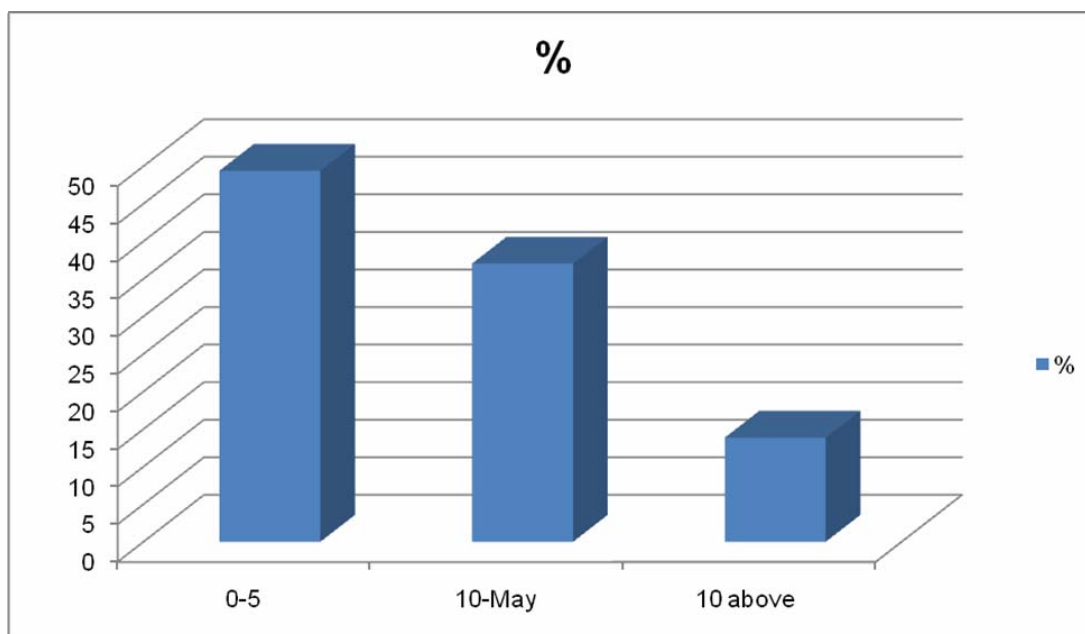
Family size is one of the important markers of occupation because big family size is fall into the crisis of unemployment. The following table and figure show the family size of the respondents.

Table: 4.7
Family Size Classification of Respondents

Family size	No.	%
0-5	50	50
5-10	38	38
10 above	12	12
Total	100	100

Source: Field Survey, 2014

Figure: 4.7
Family Size Classification of Respondents



Source: Based on the Table No. 4.7

Table no. 4.7 and figure no. 4.7 explain family size of the respondents. Data show the 50% respondents have 0 to family members; similarly 38% respondents have 5 to 10 family members, and 12% have above 10 family members. High respondents have 0 to 5 numbers of family members.

4.2.8 Size of Landholding

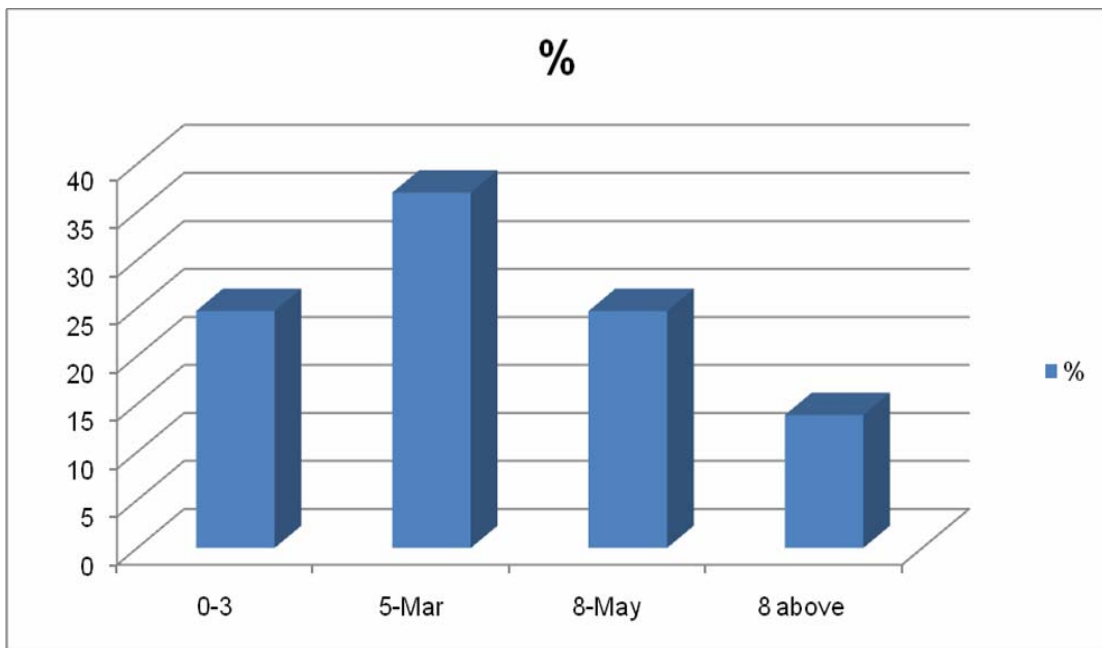
Land is important for vegetable farmers. if some ne have more land he/she can crow more vegetable than the people who have less land. The following table and figure shows the land holding size of the respondents.

Table: 4.8
Size of Landholding

Land holding size (ropani)	No.	%
0-3	25	25
3-5	38	38
5-8	24	24
8 above	13	13
Total	100	100

Source: Field Survey, 2014

Figure: 4.8
Size of Landholding



Source: Based on the Table No. 4.8

Table no. 4.8 and figure no. 4.8 show the respondents by land holding size; data show that 25% have 0 to 3 Ropani land and 38% have 3 to 5 Ropani. In the same way, 24% have 5 to 8 Ropani land, and 13% have more than 8 Ropani. It shows that most of the respondents have 3 to 5 Ropani land.

4.2.9 Status of Vegetables Farming

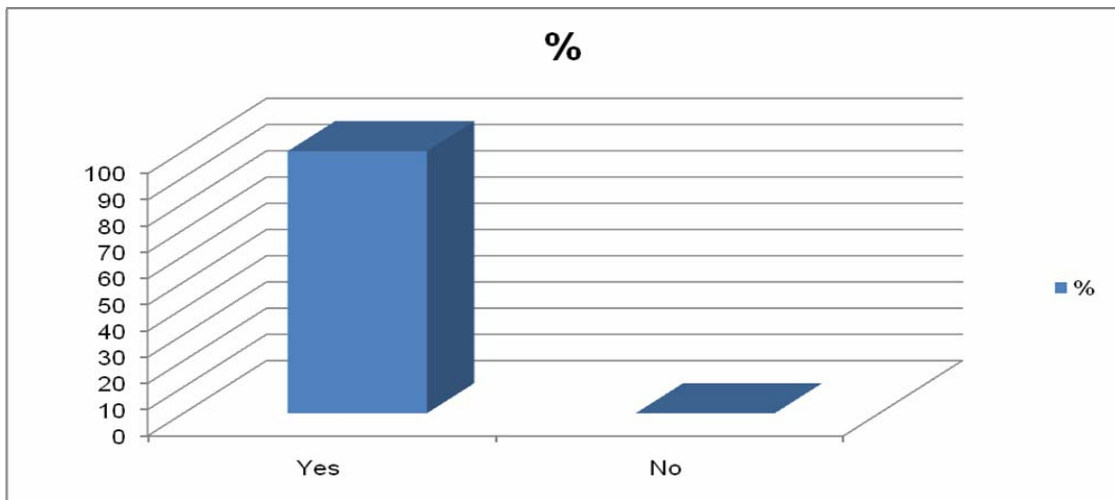
Most of the people living in study area are involve in vegetable farming because the area is pocket area of vegetable farming. The following table indicates the situation of vegetable farming of the respondents.

Table: 4.9
Vegetable Cultivated by Respondents

Vegetable Cultivated by Respondents	No.	%
Having cultivated	100	100
Not having cultivated	0	0
Total	0	100

Source: Field Survey, 2014

Figure: 4.9
Vegetable Cultivated by Respondents



Source: Based on the Table No. 4.9

Table no. 4.9 and figure no. 4.9 shows the status of vegetable farming in Nunthala VDC. In Nunthala VDC all the farmers are involved in vegetable farming. Its due to developed of different infrastructures as road, irrigation facility, vegetable collection center (house) from NGOs, INGOs, government office, developed market size, provided new knowledge and technology and creditor facilities by various providers and donors.

4.2.10 Types of Vegetable Cultivated by Respondents

In the study area farmers cultivated various types of vegetables such as Khursani Mula Venta and other. Nunthala is famous pumpkin and cauliflower although farmer cultivated potatoes and other types of vegetables. The following table shows types of vegetable farming in the study area.

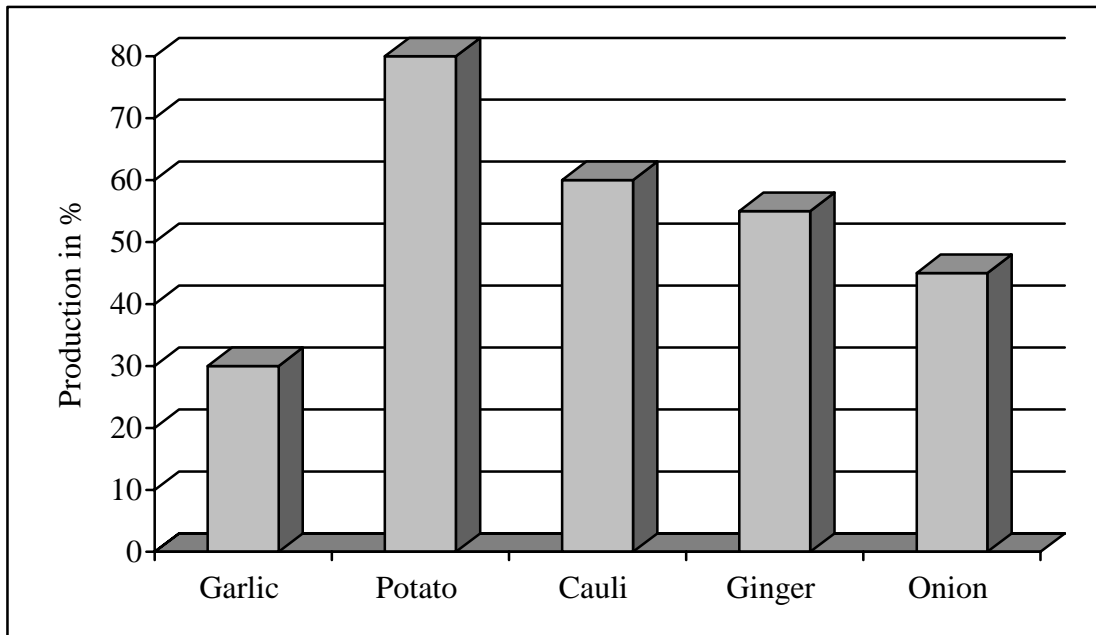
Table: 4.10
Types of Vegetable Cultivated by Respondents

Types	No.	%
Garlic	30	30
Potato	80	80
Cauli	60	60
Ginger	55	55
Onion	45	45

Source: Field Survey, 2014

Figure: 4.10

Types of Vegetable Cultivated by Respondents



Source: Based on the Table No. 4.10

Table no. 4.10 and figure no. 4.10 show the types of vegetable cultivated by respondents in the study area. Most of the respondents living in Nunthala cultivate 80% potato and 60% Cauli. So the area is famous for potatoes and Cauli's farming. In the same way 55% zinger, 45% onion and 30% garlic.

4.2.11 Period of Commercial Vegetable Farming

Main occupation of the people living in study area is agriculture. In Nunthala VDC people began vegetable farming since long time though in this study it has questioned to the respondents about commercial vegetable farming.

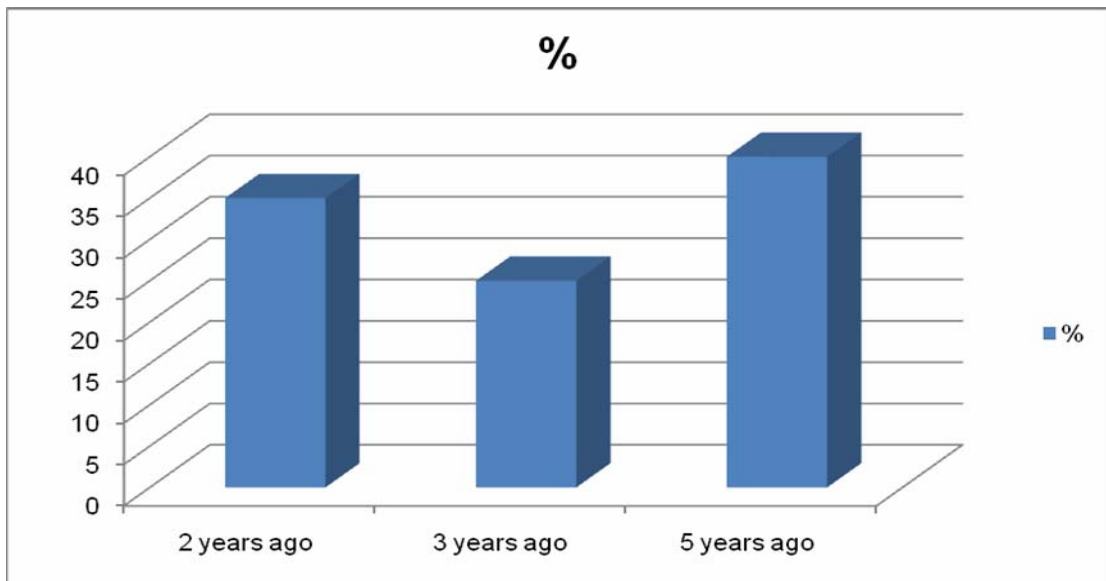
Table no. 4.11

Period of Commercial Vegetable Farming by Respondents

Time of Commercial vegetable farming by Respondents	No	%
2 years ago	35	35
3 years ago	25	25
More than 5 years ago	40	40
Total	100	100

Source: Field Survey, 2014

Figure: 4.11
Period of Commercial Vegetable Farming by Respondents



Source: Based on the Table No. 4.10

Table no. 4.10 and figure no. 4.10 show the time of farmers began vegetable farming in the study area. Data shows that 35% began two years ago and 25% started before 3 years. 40% started vegetable farming five years ago.

4.2.12 Credit Facility

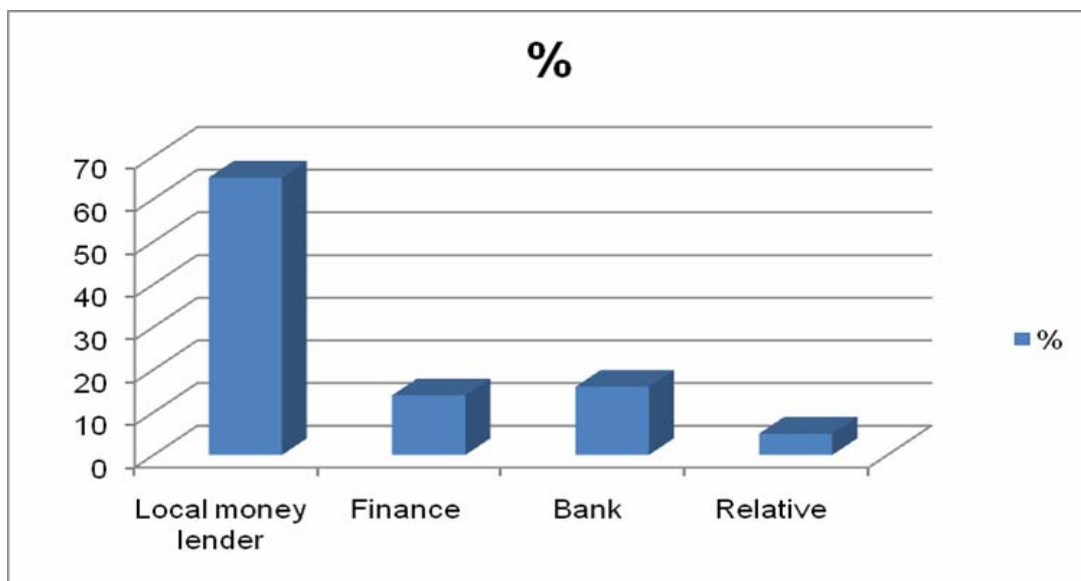
Most of the respondents of study area have taken loan for vegetable farming. They use loan to purchase seed of vegetable and other necessary chemical fertilizer and other things. The following table shows the loan taking trends of respondents

Table: 4.12
Respondents by Credit Facility

Sources of lone	\1	%
Local money lender	65	65
Finance & cooperative	14	14
Bank	16	16
Relative	5	5

Source: Field Survey 2014

Figure: 4.12
Respondents by Credit Facility



Source: Based on the Table No. 4.12

Table no. 4.12 and figure no. 4.12 show the respondents by sources of loan. Out of the 100 respondents 65% are taking loan from local money lender, 14% are taking loan from finance and cooperative. Likewise 16% are taking from bank and only 5% respondents are taking loan from their relatives. Most of the respondents are taking loan from local money lender and least of respondents are taking loan from their relatives.

4.3 Contribution of Vegetable Farming in Income Generation

Nepalese economy is based on agriculture. 38% GDP is occupied by agriculture (CBS, 2011). Among them vegetables covers 12% GDP including cash crops. People can easily sell their production in Diktel valley. By selling the green vegetable people living in study area enhance their economic situation. Vegetable become the main source of income of the study area which describes detail as follows;

4.3.1 Respondents by Annual Income

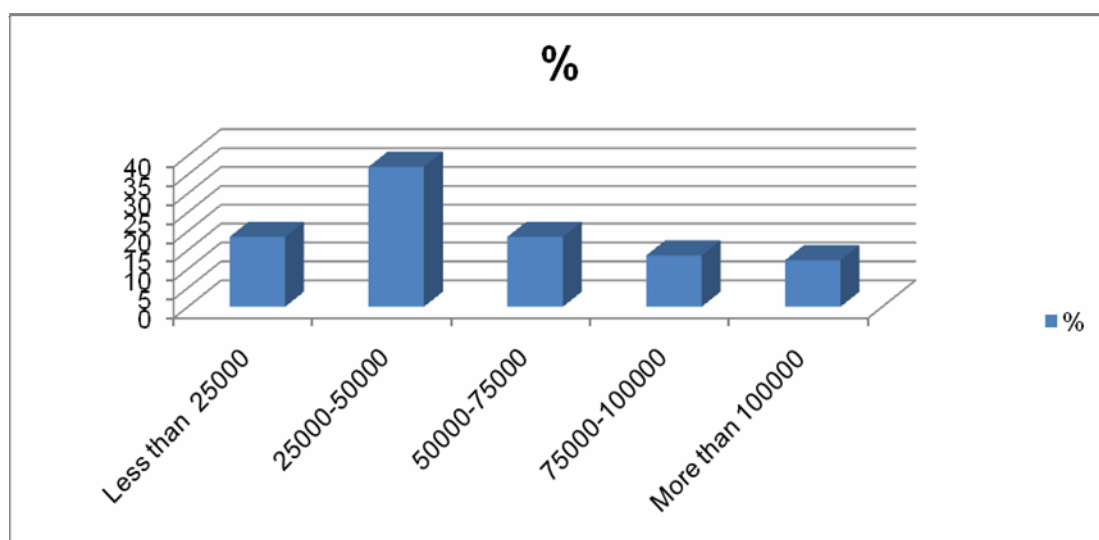
Annual income is one of the important indicators of economic upliftment. The following table and figure show the annual income of the respondents.

Table: 4.13
Respondents by Annual Income

Annual income in (000)	No.	%
Less than 25	21	21
25-50	38	38
50-75	18	18
75-100	13	13
More than 100	10	10
Total	100	100

Source: Field Survey, 2014

Figure: 4.13
Respondents by Annual Income



Source: Based on the Table No. 4.13

Table no. 4.13 and figure no. 4.13 explain the annual income of the respondents. Data shows that 21% earn less than 25 thousand and 38% earn more than 25-50 thousands. In the same way, 18 earn 50 to 75 thousand. In the same way, 13% earn 75-100 thousands. Only 10% earn more than one Lakha.

4.3.2 Annual Income from Vegetable Farming

Vegetable farming is one of the important sources of income. The following table and figure show the annual income by getting respondents from vegetable.

Table: 4.14

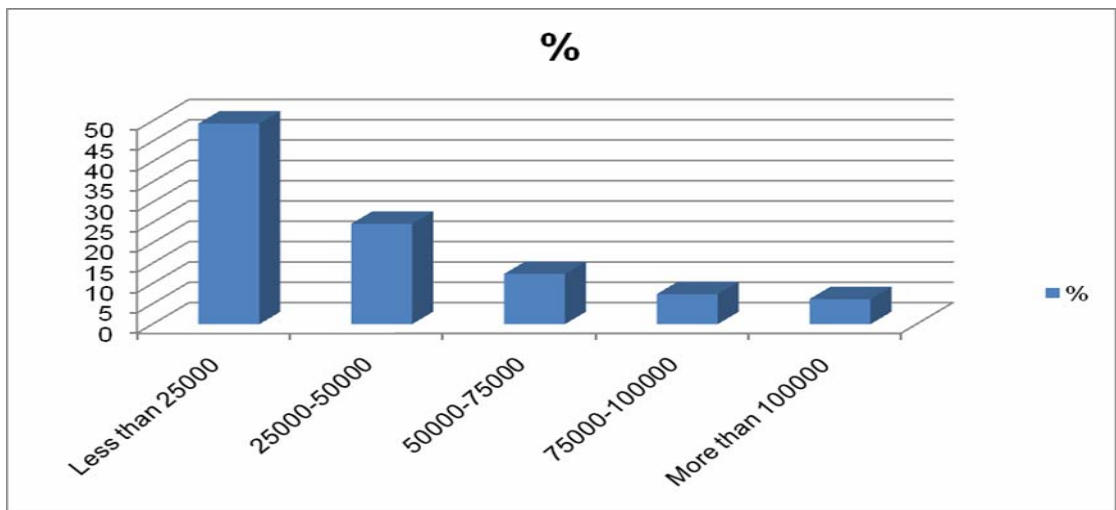
Respondents by Annual Income from Vegetable

Annual income from vegetable(000)	No.	%
Less than 25	48	48
25-50	25	25
50-75	12	12
75-100	8	8
More than 100	7	7
Total	100	100

Source: Field Survey, 2014

Figure: 4.14

Respondents by Annual Income from Vegetable



Source: Based on the Table No.5.14

Table no. 4.14 and figure no. 4.14 indicate the annual income of respondents by vegetable. Data shows that 48% earn less than 25 thousands and 25% earn 25 to 50 thousands. In the same way, 12% earn 50 to 75 thousand and 8% earn 75 to 100 thousand. Only 7% earn more than one lakha . It shows the income is very low.

4.3.3 Annual Expenditure of Respondents in different Sectors Earning by Vegetable Selling

Respondents fulfill various necessary by selling vegetable. The following table and figure show the situation of respondents' earning from vegetable.

4.3.3.1 Respondents' Expenditure on Health

Table: 4.15

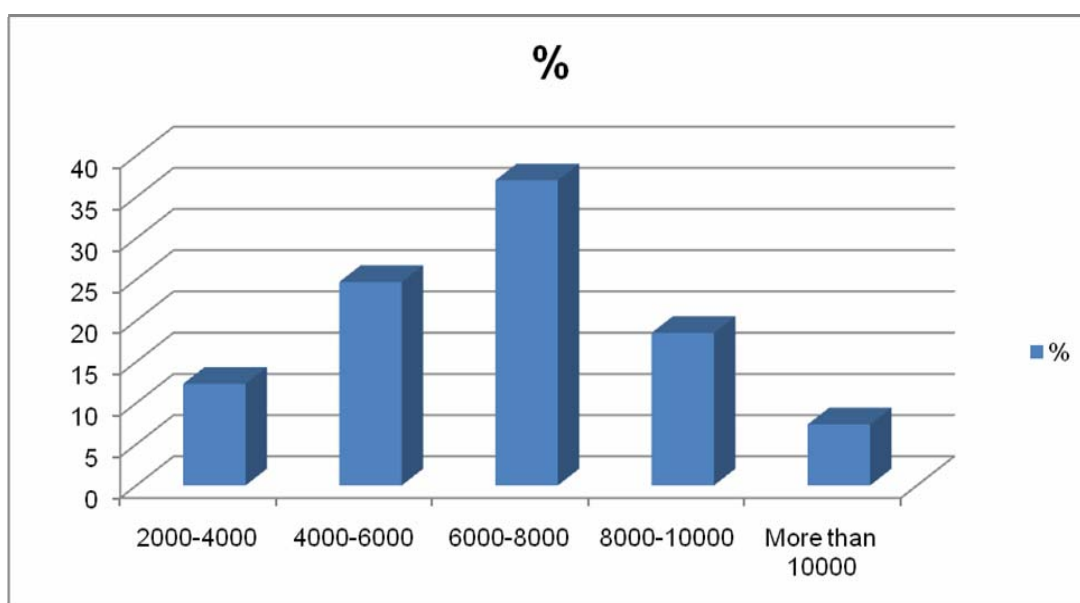
Respondents' Expenditure on Health

expenditure in health	No .	%
2000-4000	12	12
4000-6000	25	25
6000-8000	38	38
8000-10000	18	18
More than 10000	7	7
Total	100	100

Source: Field Survey, 2014

Figure: 4.15

Respondents' Expenditure on Health



Source: Based on the Table No. 4.15

Table no. 4.15 and figure no. 4.15 show the annual expenditure of the respondents in health. Data shows that 12% spend in health 2 to 4 thousands and 25% spend 4 to 6 thousands. In the same way, 38% spend 6 to 8 thousands and 18% spend 8 to 10 thousands. Only 7% spend more than 10 thousands.

4.3.3.2 Respondents' Expenditure on Consumers Goods

Respondents spend their income in various consumer goods. The following table and figure show the situation of respondents' expenditure.

Table: 4.16

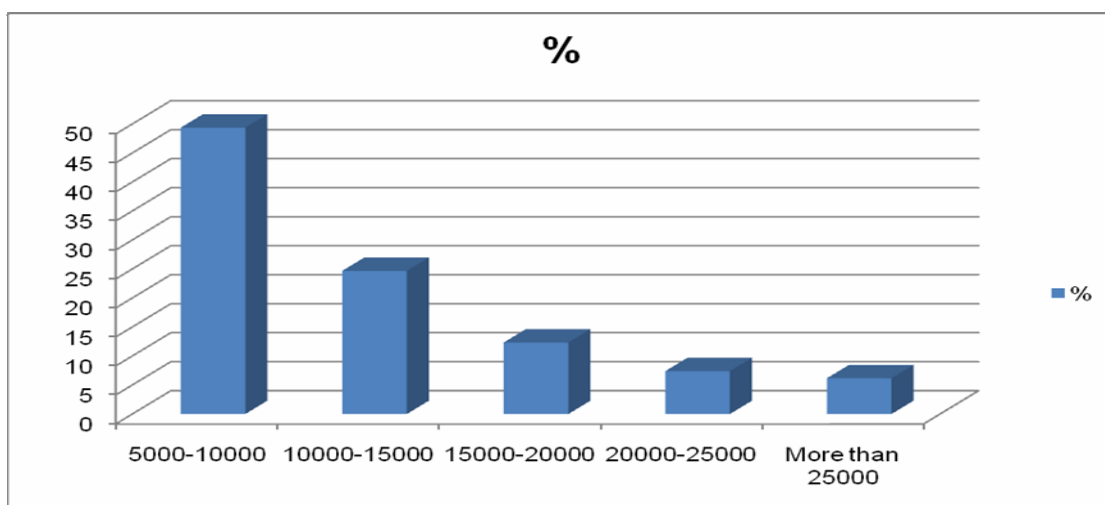
Respondents' Expenditure on Consumers Goods

expenditure in consumers goods	No.	%
5000-10000	50	50
10000-15000	24	24
15000-20000	12	12
20000-25000	8	8
More than 25000	6	6
Total	100	100

Source: Field Survey, 2014

Figure: 4.16

Respondents' Expenditure on Consumers Goods



Source: Based on the Table No. 4.16

Table no. 4.16 and figure no. 4.16 present the respondents expenditure in consumer's goods. Data shows that 50% spend 5 to 10 thousand and 24% spend 10 to 15 thousands. In the same way 12% spend 20 to 25 thousands and 6% spend more than 25thousands.

4.3.3.3 Respondents' Expenditure on Education

Education is one of the main sources of expenditure. Most of the respondents spend in education. The following table and figure shows the situation of expenditure that spends by respondents.

Table: 4.17

Respondents' Expenditure on Education

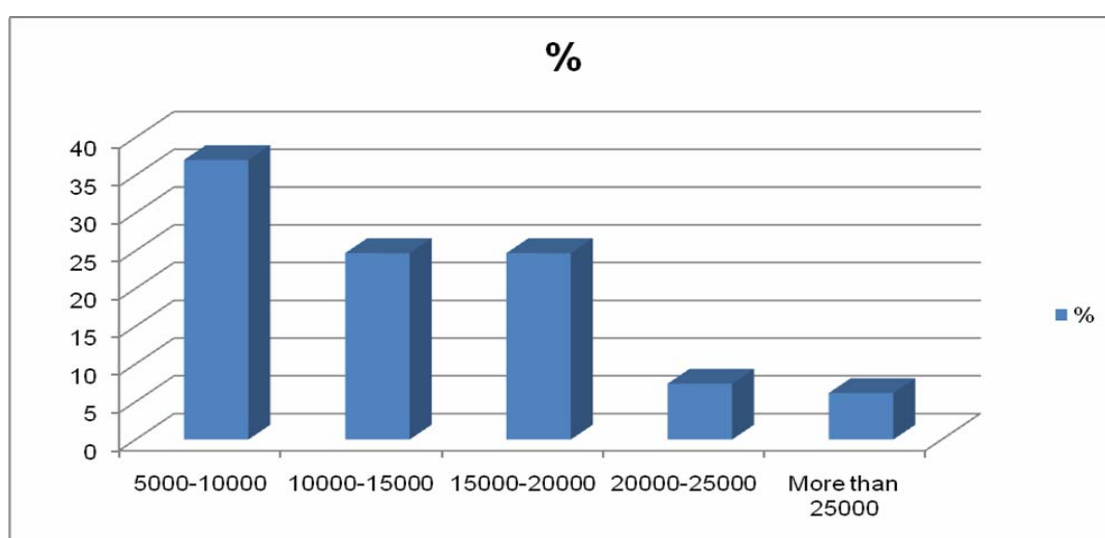
Expenditure in education	No.	%
5000-10000	37	37
10000-15000	25	25
15000-20000	24	24
20000-25000	8	8
More than 25000	6	6
Total	100	100

Source: Field Survey, 2014

Table no. 4.17 and figure no. 4.17 above indicate the respondent's expenditure on education. Data shows that 37% spend 5 to 10 thousand and 25% spend 10 to 20 thousand. In the same way, same 24% spend 15 to 20 thousand and 8% spend 20 to 25 thousands. Only 6% spend more than 25 thousands.

Figure: 4.17

Respondents' Expenditure on Education



Source: Based on the Table No. 4.17

4.3.3.4 Respondents' Expenditure on Staple Food

In the study area people use to purchase food for some times. So, they also spend on food. The following table and figure show the situation expenditure that respondents have done in food.

Table: 4.18

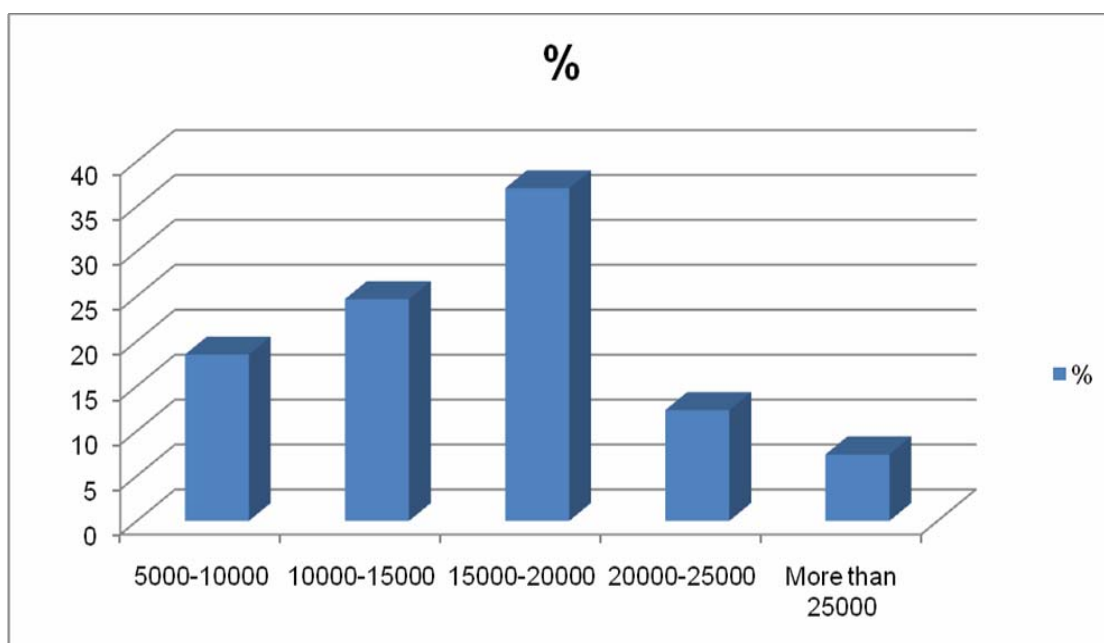
Respondents' Expenditure on Staple Food

expenditure in staple food	No.	%
5000-10000	18	18
10000-15000	25	25
15000-20000	38	38
20000-25000	12	12
More than 25000	7	7
Total	100	100

Source: Field Survey, 2014

Figure: 4.18

Respondents' Expenditure on Staple Food



Source: Based on the Table No. 4.18

Table no. 4.18 and figure no. 4.18 show respondents expenditure on stable food. Data shows that 18% spend 5 to 10 thousand and 25% spend 10 to 15 thousand.

In the same way, 38% spend 15 to 20 thousand. Similarly 12% spend 20 to 25 thousands and 7% spend more than 25 thousand.

4.3.3.5 Respondents' Expenditure on Fuel

Some of income earned by respondents spends in fuel also. The following table and figure show the situation of respondents by spending in fuel such as petrol, Deisel, Kerosen etc.

Table: 4.19

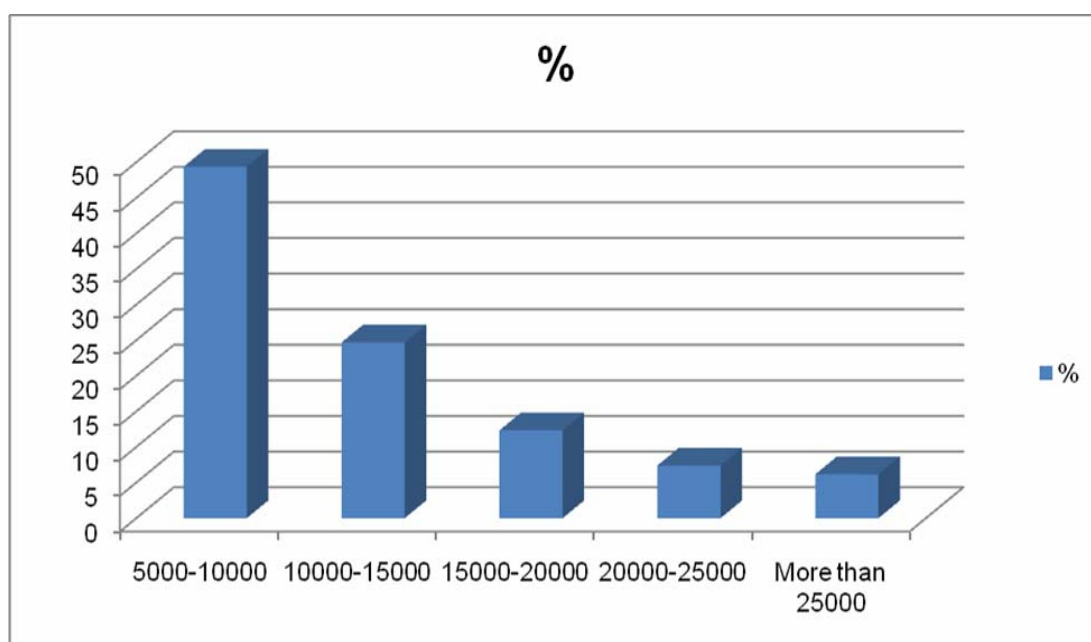
Respondents' Expenditure on Fuel

Expenditure in fuel	No.	%
5000-10000	50	50
10000-15000	25	25
15000-20000	12	12
20000-25000	7	7
More than 25000	6	6
Total	100	100

Source: Field Survey, 2014

Figure: 4.19

Respondents' Expenditure on Fuel



Source: Based on the Table No. 4.19

Table no. 4.19 and figure no. 4.19 show the respondents expenditure in fuel. Data shows that 50% spend 5 to 10 thousand and 25% spend 10 to 15 thousand. In the same way, 12% spend 15 to 20 thousand and 7% spend 20 to 25 thousand. Only 6% spawned more than 25 thousand.

4.3.3.6 Other Title of Expenditure

Except major titles, respondents also spend on other titles that are mentions as below table and figure

Table: 4.20

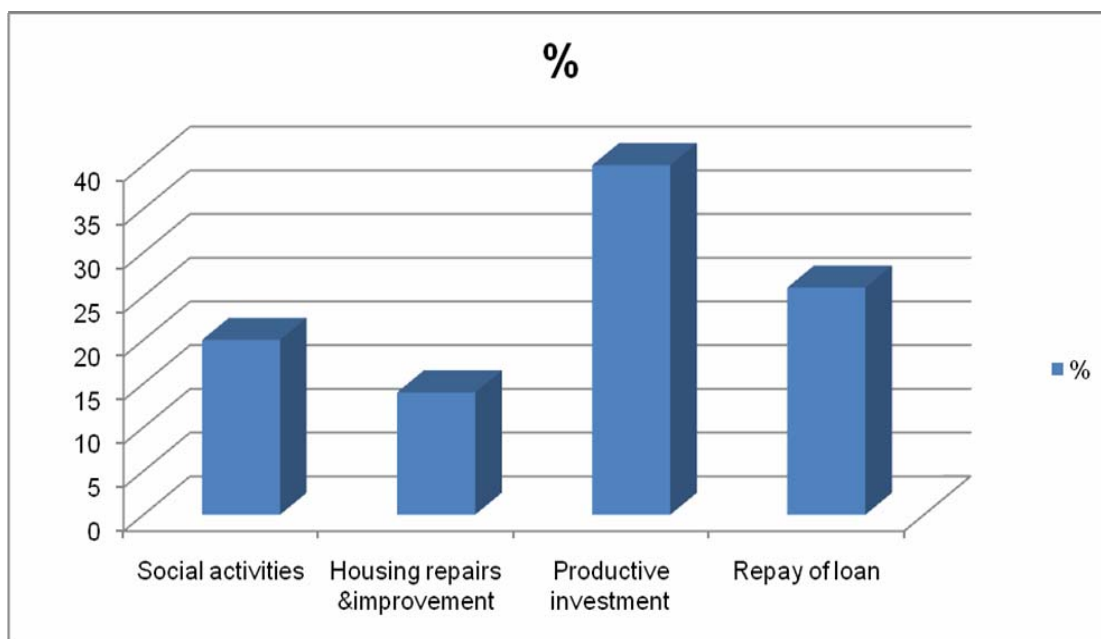
Other Title of Expenditure

Title	No.	%
Social activities	20	20
Housing repairs & improvement	14	14
Productive investment	40	40
Repay of loan	26	26
Total	100	100

Source: Field Survey, 2014

Figure: 4.20

Other Title of Expenditure



Source: Based on the Table No. 4.20

Table no. 4.20 and figure no. 4.20 above present the other expenditure of the respondents. Data shows that 50% spend in social activities and 14% spend in house repairs and improvement. In the same way, 40% spend productive investment and 26% use loan repay.

4.3.4 Respondents' Knowledge and Skill

Farmers have traditional skill of farming though it needs training for vegetable production. The following table shows the situation of having training.

Table: 4.21

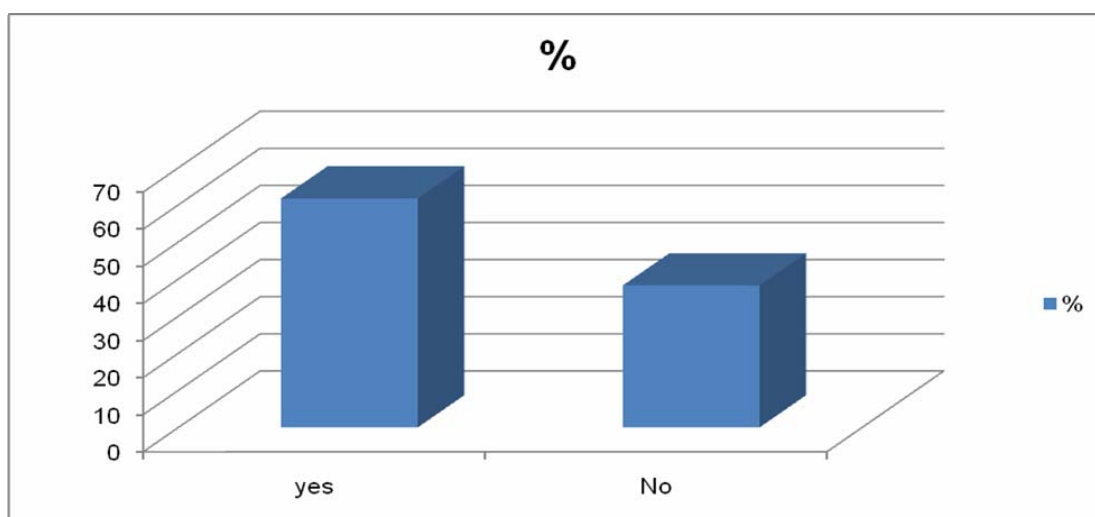
Respondents' Knowledge and Skill

Having Knowledge and Skill	No.	%
Government office	25	25
Private Sectors	50	50
Own experience	13	13
Other	12	12
Total	100	100

Source: Field Survey, 2014

Figure: 4.21

Respondents' Knowledge and Skill



Source: Based on the Table No. 4.21

Table no. 4.21 and figure no. 4.21 show the respondents by having training. Data shows that 25% get training support by Nepal government 50% get private

sector,13% are get knowledge their own experiences and another 12% are get training other sector .

4.4 Trend of Vegetable Production in Nunthala VDC

Before few years, commercial vegetable farming started in the study area. Before establish collection centre the area is famous potato. People cultivate potato is famous last two decade before. Now 70% people of the village involved in commercial vegetable farming in the study area. The followings tables show the situation of commercial vegetable faming in the study area.

4.4.1 Respondents' by Quantity of Vegetable Production in the Study Area

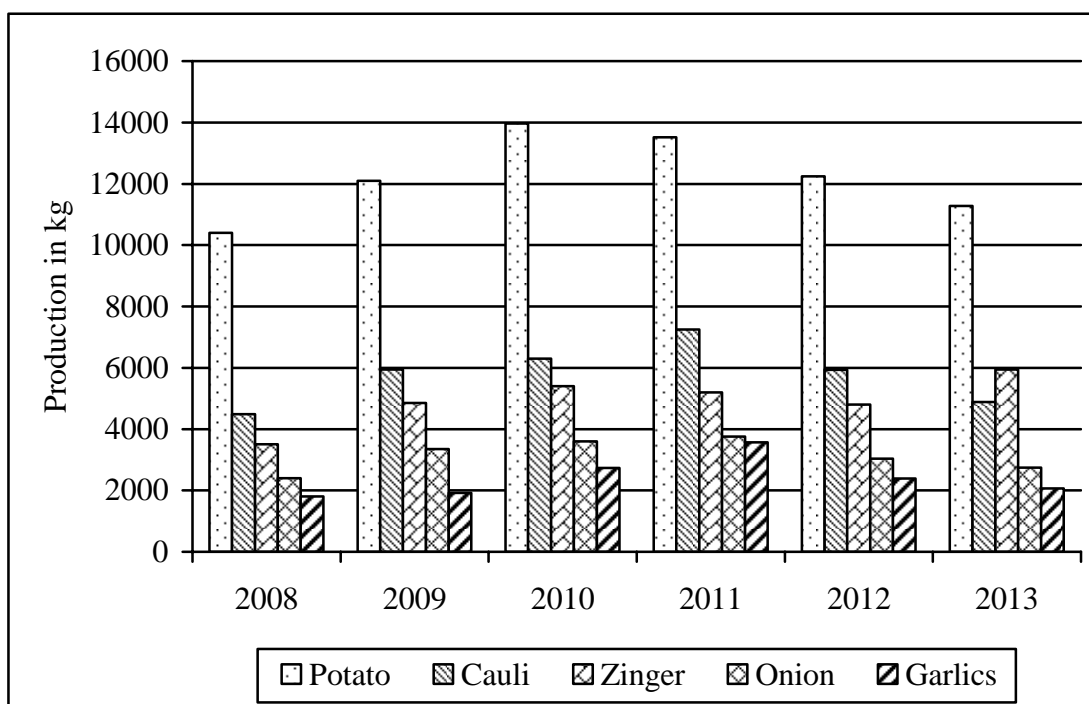
Respondents of the study area farmers produced various types of vegetable in different time period such as potato, cauli, onion, ginzer and garlics. The following table and figure show the quantity of vegetable production follow by respondents.

Table No. 4.22
Respondents' by Quantity of Vegetable Production

Years	Types of Vegetable Production														
	Potato			Cauli			Zinger			Onion			Garlics		
	Area in (Ropani)	Production in (kg)	Percent	Area in (Ropani)	Production in (kg)	Percent	Area in (Ropani)	Production in (kg)	Percent	Area in (Ropani)	Production in (kg)	Percent	Area in (Ropani)	Production in (kg)	Percent
2008	40	10400	14.1	14	4480	12.9	10	3500	11.8	8	2400	12.7	6	1800	12.4
2009	44	12100	16.5	17	5950	17.1	13	4850	16.3	11	3350	17.8	6	1920	13.3
2010	49	13965	19.0	18	6300	18.1	17	5400	18.2	12	3600	19.1	9	2735	18.9
2011	51	13515	18.4	21	7250	20.9	17	5190	17.5	13	3755	19.9	10	3565	24.6
2012	50	12250	16.7	18	5930	17.0	15	4800	16.2	10	3030	16.0	8	2385	16.5
2013	47	11280	15.3	16	4885	14.0	17	5950	20.0	9	2745	14.5	7	2065	14.3
Total	281	73510	100.0	104	34795	100.0	89	29690	100.0	63	18880	100.0	46	14470	100.0

Source: Field Survey, 2014.

Figure 4.22
Respondents' by Quantity of Vegetable Production



Source: Field Survey, 2014.

Table No. 4.22 and Figure No. 4.22 show the quantity of vegetable production in different time period in the study area. Data indicate 73510 kg potato in 281 ropani, 34794 kg cauli in 104 ropani, 29690 kg zinger in 63 ropani, 18880 kg onion in 63 ropani and 14470 kg Garlic in 26 ropani produced during 2008 to 2013 respectively. According to data the quantity of vegetable production is fluctuated due to change in weather environment, change in labor supply etc.

4.4.2 Source of Labor Supply for Vegetable Cultivation

In the study area farmers received labor supply from various sources as hired labor, exchange labor, family member etc. The following table and figure show the various source of labor supply.

Table: 4.23

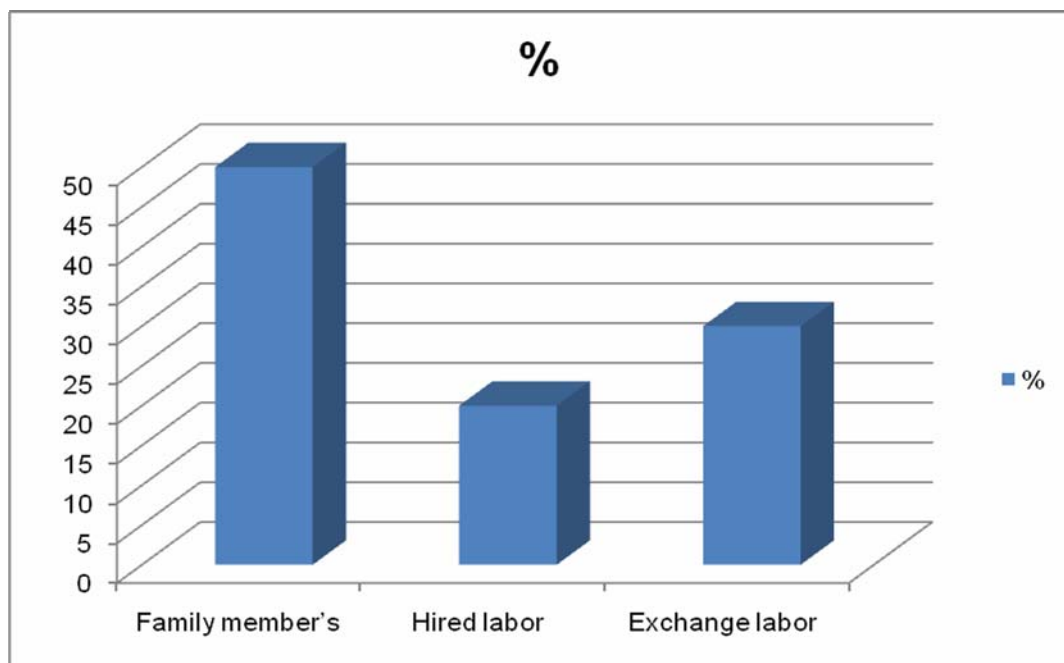
Source of Labor Supply for Vegetable Cultivation

Sources	No.	%
Family member's	50	50
Hired labor	20	20
Exchange labor	30	30
Total	100	100

Source: Field Survey, 2014

Figure: 4.23

Source of Labor Supply for Vegetable Cultivation



Source: Based on the Table No. 4.23

Table no. 4.23 and figure no. 4.23 show the sources of labor supply in vegetable farming. Data shows that 50% use family members as labour and 20% hired from market. In the same way, 30% provide labor by exchange

4.4.3 Season-wise Vegetable Farming

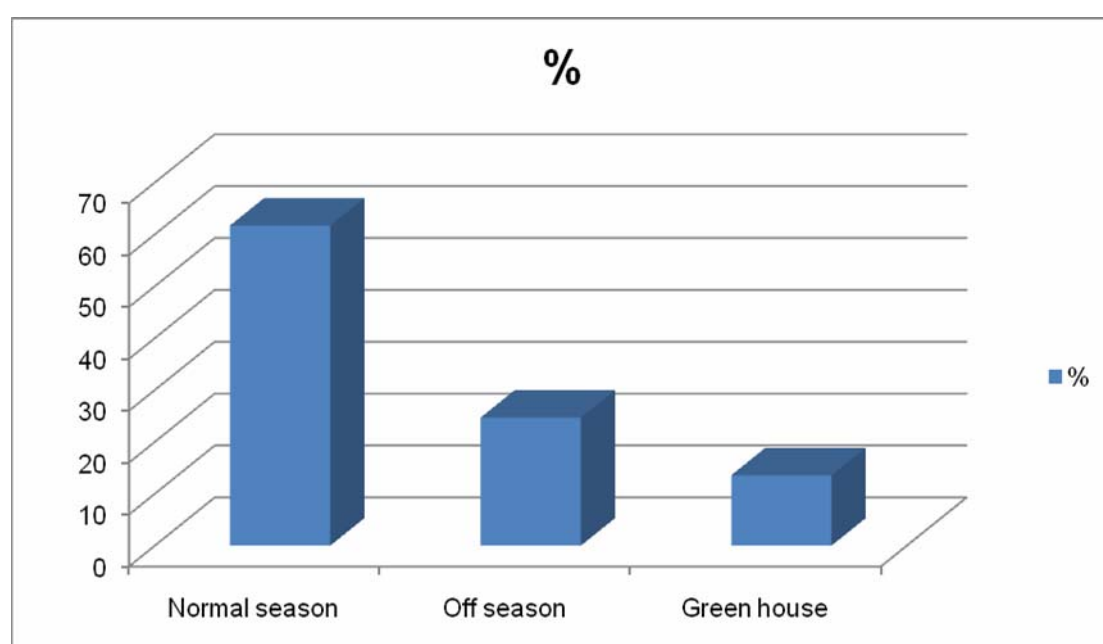
Respondents' of the study area have been grown vegetable in different season. The following table and figure show the season of vegetable farming follow by respondents.

Table: 4.24
Season-wise Vegetable Farming

Season	No.	%
Normal season	60	60
Off season	24	24
Green house	16	16
Total	100	100

Source: Field Survey, 2014

Figure: 4.24
Season-wise Vegetable Farming



Source: Based on the Table No. 4.24

Table no. 4.24 and figure no. 4.24 show the vegetable farming season of respondents. Data shows that 60 % grow in normal season and 24% grow in off season. Only 16% grow by using greenhouse. It shows that most of the farmer grow vegetable during normal season.

4.4.4 Status of the Vegetable Farming in Study Area

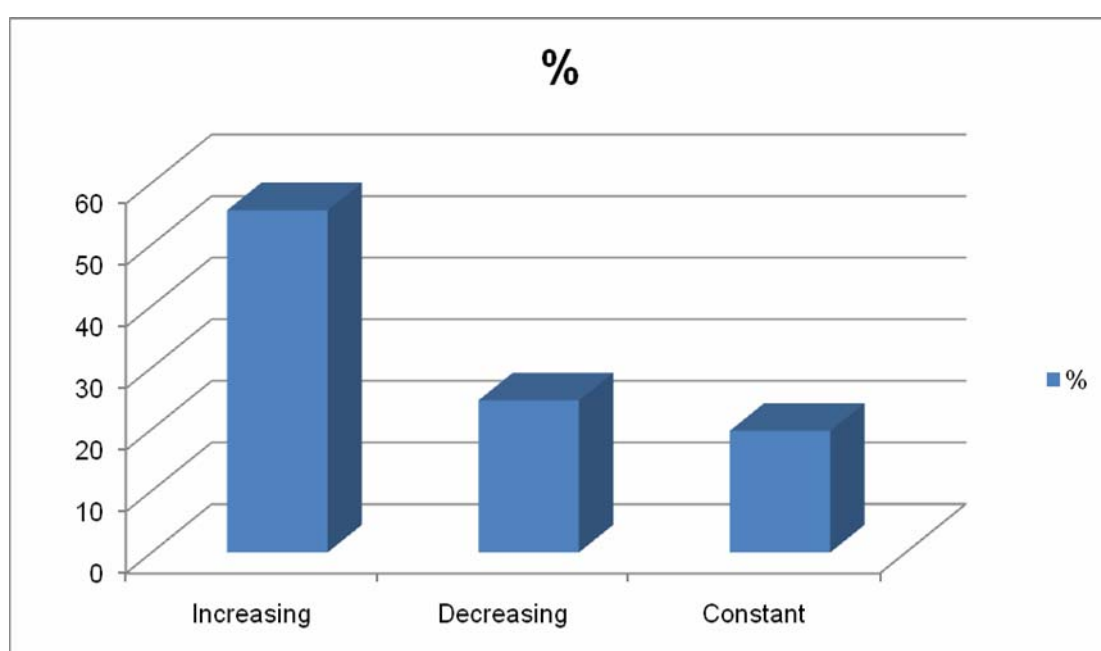
Nunthala is famous for vegetable farming people usually involved in vegetable farming. The following table and figure shows the ongoing trend of vegetable farming in the study area.

Table: 4.25
Status of the Vegetable Farming in Study Area

Situation	No.	%
Increasing	55	55
Decreasing	24	24
Constant	21	21
Total	100	100

Source: Field Survey, 2014

Figure: 4.25
Status of the Vegetable Farming in Study Area



Source: Based on the Table No. 4.25

Table no. 4.25 and figure no. 4.25 show the situation of vegetable farming in the study area. Data shows that 55% give increasing and 24% give answer 'decreasing'. Only 21% give answer constant. it shows that it is in increasing trend.

4.4.5 Availability of Irrigational

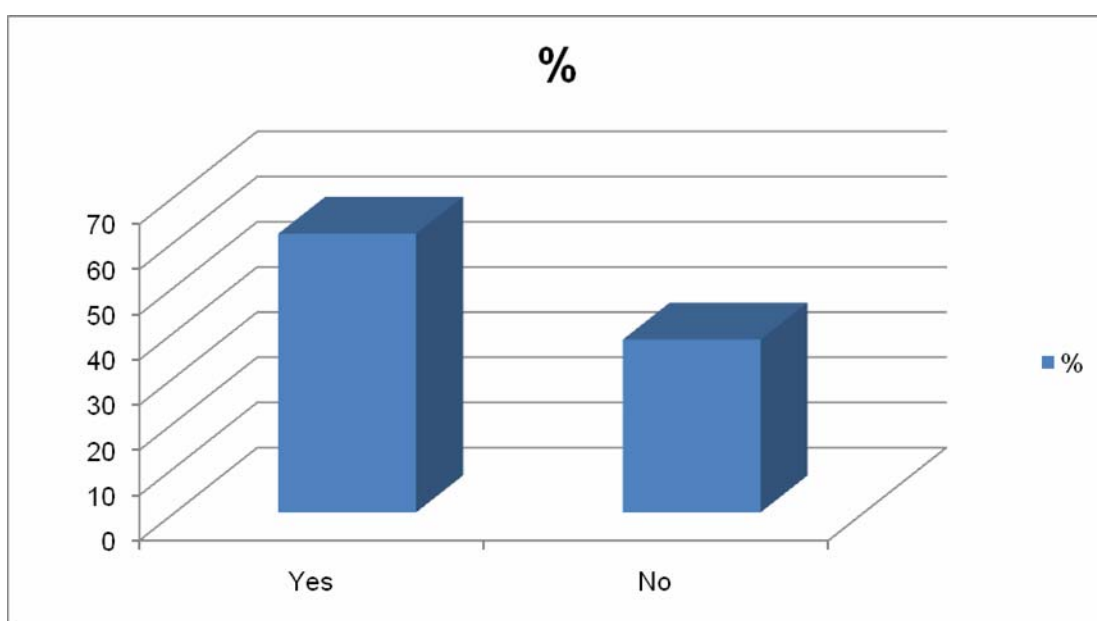
Irrigation is important for vegetable farming. The following table and figure show the situation of getting irrigation facilities by respondents.

Table: 4.26
Availability of Irrigational

Respondents by Getting Irrigation Facility	No.	%
Having irrigational facility	60	60
Not having irrigation facility	40	40
Total	100	100

Source: Field Survey, 2014

Figure: 4.26
Availability of Irrigational



Source: Based on the Table No. 4.26

Table no. 4.26 and figure no. 4.26 explain the respondents by getting irrigational facility. Data shows that 60% get irrigational facility and 40% do not get irrigation facility.

4.4.6 Agent of Providing Support to Respondents

In Nunthala VDC various INGOs and NGOs are working for various activities related to income generation work including farming. The following table and figure also indicates the support providing situation.

Table: 4.27

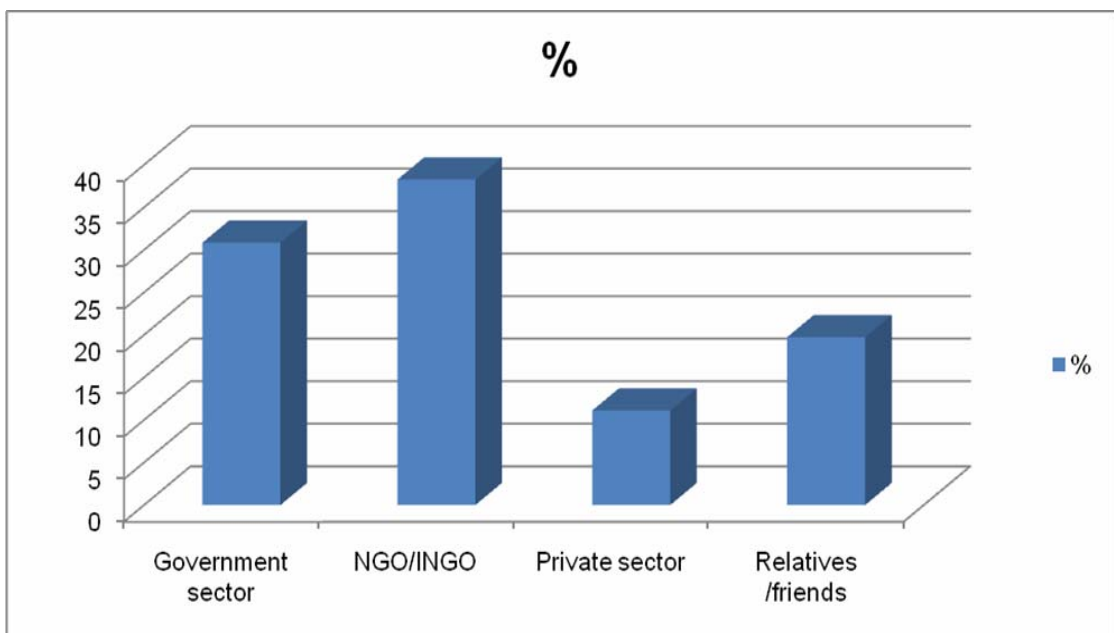
Agent of Providing Support to Respondents

Agent of providing support to identify and supply improved input such as seeds fertilizers, pesticide and other	No.	%
Government sector	30	30
NGO/INGO	40	40
Private sector	11	11
Relatives /friends	19	19
Total	100	100

Source: Field Survey, 2014

Figure: 4.27

Agent of Providing Support to Respondents



Source: Based on the Table No. 4.27

Table no. 4.27 and figure no. 4.27 above show the agent of providing support to respondents. Data shows that 30% from government sector and 40% from NGO sectors. In the same way 11% from private sector and 19% from relatives and friend. NGO sector support is high in commercial vegetable farming.

4.4.7 Center of Selling Vegetables

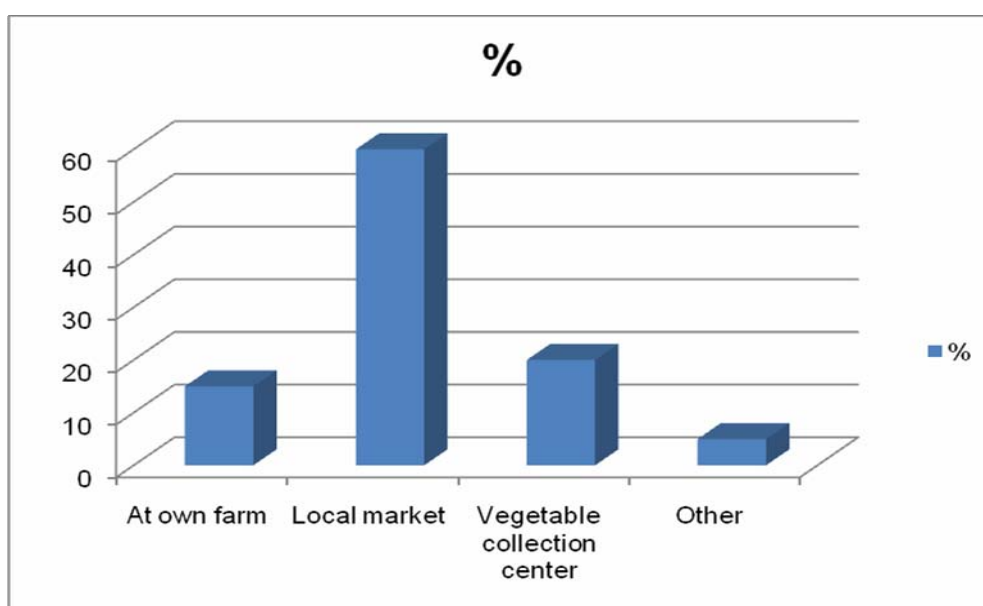
Selling is one of the important factors of vegetable farming. Without proper selling system it is impossible for earning. The following table shows the selling of vegetable in Nunthala VDC

Table: 4.28
Center of Selling Vegetables

Place by selling vegetable	No.	%
At own farm	15	15
Local market	60	60
Vegetable collection center	20	20
Other	5	5
Total	100	100

Source: Field Survey, 2014

Figure: 4.28
Center of Selling Vegetables



Source: Based on the Table No. 4.28

Table no. 4.28 and figure no. 4.28 show the place where respondents sell the vegetable. Data show that 15% sell from farm and 60% sell from local market. In the same way 20% sell from vegetable collection centre and 5% sell in other places.

4.5 Problems and prospects of vegetable farming in the study area

In this section it analyzes problems and prospects of vegetable farming in Nunthala VDC.

4.5.1 Problems being Faced by Vegetable Farmers

There are various problems respondents faced in day to day life while cultivating vegetable. The following table shows the respondents opinion about ongoing problems.

Table: 4.29

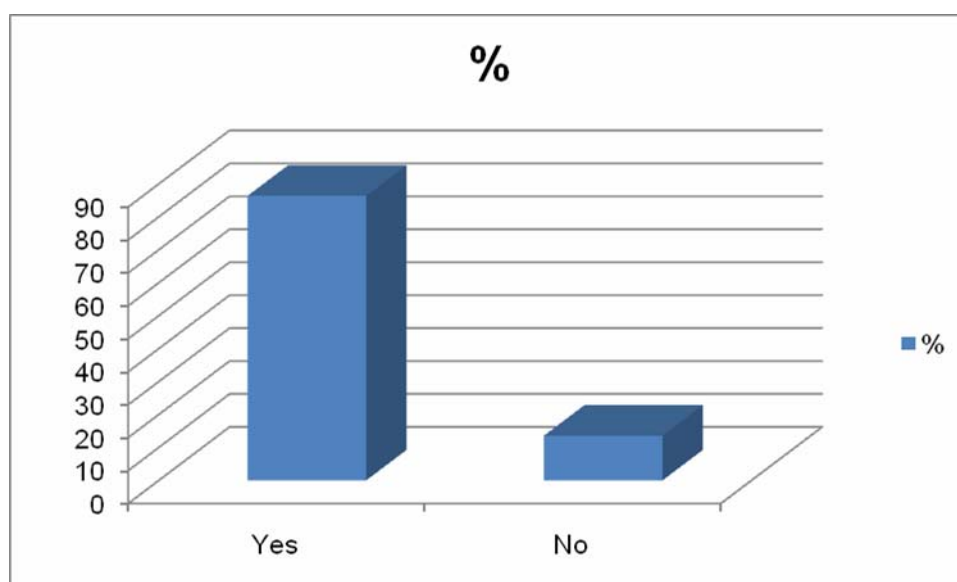
Problems being Faced by Vegetable Farmers

Faced problem regarding vegetable farming	No.	%
Number of faced problem regarding vegetable	86	86
Number of non-faced problem regarding vegetable	14	14
Total	100	100

Source: Field Survey, 2014

Figure: 4.29

Problems being Faced by Vegetable Farmers



Source: Based on the Table No. 4.29

Table no. 4.29 and figure no. 4.29 show the he having problems of respondents regarding vegetable farming. Data shows that 86% have faced problem and 14% have not problem. It shows that majority have problems.

4.5.1.1 Type of Problems Regarding Vegetable Farming

There are various problems have faced by farmers while they involve in vegetable farming. The following table and figure shows the problems have faced by farmers while cultivating vegetable.

Table: 4.30

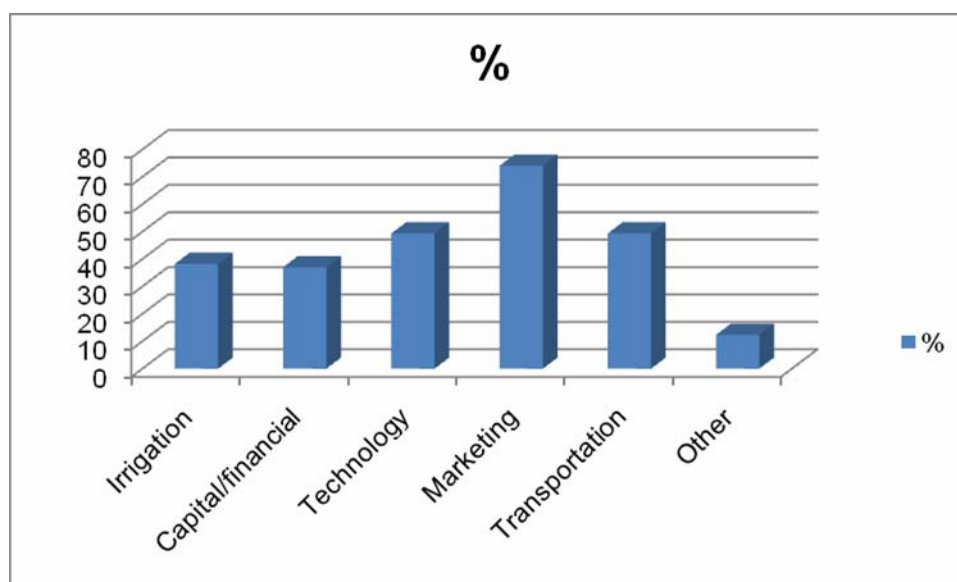
Type of Problems Regarding Vegetable Farming

Problem	No.	%
Irrigation	40	40
Capital/financial	37	37
Technology	50	50
Marketing/price	74	74
Transportation	50	50
Other	12	12

Source: Field Survey, 2014

Figure: 4.30

Type of Problems Regarding Vegetable Farming



Source: Based on the Table No. 4.30

Table no. 4.30 and figure no. 4.30 show the problems faced by farming regarding vegetable farming. Data shows that 40% faced irrigation and 37% faced capital. In the same way, 50% faced technology and 74% faced problem of getting

reliable price and 50% faced the problem of transportation. Similarly, 12% faced other problem like disease.

4.5.2 Other Problems

There are various problems in farming in study \area which are as follows ;

- i. There is no plain land in the study area so it is impossible to use tractor so production cost is high
- ii. There is lack of irrigation because most of the land is dry and steep. only rainy season it is possible; of cultivate commercial vegetable
- iii. There I problem of fertilizer and other pesticide because without using it is impossible for commercial vegetable farming.
- iv. Labour cost is high so production cost also high so it is difficult to refund cost
- v. Some time the price of vegetable is very low because in terai farm production cost is low .At that time most of the farmer go in loss.

4.5.3 Prospects of Vegetable Farming in the Study Area

Above analysis shows there is great opportunity of vegetable farming in the study area. Some of the prospects are mention as follows;

- i. **Market :** Diktel Bazar, Paipa Bazar, Arkhoule Bazar and Jalpa Bazar are near to the study area and there are facilities road so, market and transportation is easy.
- ii. **Facilities of collection center :** There are collection center is village such as potato, zinzer, onion, garlic collection center so there is not problem of collection center.
- iii. **Supporter in vegetable farming :** Government and non-government sectors support in vegetable farming in the study area such as District Agriculture Development Office, Janasewa Samaj Nepal, Akata Samaj Nepal and Healpatas Nepal.

- iv. **Prospect of vegetable farming** : People show interest vegetable farming its due to provide new method and technology.
- v. It became the main income source and alleviates poverty from the village.

CHAPTER: V

SUMMARY, FINDINGS AND CONCLUSION AND RECOMMENDATIONS

5.1 Summary

The general objective of the study is to examine and analyze the role of commercial vegetable farming for economic enhancement. It identifies the socio-economic characteristics of the respondents, explore the contribution of commercial vegetable farming in income generation and identify the problems and prospects of commercial vegetable farming in the study area. This study has great importance at national and local levels at the national level; it will be very helpful to make plan and policies for economic development. This study will also indicate some way to the future researcher also offer information to the people interested in commercial vegetable farming.

The present study was carried out in Nunthala VDC of Khotang district, which is located in the eastern development region in Sagamatha Zone. The economic status of this district is normal. Agriculture is the main occupation of this VDC. The study area was selected for this study because it is accessible for the researcher and such kind of research has been done in this area before. The study is used exploratory and descriptive research design. This study is a socio-economic study of the objectives of the study has been fulfilled by using exploratory cum descriptive research design. The study has been based on both secondary and primary data and information. Secondary data were used to present the background of the study and supplement and complement the findings of the study. Secondary data were collected from various sources such as books, journals, previous theses on the subject and government publications.

Nunthala VDC of Khotang district was selected for the study where about 360 households. Among them 100 household were selected by using purposive sampling techniques. from each households one respondents were selected. The entire respondent was participated in cooperative. Personal interview has been taken from the selected household. From each household hold one respondent was selected from interview. Structured questionnaire, Focus on Group Discussion (FGD), key informant interview and observation were used for collecting data from the selected

households. The field survey was conducted after passed this proposal. The household survey has been conducted in order to collect qualitative and quantitative facts about socio-economic status of people living in the study, poverty situation and the role of agriculture in upliftment of economic condition. Certain information has been collected observation method. Researcher observe agriculture activities such as farming, selling goods, house pattern etc and guess the situation of economic status. Observation also helps to check the information provided in the interview. Key informant interview is also used using checklist. The key informants of this study were local leader, cooperative manager, VDC secretary etc. Researcher obtained proper method of data analysis according to the nature of data and information. Collected data and information were presented and analysis by using simple mathematical and statistical tools such as table graph percentage etc.

5.2 Findings and Conclusion

On the basis of primary data, following conclusions have been drawn in this study which is as follows.

- It has founds as, 70% are Rai. In this way, 5% are Sherpa, Only 20% respondents are Tamang and 5% are Dalit. Among them caste and ethnicity Rai are highest then other caste and Dalit are less participation in the vegetable farming.
- 55% of the respondents are male and 45% are female respondents in this study. Majority of the respondents are male in this study. 16% are between 15-25 years and 35% are between age group 25-35. In the same way, 25% are between age group 35 between 45 years age group.
- Similarly, 12% are between age group 45 -55 years and similarly 12% are between age group 55 to 65. It shows that majority of the respondents are between age group 25 to 35and minority on age group 55 to 65. 20% are unmarried. Among those respondents married is high involvement in vegetable farming. 20% respondents are below primary; similarly 30% are passed primary.

- In the same way, 24% are passed lower secondary level and 14% are passed secondary levels and remaining 12% are passed higher secondary level. Among them below primary and lower secondary passed respondents are highest than other level. 62% of the respondents are involve in agriculture and 18% are made service sector as occupation, In the same way 12% involve in business and 13% are involve in other occupation like labor and work both near area and abroad. 38% respondents have 5 to 10 family members, and 12% have above 10 family members. High respondents have 0 to 5 numbers of family members.
- 38% GDP is occupied by agriculture (CBS Repor, 2011). Among them vegetables covers 12% GDP including cash crops. People can easily sell their production in Diktel bazar. 35% began two years ago and 25% started before 3 years.
- 40% started vegetable farming five years ago. 70% have taken loan for vegetable framing and 30% do not take loan for vegetable farming. 21% earn less than 25 thousand and 38%earn more than 25-50 thousands. In the same way, 18 earn 50 to 75 thousand. In the same way, 13% earn 75-100 thousands. Only 10% earn more than one Lakha. 48% earn less than 25 thousands and 25% earn 25 to 50 thousands. In the same way, 12% earn 50 to 75 thousand and 8% earn 75 to 100 thousand. Only 7% earn more than one lakha .
- It shows the income is very low. 12% spend in health 2 to 4 thousands and 25% spend 4 to 6 thousands. In the same way, 38% spend 6 to 8 thousands and 18%spend 8 to 10 thousands. Only 7%spend more than 10 thousands. 50% spend 5 to 10 thousand and 24% spend 10 to 15 thousands. In the same way 12% spend 20 to 25 thousands and 6% spend more than 25thousands. 37.5% spend 5 to 10 thousand and 25% spend 10 to 20 thousand. In the same way, same 24% spend 15 to 20thousand and 7.5% spend 20 to 25 thousands. Only 6% spend more than 25 thousands. 18%spend 5 to 10 thousand and 25% spend 10 to 15 thousand. In the same way, 37.5% spend 15 to 20 thousand. Similarly 12.5% spend 20 to 25 thousands and 7% spend more than 25 thousand. 25% spend 10 to 15 thousand. In the same way, 12% spend 15 to 20 thousand and 7%spend 20 to 25 thousand. Only 6% spawned more than 25 thousand. 50%

get private sector, 13% are get knowledge their own experiences and another 12% are get training other sector. 50% use family members as labour and 20% hired from market. In the same way, 30% provide labor by exchange.

- 55% give increasing and 24% give answer 'decreasing' .only 21% give answer constant. it shows that it is in increasing trend. 30% from government sector and 40% from NGO sectors. In the same way 11% from private sector and 19% from relatives and friend.NGO sector support is high in commercial vegetable farming. 36% sells from farm and 60% sells from local market. In the same way 20% sell from vegetable collection centre and 5% sell in other places. 86% have faced problem and 14% have not problem.
- It shows that majority have problems. 40% faced irrigation and 37%faced capital. In the same way, 50% faced technology and 74% faced problem of getting reliable price and 50% faced the problem of transportation. Similarly, 12% faced other problem like disease
- There is no plain land in the study area so it is impossible to use tractor so production cost is high. There is lack of irrigation because most of the land are dry and steep. only rainy season it is possible; of cultivate commercial vegetable.
- There I problem of fertilizer and other pesticide because without using it is impossible for commercial vegetable farming. Labour cost is high so production cost also high so it is difficult to refund cost. Some time the price of vegetable is very low because in terai farm production cost is low .At that time most of the farmer go in loss.
- No problem of market: Diktel is near to the study area and there are facilities of road so market and transportation is easy of collection centre: there is collection centre in village so there is no problem of collection centre. Government and non government sector support in vegetable farming in the study area. People show interest in commercial vegetable farming. It became the main income source and alleviates poverty from the village.

5.3 Recommendations

Before starting commercial vegetable farming in study area, life of people was difficult. It brings in changes in income though it needs to be improved. For the improvement the followings things need to do which are as follows; Government and non government sector concerted resources in commercial vegetable farming by providing loan facilities

- Irrigation system is weak so government allocate budget in irrigation. If government provided irrigation that will increase vegetable farming in the study area.
- In steeply land there is necessary to plan fruit because there is difficult to cultivate commercial vegetable. It is better to make plain by using land reform.
- Government give subsidy in commercial vegetable framing such as fertilizer, technology (tractor). The provided by government farmer will grow more vegetable than that.
- Banda and hadtal should be stopped. If there is no Banda and Hadtal farmer can sale vegetable in anytime.
- Make cool store and sell vegetable off season. If cool store make in village there will be store and sale off season
- Provide loan in 0% interest for farmer. It helps to increase the volume of production
- Give facilities to poor people by identifying them and purchase these poor people production by government during season.
- Organic farming, including market oriented organic vegetable farming should be promoted in study area to attract the urban consumers and the agro-tourists. Farmers need to be trained in organic practices, such as composting, vermi-composting, green manuring, etc.

- Fruit farming practice is very low in stud area. Fruits such as lemon, pear, peach, plum, straw berry, etc. can be kept product in dry land.
- Agro-processing and storage facilities are lacking in Nunthala. Considering farmers' needs and possibilities, studies are needed towards establishment of agro-product processing and storage structures.
- Agricultural Service Center and Livestock Service Center in study area with appropriate group and cooperative mobilization, co-ordination with other institutions involved in agriculture and financial supports. Access to improved agricultural inputs, such as quality seed, should be improved as needed to the local farmers.
- Local Governmental Institutions (VDCs/DDC) should also implement policies and programs for promoting sustainable urban farming towards market oriented organic production systems in coordination with concerned institutions.
- Further policy research and developmental studies are requested to alleviate poverty through the development of commercialized urban agriculture in study area.

APPENDIX - I
QUESTIONNAIRE

Research Questionnaire:

Mark the Respondent's answer with circle in it.

Name of Interviewer: Date of Interview:

Name of Respondent:

1. Ward No:
2. Ethnicity:
a. Rai , b. Sherpa, c. Tamang , d. Dalit
3. Age:
4. Sex:
a. Male b. Female
5. Marital Status:
a. Married b. Unmarried
6. Educational Status
a. Primary b. Lower secondary c. Secondary d. campus level
7. Do you cultivate vegetable?
a. yes b. No
8. When did you begin commercial vegetable farming?
a. 2 years b. 5 years c. more than 5 years
9. What is your family size?
a) 0-5 b) 5-10 c) 10 above

Information on the contribution of vegetable farming in income generation situation:

1. How much your total annual income?
a) Less than 25 thousands b) 25 to 50 thousands
c) 50 to 75 thousands d) 75 thousands to 1 Lakh
e) More than 1 Lakh
2. How much money do you earn from your vegetable farming? (yearly)
a) Less than 25 thousands b) 25 to 50 thousands
c) 50 to 75 thousands] d) 75 thousands to 1 Lakh
e) More than 1 Lakh
3. What is the area of your expenditure?

4. Are you satisfied from this income?
 - a. Yes
 - b. No
5. Where did you get knowledge and skills about the vegetable farming?
 - a. Government office
 - b. NGOs/INGOs/Private sectors
 - c. Relatives
 - d. Own experience.
 - e. If others please specify
6. Have you ever got training opportunity for vegetable farming/cultivation?
 - a) Yes
 - b. No
 If yes, please specify.
7. Who gave the training?
 - a. Government
 - b. Cooperatives
 - c. NGOs/INGOs
 - d. Private sectors
 - e. if others please specify
8. How many kg. vegetables do you have produced in differences year ?
 - a. 25 kg.
 - b. 50 kg.
 - c. 75 kg.
 - d. 100 kg.
 - e. more than 100 k.g
9. What are the sources of labor supply for vegetable cultivation?
 - a. Family member's
 - b. Hired labor
 - c. Exchange labor
 - d. If others specify
10. Generally in which season do you have grown vegetable?
 - a. Normal season
 - b. Off season
 - c. if others please specify
11. In which season do you get more benefit ?
 - a. Normal season
 - b. Off season
 - c. if others please specify
12. Additional Occupation of the respondent despite agriculture:
 - a. Services
 - b. Business
 - c. If others specify
13. Where did you sell your production ?
 - a. local market
 - b. collection centre
 - c. other place
14. Do you satisfied with present market price of your production?
 - a. yes
 - b. No
15. Do you get loan for vegetable farming ?
 - a. yes
 - b. No
16. If yes ,where do you get loan?
 - a. bank
 - b. sahakari
 - c. local money lender
17. What is the trend of vegetable farming in Nunthala?
 - a. Increasing
 - b. Decreasing
 - c. Constant
 - d. if others specify

18. Do you have irrigation facility in your field?
 - a. Yes
 - b. No
19. Do you increase your income from vegetable ?
 - a. yes
 - b. No
20. In which purpose do you invest money get from vegetable?
 - a. household expenditure
 - b. child education
 - c. to purchase land
21. Do you feel any change in your social status after vegetable farming?
 - a. yes
 - b. No
22. If yes, what change do you feel?
 - a. Change in using household animates
 - b. change in celebrating festival
 - c. change in dressing pattern
 - d. other

Problems and prospects of commercial vegetable in the study area

1. Do you have face any problems regarding vegetable farming?
 - a. Yes
 - b. No

If yes;
2. Which types or problems do you face?
 - a. Irrigation
 - b. Capital/financial
 - c. Technology
 - d. Marketing
 - e. Transportation
 - f. If others please specify
3. Who really support to identify and supply improved inputs such as seed, fertilizers, pesticide and others?
 - a. Government sector
 - b. NGO/INGO
 - c. Private sector
 - d. Relatives/friends
 - e. If others please specify
4. Where do you often go to sell your vegetable farm product?
 - a. At own farm
 - b. Local Market
 - c. Vegetable collection center
 - d. if others please specify

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