

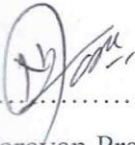
**ROLE OF COMMERCIAL VEGETABLE FARMING ON  
HOUSEHOLD INCOME IN BHARATPUR  
METROPOLITAN CITY- 4, CHITWAN**

**A Thesis  
Submitted to  
the Department of Economics,  
Faculty of Humanities and Social Sciences,  
Birendra Multiple Campus of Tribhuvan University, Nepal,  
in Partial Fulfillment of the Requirements for the  
Degree of MASTER of ARTS  
in  
ECONOMICS**

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## DECLARATION

I, NARAYAN PRASAD GAIRE, hereby declare that the thesis entitled "ROLE OF COMMERCIAL VEGETABLE FARMING ON HOUSEHOLD INCOME IN BHARATPUR METROPOLITAN CITY- 4, CHITWAN" submitted to the Department of Economics, Birendra Multiple Campus, Bharatpur, is entirely my work done under the guidance and supervision of my supervisor. I have made due acknowledgements to all ideas and information borrowed from various sources in the course of preparing this thesis. The result of this thesis has not been submitted or presented anywhere else for the award of any degree or for any other purpose. I assure that no part of this thesis has been published in any form before.



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### LETTER OF RECOMMENDATION

This thesis entitled, hereby declare that the thesis entitled "ROLE OF COMMERCIAL VEGETABLE FARMING ON HOUSEHOLD INCOME IN BHARATPUR METROPOLITAN CITY- 4, CHITWAN" has been prepared by Mr. NARAYAN PRASAD GAIRE under my supervision. I hereby, recommend this thesis in partial fulfillment of requirements for the Degree of MASTER of ARTS in ECONOMICS for final examination.

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### APPROVAL SHEET

We certify that this thesis entitled, "ROLE OF COMMERCIAL VEGETABLE FARMING ON HOUSEHOLD INCOME IN BHARATPUR METROPOLITAN CITY- 4, CHITWAN" submitted by Mr. NARAYAN PRASAD GAIRE to Department of Economics, Birendra Multiple Campus, Bharatpur, Faculty of Humanities and Social Sciences, Tribhuvan University, in partial fulfilment of the requirements for the Degree of MASTER OF ARTS in ECONOMICS has been found satisfactory in the scope and quality. Therefore, we accept this thesis as a part of the said degree.

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Narayan Prasad Gaire

Date: Aug 2023

## ABSTRACTS

This thesis entitled “ROLE OF COMMERCIAL VEGETABLE FARMING ON HOUSEHOLD INCOME IN BHARATPUR METROPOLITAN CITY- 4, CHITWAN” has been conducted to study the contribution of commercial vegetable farming on the household income and household welfare. The general objective of this study was to assess the socio-economic status of household involved and examine the impact of vegetable farming on earned in household income in commercial vegetable farming.

The study covers total enumeration (72 farm households) of the ward No 4 of Bharatpur. The municipality was selected as it was representative of one of the pocket areas of commercial vegetable farming in the periphery of Chitwan valley. The research design applied in this study is descriptive as well as exploratory. Data are based on qualitative and quantitative both methods. Which have been collected from field survey using structured questionnaire, collected data has been coded, edited, and finalized the qualitative data has been analyzed and presented at paragraph and quantitative data will presented in table and graphs, pie-charts etc. and processing, classification, tabulation. And analysis of data by the computer software, SPSS and table and chart were prepared in MS-Excel.

This study found that farmers of the study site have only 3.52 kattha of land, and those who hire land should pay more. Vegetable forming is the main occupation which contribute in an average Rs. 196444 (34.62 percent) of annual income. Mushroom is the top most income earner vegetable. But very limited few households harvest this type of farming. Potato, carrot, radish, and cucumber are the common vegetable farming. This study also shows that the commercial vegetable farming helps to increase social as well as economic power of the household. The vegetable farming has support in daily life activities. The broker and market problem is the major facing problem among them.

It is sure that the vegetable farming is an important farm activity to earn income as well as increase the status of the livelihood.

*Key words: Agriculture, Vegetable, Farm, Pesticide, Rent Land*

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## **ABBREVIATIONS**

CBS	Central Bureau of Statistics
DOFE	Department of Foreign Employment
FDI	Foreign Direct Investment
FY	Fiscal Year
GON	Government of Nepal
GAD	Gender and Development
GDP	Gross Domestic Product
GNP	Gross National Product
HIV	Human Immunity Virus
LDCs	Least Developed Countries
MOF	Ministry of Finance
MENA	Middle East and North Africa
NLSS	Nepal Living Standard Survey
NPC	National Planning Commission
NPR	Nepalese Rupee
NRB	Nepal Rastra Bank
PCI	Per-Capita Income
PSM	Propensity Score Matching
SSA	Sub Saharan Africa
UAE	United Arab Emirates
VDC	Village Development Committee
WB	World Bank
CVF	Competing Values Framework

# CHAPTER I

## INTRODUCTION

### 1.1 Background of the Study

Agriculture is the backbone of Nepalese Economy. It shares 24.1 percent of GDP (MoF 2023). Agriculture has been an important sector in the national economy for most of the developing countries while it plays an important role in virtually in all social and economic activities of any country. (Lawal, 2011)

That people in developing countries who depend on agriculture for their living are typically much poorer than people who work in other sectors of the economy and that they represent a significant share, often the majority, of the total number of poor people in the countries where they live in thirty years. Agriculture sector can contribute to employment, food security and raw materials for ago-based industries. (Cervantes-Godoy & Dewar, 2010)

In Nepal, Agriculture sector engages around 66 percent of the total population in Nepal. It contributes one-third of the nation's GDP with significant contribution to national economy. (MOF, 2022).

Thus, agriculture is regarded as a major contributor to the national economy as well as individuals' livelihood. A strong and efficient agricultural sector would enable a country to feed its growing population, generate employment, earn foreign exchange and provide raw materials for Agri-based industries.

Nepal's economy significantly rebounded from a growth rate of 0.01 percent in F/Y 2016 to an estimated 6.9 percent in F/Y 2017. This robust economic performance in F/Y 2017 is the outcome of favorable monsoon leading to better harvest, normalization of trade since February 2016, acceleration of post-earthquake reconstruction work, better supply management of electricity and base year effects. The agriculture sector, which accounts for nearly one-third of nation's GDP, grew by 5.3 percent in F/Y 2017, up from 0.03 percent in F/Y 2016. Industry sector, which accounts for slightly more than 10 percent of nation's GDP, grew by 10.9 percent in F/Y 2017, up from a fall of 6.4percent in F/Y 2016. Growth in construction activities, expansion of energy sector including enhanced supply of electricity are some of the key factors leading to



improved output of industrial sector. Services sector with contribution of approximately 55 percent to nation's GDP expanded by 6.9 percent in F/Y 2017, up from 2 percent in F/Y 2016 (ADB, 2017).

The growth in services sector is mainly due to the normalization of trade and record arrival of tourists reaching pre-earthquake levels, thus favoring wholesale and retail trade, hotel, restaurant, travel and communication sub-sectors. 3. The economy will likely grow at a slower rate of 4.7 percent in F/Y 2018. Heavy rainfall in mid-August led to landslides and floods, resulting in the loss of human lives and livelihoods. Floods inundated paddy fields and destroyed crops in most of the Teri districts of Nepal. This will depress farm output, hampering growth prospect. Industry sector, buoyed by increased supply of electricity and availability of construction materials will likely expand by 6.6 percent in F/Y 2018, albeit down from a growth of 10.9 percent in F/Y 2017. Services sector is forecast to grow by 5.5 percent in F/Y 2018 owing largely to likely expansion of wholesale and retail trade, financial intermediation and travel and tourism sub-sectors (ADB, 2017).

Agriculture sector has multiplier effect on any nation's socio-economic and industrial fabric because of its multifunctional nature however it is affected by favorable/unfavorable climatic conditions, resulting in the fluctuation of GDP thereby affecting overall economic growth (MOF, 2014).

Vegetable farming within cities or on the fringes of cities is a part of urban agriculture. Urban agriculture ranging from household subsistence farming to commercial-level farming plays a crucial role in improving the livelihood of people. In developing countries, urban agriculture is an important contributor to the livelihood strategies of urban households. According to the 2016 statistics of the Food and Agriculture Organization of the United Nations, tomato is the main vegetable produced worldwide, and Asia is the leading producer of fresh vegetables, with a production of 251 million metric tons. Likewise, China is the major producer of fresh vegetable, sharing more than 50 percent of total production. Worldwide, the majority of vegetable production takes place in Asian countries, with Nepal being the sixth leading producer of fresh vegetables following China, India, Vietnam, Philippines, and Myanmar in 2016. The vegetable farming increasingly gaining its importance in Nepal.

In Nepal, agriculture sector includes forestry, fishery, hunting and farming and the Nepali industrial activity also mainly involves the processing of agricultural products, including pulses, jute, sugarcane, tobacco, and grain and it is major pillar of the Nepalese economy. The agriculture sector is the backbone of an economy which provides the basic ingredients to mankind and now raw material for industrialization. Therefore, it is need of time that financing agencies come up to help them in undertaking the improved farm practices.

Farmers are working hard to meet their demand and fulfill their desires. Even they work hard they are not satisfied with their income. They can hardly meet their household expenses and other expenses. They can't afford a good quality of life for them and their family. Because of low income from their occupation, they have a low economic condition.

## **1.2 Statement of the Problem**

In Nepal, the main problem in the field of agriculture is the land structure of the country as because of mountainous country it restricts the access of road network to the market which increase the cost of product. The lack of irrigation facilities and dependency on monsoon for irrigation is also big problem in Nepalese agriculture, the subsidies to the farmers of Nepal is very low compared to Indian farmers, which makes Nepalese product more expensive. In spite of various challenges, Nepal has large scope in the field of agriculture, as it is agricultural country and people are used to agricultural work which makes easily available of labor force for agriculture work. The climate and land topography make it more possible for the production of various types of agricultural products. Teri is suitable for cereals and the hilly region is very good for livestock farming (goats, buffaloes, and cows) and mountain region is good for livestock farming (yaks, sheep, wild goat and so on), horticulture (apples) and so on. In spite of huge possibilities of agriculture farmers are very poor in Nepal and this entire scenario makes the agriculture field out of interest among youths.

The low productivity in agriculture is not due to the inherent inferiority of land and labor. No doubt, the pattern of agricultural production in Nepal is affected by the mountainous topography that ranges from 61 meters to highest peak. Because of varying altitudes, though Nepalis in the tropical to sub-tropical belt, it has different climatic

regions starting from the north with alpine and continuing south with temperate, sub-temperate to sub-tropical climates, Vegetable farming is not new topic but commercialization of farming is new topic and its impact of women's livelihood is really important and measurable. It is sure that it increases the workload of women. Actually, they are benefited. In the urban fringes where agriculture is the occupation for the livelihood and source of cash income, vegetable gardening appears as one of the productive enterprises for cash generation and is considered as cash crops. Vegetable growers get higher profit vegetable farming compared to that of cereals crops other economic activities. Were household equally and freely enjoying benefit? How will be their access to income generation whether the activity upraises their status whether it empowers them or not. The specific research questions are as follows:

- i. What is the socio-economic status of involved in commercial vegetable farming in Bharatpur Metropolitan city?
- ii. What is the impact of vegetable farming on income earned by household income?

### **1.3 Objectives of the Study**

The general objective of this study is to analyze and explore the position and assess of household's involvement in the agriculture and commercial vegetable farming. The specific objective of this study are as follows:

- i. To assess the socio-economic status of household involved in commercial vegetable farming in Bharatpur Metropolitan city.
- ii. To examine the impact of vegetable farming on income earn by household income

### **1.4 Significance of the Study**

The study is more helpful to understand capacity of household as well as policies of agricultural production and marketing. The study has described the socio-economic condition and contribution made by women at their family and society through agricultural trading. Recent policies of the government are to promote agriculture, especially high value crops through enhancing agricultural trading. Women empowerment and inclusion are also given priority in policy making process. Women

to be empowered, they should have access to and control over income. Through vegetable and fruit marketing, women can have cash in their hand and opportunity to interact public. Women's involvement in this sector is one of the most important options that have both challenges and opportunities to undertake this profession for economic and social empowerment of women. The study would be more helpful to understand capacity of women as well as policies of agricultural production and marketing. The study was described the socio-economic condition and contribution made by women at their family and society through agricultural trading. The finding of this was being references for other researchers. This study was being useful for further research to the relation fields. The research is an attempt to fill the gap of knowledge existing between theory and practice in relation to how policy context determines either the success or failure of a given policy.

### **1.5 Limitation of the Study**

This study aims to analyze household's participation in commercial farming, to explore the women access over income generation and to analyze the role of commercial vegetable farming in women's empowerment. No study can be free from limitation and this study is no exception. This study has some specific limitations as follows.

- i. This study has been based on small sample thus the finding may not be generalized to the national level.
- ii. Only active household members of the clusters will respondents of the study. So, the finding of the study may not be equally applicable to other areas of the study.
- iii. The researcher has been used sample few representatives of household vegetable farmers in ward no 4 from Bharatpur Metropolitan City of Chitwan district.
- iv. This research has been conducted on the base of the recall of the respondents. So the result may be affected by recall bias.

### **1.7 Organization of the Study**

This study is classified into five chapters.



The thesis has been organized into five main chapters in order to make the study more specific, precise and more impressive.

The first chapter is an introductory chapter which provides general introduction about agriculture, women and role of vegetable farming for women empowerment. Similarly, chapter also provides statement of problem, objectives, significance of the study, limitation and organization of the study. Chapter second describes the theoretical review of previous study and application of present conceptual framework. It includes review of the books, various published and unpublished reports, articles, journals and empirical studies. Chapter third deals with the research methodology, which includes research design, nature and source of data, sampling procedure, data collection tools and techniques for analysis. Chapter four is about the profile of the research area and is about data presentation and analysis with the help of analytical tools and interpretation of the results. The chapter five states the summary, conclusions and recommendations of the study. A bibliography and appendices is enclosed at the end of the study.

## CHAPTER II

### REVIEW OF THE LITERATURE

Review of related literature will help to get clear ideas, opinions and other concepts. So, for this purpose our study basically focuses on previous studies and other related literature regarding this subject. This chapter has been divided into two sections: theoretical and empirical reviews.

#### 2.1 Theoretical Literature

Lewis' (1954) theory regarded a model of the economy with unlimited supplies of labour. It was assumed that the economy consists of a subsistence or traditional agricultural sector and a modern or capitalist sector. Within the context of an unlimited supply of labour, wages in the capitalist sector will stay at a level just above subsistence, even if productivity increases. The reinvestment of the profits gained by the capitalist sector would increase productive capacity, thereby requiring more labour. This process will continue until the surplus labour is fully absorbed in productive employment. Henceforth wages will increase in the capitalist sector and productivity in the traditional sector will increase accordingly.

Johnston and Mellor (1961) supported the fundamental view of the importance of agriculture's contribution to the economy – especially in the early stages of growth. Hence, it was repeatedly said that agriculture does not simply supply food and labour, but its purpose is further established through production and consumption linkages. As agricultural productivity grows, incomes to the rural households create demand for domestically produced industrial products. Grayling (2012) debated on Lewis' theory since the majority of rural poor people are food-insecure: the income they have are not enough to cover their dietary requirements. Grayling (2012) stated the problem of a decrease in rural production that leads to a decrease in rural income, which in turn reduces industrialization because of a decrease in the demand for manufactured goods. Hence the problem of low agricultural productivity will result in an insufficient market for agricultural goods.

Meijerink & Roza (2007) presented a paper on "The role of agriculture in development. Markets". Policy attention has long focused on agriculture's traditional role to provide food, create jobs, earn export income, generate savings and funds for investment, and produce primary commodities for expanding industries. But the role of agriculture often goes beyond these direct, market-mediated contributions. Agriculture plays also an important role in providing indirect non-commodity contributions that are public goods, social service benefits and environmental services not captured by markets. Agriculture thus contributes to (i) environmental services such as soil conservation, watershed services, biodiversity, and carbon sequestration; (ii) poverty reduction; (iii) food security; (iv) agriculture as a social safety net or buffer in times of crisis, and (v) social viability<sup>137</sup>. A review of case-studies by FAO revealed that these indirect contributions are not well understood, seldom analyzed in the context of development, and rarely reflected in national and rural development policy formulation.

Mallik (2008) conclude that a long run relationship exists between per capita real GDP, aid as a percentage of GDP, investment as a percentage of GDP and openness. However, long run effect of aid on growth was found to be negative for most of the countries he examined. On the other hand, Hatemi and Irandoust (2005) in their study "relationship between foreign aid and economic growth in developing Countries Nepal, Botswana, Ethiopia, India, Kenya, Sri-lanka, and Tanzania" reveals that foreign aid has a positive and significant effect on economic activity for each country in the sample. They conclude that foreign capital flows can have a favorable effect on real income by supplementing domestic savings.

Moreover, Mutahir (2012) took a different stand on his study on the role of agriculture on economic growth and how it interplays with other sectors in the economy. Time series Johansen co integration techniques was employed to investigate the non-causality relationship between agriculture and other economic sectors of Tunisia. From their findings, it was posited that, policy makers should see agricultural sectors as vital tools in their analysis of inter-sectorial growth policies. Though, agricultural sectors has not benefited immensely from the growth of service and commerce sector of Tunisia but its contribution to economic growth of the economy can never be overemphasized. This lend support from the study carried by out on Thailand economy

by Jatuporn et al. (2011). They are also of the opinion that, policy makers should embrace agriculture and see it as a major contributor to Thailand economy.

Maduekwe & Obansa (2013) presented a paper on "Agriculture Financing and Economic Growth in Nigeria". This paper employed secondary data and some econometric techniques such as Ordinary Least Square (OLS); Augmented Dickey-Fuller (ADF) unit root test; Granger Causality test. The results of the various models used suggest that there is bidirectional causality between economic growth and agriculture financing; and there is bidirectional causality between economic growth and agricultural growth. Agriculture financing is essential in development strategies in a variety of ways. It promotes agricultural investment and adoption of technology necessary to spur economic growth. It has been shown that most African countries (Nigeria inclusive) have inadequate levels of domestic savings, which could be directed to investment and insufficient export earnings required to import capital goods for investment.

## **2.2 Empirical Review**

Nepal, S. (2015) Importance of Financing for Nepalese Agriculture and Economic Development. The agriculture sector in Nepal has not been growing as expected over the last decade. To understand the ongoing dynamics in the Nepalese agriculture sector, the study states a hypothesis that lack of effective and efficient financing cause slow agriculture sector growth. The hypothesis is tested using a system dynamics model representing the Nepalese agriculture sector with causalities of financing on the sector. The analysis of the hypothesis states that insufficiency in formal banking access causes aggregate interest rate to rise, which reduces investment and capital in the sector, causing production levels to fall and vice versa. The policy propositions, expansion of formal banking market share and interest rate cut, to cost-effectively cover the rural agriculture sector, result in significant improvements on production and income levels over the next 25 years. These policies have significant positive implications for restructuring the growth trajectory of the Nepalese agriculture sector towards an optimistic outlook.

Rahman (2017) has conducted a thesis on "Agricultural Productivity Growth and the Role of Capital in South Asia (1980–2013)". The study assessed agricultural



sustainability in South Asia (i.e., Bangladesh, Pakistan, India and Nepal) by computing multi-lateral multi-temporal Total Factor Productivity (TFP) indices and their six finer components (technical change, technical-, scale- and mix-efficiency changes, residual scale and residual mix-efficiency changes) and examined the role of capital in driving TFP growth covering a 34-year period (1980–2013). Results revealed that all countries sustained agricultural productivity growth at variable rates with Bangladesh experiencing highest rate estimated @ 1.05percent p.a. followed by India (0.52percent), Pakistan (0.38percent) and Nepal (0.06percent p.a.). There were little or no variation in technical and scale efficiency changes among the countries. The major drivers of agricultural TFP growth were the levels of natural, human and technology capital endowments whereas financial capital and crop diversification had opposite effects.

Sertoğlu (2017) has study on "The contribution of agricultural sector on economic growth of Nigeria". This study empirically examines the impact of agricultural sector on the economic growth of Nigeria, using time series data from 1981 to 2013. This study reveals that in the short run, a positive statistical relationship exists between natural logarithm value of agricultural output and RGDP. This shows that agriculture is a viable source of economic growth in Nigeria. The study also found out that from the Johansen multivariate test that, there is a long run relationship between all variables. Findings revealed that real gross domestic product, agricultural output and oil rents have a long-run equilibrium relationship. Vector error correction model result shows that, the speed of adjustment of the variables towards their long run equilibrium path was low, though agricultural output had a positive impact on economic growth. It was recommended that, the government and policy makers should embark on diversification and enhance more allocation in terms of budgeting to the agricultural sector.

Robert (2018) study on Agricultural extension and its effects on farm productivity and income: insight from Northern Ghana. The study used cross-sectional data collected from 200 farm households from two districts in the Northern region of Ghana. The robustness of the estimates was tested by the use of regression on *covariates*, regression on *propensity scores* and *Heckman treatment effect* model. The study found positive economic gains from participating in the ACDEP agricultural extension programmers. Apart from the primary variable of interest (ACDEP agricultural extension

programmer), socio-economic, institutional and farm-specific variables were estimated to significantly affect farmers' farm income depending on the estimation technique used. The study has reaffirmed the critical role of extension programs in enhancing farm productivity and household income. It is, therefore, recommended that agricultural extension service delivery should be boosted through timely recruitment, periodic training of agents and provision of adequate logistics.

Gurung, et al. (2018). Poverty reduction of farmers from Kapilbastu and Kaski districts were evaluated with respect to the vegetable farming where PRISM (Prosperity Realization through Irrigation and Smallholder Markets) technology was implemented. After the implementation of PRISM there has been considerable increase in vegetable farming area in both districts. Numbers of vegetable crops grown were increased with respect to yield and net return from both the winter and summer vegetables. With the opening of organized markets and large-scale increase in income, farmers were attracted towards vegetable cultivation that provided wide range of vegetables for consumers as well. Earlier farmers cultivated vegetables only when there would be fallow land after the harvest of main season cereal crops while after the adoption of new technology farmers grew vegetables all the year round. Among the popular vegetables during summer was cucumber in the hills and okra in the Terai covering more land than other vegetables crops in the study area. These crops help farmers achieve net return of NRs.25240.6 and from NRs. 20425.4 per Ropani in Kaski and Kapilbastu, respectively. Land area under vegetables crops were increased by 6 times in Kaski and 12 times in Kapilbastu. This increase in net return has been found as a result of creating better marketing system developed by the activity of the PRISM. Similarly, involvement of household in summer season vegetable was not enough and farmers hired labor for commercial vegetables cultivation.

Rai, et al (2019). Vegetable Farming and Farmers' Livelihood: Insights from Kathmandu Valley, in this study, it was hypothesized that vegetable farming contributes significantly to the livelihood of farmers by generating cash and providing employment opportunities. The relationship between livelihood and vegetable farming based on the practices, views, and perceptions of vegetable farmers at four different sites in the outskirts of KV was studied. A purposive sample of 140 farm households was surveyed, and key informant interviews were conducted to collect comprehensive

data. Binary logistic regression was used to identify the relationships between farmer livelihood and numerous variables related to vegetable farming. It was found that the most of the surveyed farmers are migrants who have spread to different corners of KV at different times. The surveyed farmers cultivate an average area of 2551.5 m<sup>2</sup> for vegetable farming. The model results indicate a significant positive relationship between vegetable farming and livelihood. The survey results also reveal many constraints (e.g., poor market management and lack of irrigation facilities) and challenges (e.g., haphazard urban growth, price fluctuation, and vegetable diseases). Since vegetable farming has become a major source of livelihood for farmers in the peripheral areas of KV, further interventions should be implemented to strengthen the vegetable sector and sustain this source of livelihood for peri-urban farmers.

Constance (2019) studied on "Contribution of Selected Indigenous Vegetables to Household Income and Food Availability in Wedza District of Zimbabwe". The objectives of the study were to evaluate the socio-economic factors that influence intensity of consumption of indigenous vegetables during and after the growing season and to determine the contribution of spider flower, pumpkin leaves and cowpea leaves to household income and food availability. Primary and secondary data were used for the study. The former were collected from 54 farmers using the questionnaire as the main tool. Triangulation was done using Focus Group Discussions and Observations. Hence, socio-economic factors influence intensity consumption of indigenous vegetables during and after the growing season. Results further show that 3 percent of the total household income was accounted for by the selected indigenous vegetables. The study cautiously concludes that indigenous vegetables can be a possible source of reliable income. It is recommended that farmers integrate modern technologies and indigenous knowledge to improve production and consumption of indigenous vegetables. Farmer and private sector driven awareness campaigns on the benefits and business potential of indigenous vegetables is essential.

Rai, et al (2019) study on "Commercial vegetable farming: Constraints and opportunities of farmers in Narayangarh". This paper aims to analyze the constraints and opportunities of vegetable farmers in Narayangarh. Altogether 80 farm household survey were conducted in four major areas of Narayangarh. A total of 20 key informant interviews (KII) were also conducted to understand the perception of farm households

on commercial vegetable farming. Out of the total sampled farm households, about 42percent of farmers are associated with farmers group and 37percent have basic training on vegetable farming. Majority of farmers have savings from vegetable production and marketing. Despite few constraints like price fluctuation (81percent) and high middleman margins (71percent), vegetable farming in Bharatpur has many opportunities particularly being a major source income and livelihood (93percent), self-employment generation (87percent) and growing market demand (83percent). Therefore, this paper recommends to portray possible options to promote opportunities and overcome the existing constraints to retain commercial vegetable farming as a sustainable source for farm households in Narayangarh.

Joshi & Piya (2021) studied on 'Determinants of Small-Scale Commercial Vegetable Farming Among Vegetable Growers in Nepal'. This article analyzed the personal, technical, and business factors associated with the adoption using Nepal Vegetable Crops Survey 2009–2010 data. A probit analysis is carried out. Caste/ethnicity is a critical factor hindering the adoption in Nepal. An awareness program to facilitate marketing of vegetables produced by the socially disadvantaged caste/ethnic groups and targeting them in interventions would be helpful in enhancing the rate of vegetable commercialization. Similarly, facilitating access to technical factors, mainly technical assistance, chemical fertilizers, pesticides, and improved seeds, would promote commercial vegetable farming. Such interventions can be introduced in vegetable production potential areas of Hills and Tarai. Land consolidation might not be important. Rather, any program or policies to facilitate secure land-tenure, which encourages farmers to invest in land development, would boost vegetable commercialization.

### **2.3 Research Gap**

Literature review is the most important function to develop any research provides deeper knowledge, experience and other ideas to the researcher. The researcher has made attempts to study some dissertations and relation books to reviews the literature related to the study. Review of related literature helps to the researcher to gain the inside to previous research study that related to the present study. Literature review have most vital role in this study and it has more implication for this study which provides deeper knowledge, experience and other ideas to the researcher. To create the



research idea, to gain the research methods and many methodology, the review of the literature can use.

For review of the related literature, the study to be easier than easier. It can helps for cited, to gain objectives of the study, for sampling procedure and it also helps for how to table and chart construct and give deeply knowledge about the study. The review of literature helps to actualization of study, interpretation and analysis of data, categorization of data and comparison of data and summary writing. Above literature review helpful for the researcher tool design. There has been conducted several studies on impotence of agriculture in economic development of Nepal. Most of these studies are analyzing particular country's agriculture to Nepal and its impact on national economy. They are analyzing the impact only. This study will try to find out the women's participation in agriculture and vegetable farming and changing economic status.

## **CHAPTER III**

### **RESEARCH METHODOLOGY**

This chapter deals with the methods employed by the researcher to complete the study. Methods are guidelines, which aid the researcher to research in a scientific and systematic way. This chapter has been provided the brief introduction of the study area including the determination of sample size, research design and conceptual framework. The method of data collection and the tools of analysis are enlisted at the end of the chapter.

#### **3.1. Research Design**

This study has been carried out on the basis of exploratory as well as descriptive research design because the study was focus on the socio-economic status of remittance users. Moreover, the study has been focused on the vegetable farming in Bharatpur municipality. The major emphasis in this study is to analyze and explore the position and access of women involving in the commercial vegetable farming. It analyzes women's livelihood due to commercial vegetable farming. To explore the women's access to role of commercial farming in women's empowerment. Considering this work, exploratory research design has been used to understand the access of women in income generation and their empowerment. Descriptive research design was used to describe women's participation in commercial vegetable farming and their livelihood. Similarly, it has also used to socio- cultural situation of women vegetable farming

#### **3.2 Rationale of Site Selection**

This study has been based on Bharatpur Metropolitan City, Chitwan district. The rationale behind selection of this district as well as the wards is because the researcher has a close relationship with the municipality which is important considering the natural and precision of the data used for the study.

#### **3.3 Nature and Sources of Data**

This study has been based on the qualitative and quantitative both methods. This study has been based on the primary as well as secondary data, but the focus is given to the primary data, which has been collected from field survey using structured questionnaire, observation and interaction with different respondent. The secondary

data for research has been collected from the published, unpublished documents, articles, dissertation, journals, books, economic survey etc.

### **3.4 Universe, Sample and Sampling Procedure**

The site for the study has been selected as Bharatpur Metropolitan City-4 area. Altogether 72 households were involved in agriculture and vegetable farming. All 72 households were selected as sample for the study using the data from Bharatpur-4 Ward Office. Sampling is the process of selecting a group of people, events, behaviors, or other elements with which to conduct a study. Sampling procedure is a list of all the elements in the population from which the sample is drawn.

### **3.5 Data Collection Methods and Tools**

For the completion of this study, data has been collected from various tools and techniques. First of all, the researcher has been visited the selected samples and after taking the information about the program, the field survey has been made.

#### **3.5.1 Questionnaires**

To get the primary data, the structured questionnaire has been developed, and the questionnaire has been filled up by the researcher visiting all selected respondents.

### **3.6 Data Presentation and Analysis**

The collected data has been coded, edited and finalized the qualitative data has been analyzed and presented at paragraph and quantitative data will presented in table and graphs, chart etc. by the help of computer software. The computer software will be applied to the processing, classification, tabulation and analysis of data and information will MS-Word and Excel.

## CHAPTER IV

### DATA PRESENTATION AND ANALYSIS

All the collected data information was edited, coded and tabulated in presentable form. In this chapter all the socio- economic information taken from the respondent are systematically presented as follows:

#### 4.1 Socio Economic Status of Household

In the socio-economic information of household, Age, Sex, Occupation, Marital Status and landholding pattern were discussed.

##### 4.1.1 Caste and Ethnicity

The caste and ethnic is a social phenomenon. As reported by the respondent, the composition of cast and ethnicity is presented in the following table:

**Table 4.1: Caste and Ethnicity**

S.N.	Caste and Ethnicity	No. of Respondents	Percent
1.	<i>Bramin/Chettri</i>	56	77.78
2.	<i>Janajati</i>	12	16.67
3.	Dalit	4	5.55
	<b>Total</b>	<b>72</b>	<b>100</b>

*Source: Field Survey, 2023*

As shown in the table 4.1 out of total 72 sample size, *Brahmin/Chettri* are the largest, they comprise 77.78 percent of the total sample. Whereas, others like *Janajati* comprises 16.67 percent and *Dalit* comprise 5.55 of the total population of the sample. This table shows that the majority of the women in vegetable farming were from Brahmin community.

##### 4.1.2 Family Structure

###### Family Size:

Family size of sample household ranges from one to eleven members. Nearly one-half (44.44 percent) belong to small family (up-to 4 members). Similarly, less than two fifth (37.5 percent) belong to medium family size. Rest of the sample household, nearly one fifth of (18.05 percent) belongs to extended family i.e., more than 8 members. There are 297 family members in the sample household of 72, that renders the average number

of family members in household to be 4.12, which is near about than the national average of 4.32 members. (CBS 2021)

**Table 4.2: Family Size of Household (N = 72)**

<b>Family Size</b>	<b>Household No.</b>	<b>Percent</b>
1-4 members	32	44.44
5-7 members	27	37.5
8 and above	13	18.05
<b>Total</b>	<b>72</b>	<b>100</b>
Total Number of family members	297	-
Average family size	4.12	-

*Source: Field survey 2023*

#### **4.1.3 Family Types**

As reported by the respondent, shown in table no. 4.3 More than one half of the population of sample household belongs to nuclear family (55.55 percent) whereas rest of the sample population reported to be living on joint family system which is (44.44 percent). This shows that the remaining vestige of extended family is still extant in rural part of the community.

**Table 4.3: Type of Family (N=72)**

<b>Type of households</b>	<b>Households No.</b>	<b>Percent</b>
Nuclear	40	55.55
Joint	32	44.44
<b>Total</b>	<b>72</b>	<b>100</b>

*Source: Field survey 2023*

#### **4.1.4 Educational Status**

Education is indispensable to individual and society, for without it there would be loss of all the accumulated knowledge of the ages and all the standard of conduct. An individual must learn the culture of the society or the accepted ways of doing things. He must be socialized into the prevailing culture and must learn the rules of conduct and expectations about future behavior. In this study All the respondents are classified into illiterate and literate group. Illiterate are those respondents who cannot read and write frequently and cannot get any formal school education and literate are those who get formal education. The literate was divided into Basic level education, secondary

level education and higher-level education. The educational level of respondents was presented in table 4.2

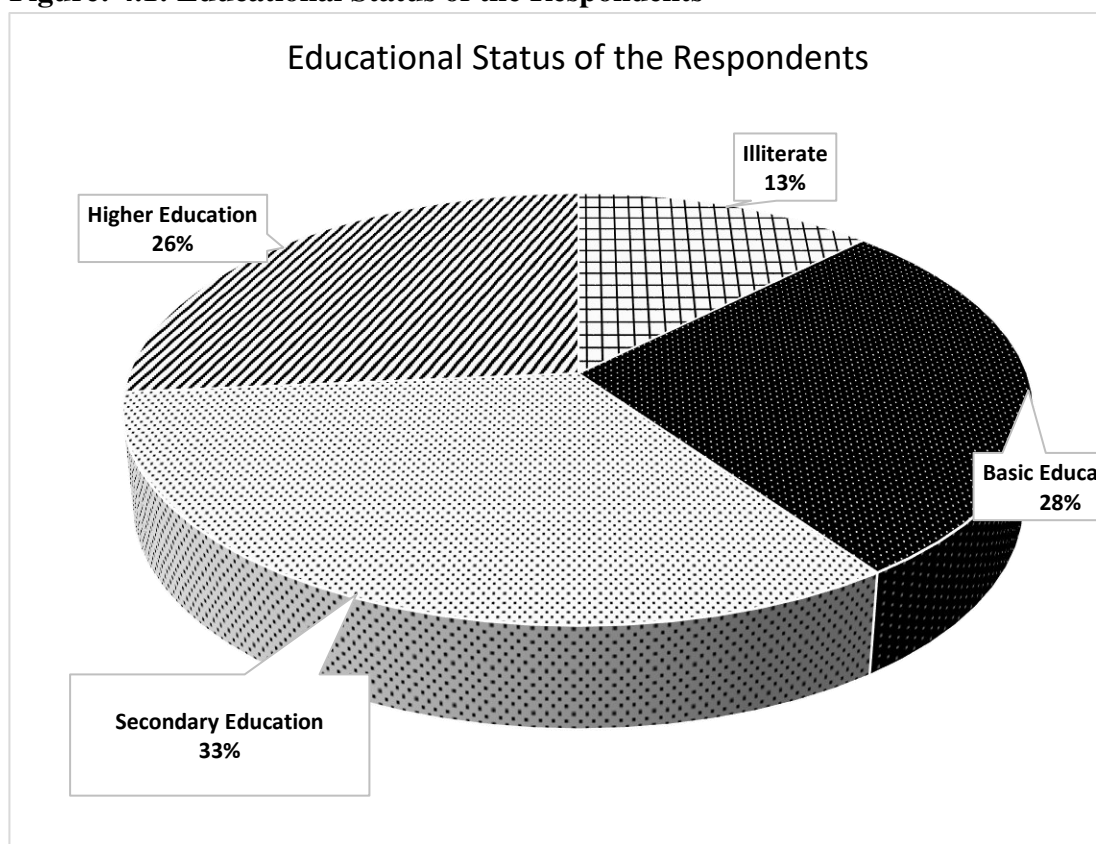
**Table No. 4.4: Educational Status of the Respondents (N=72)**

S.N.	Status of Education	No	Percent
1.	Illiterate	9	12.50
2.	Basic Education	20	27.78
3.	Secondary Education	24	33.33
4.	Higher Education	19	26.38
<b>Total</b>		<b>72</b>	<b>100</b>

*Source: Field Survey, 2023*

The educational level of respondents was presented in figure 4.1

**Figure: 4.1: Educational Status of the Respondents**



*Source: Field Survey, 2023*

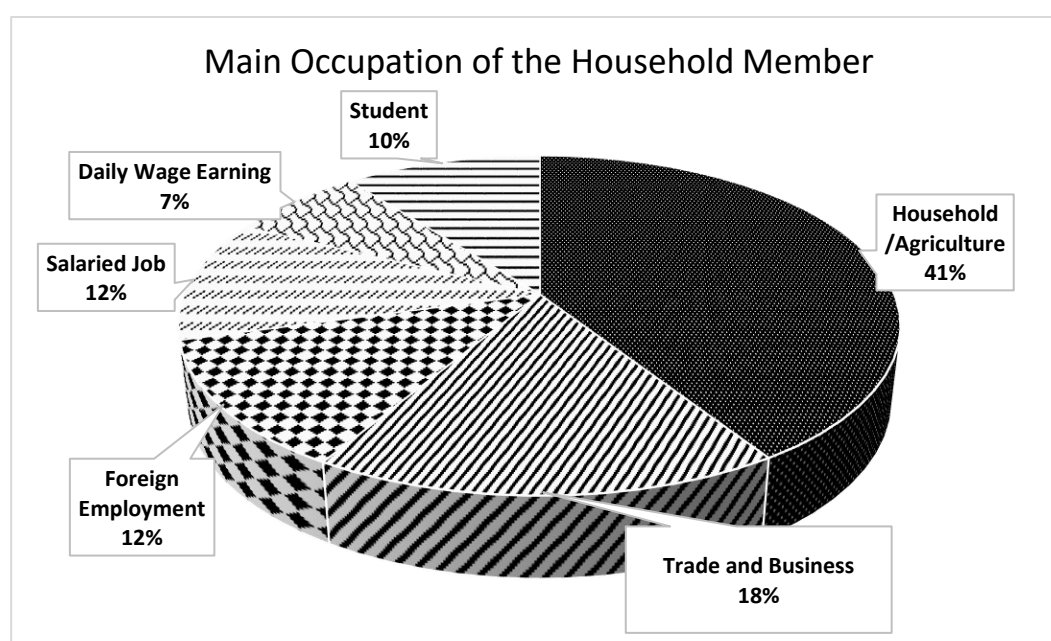
As shown in Figure No. 4.1 one third (33.33 percent) of the respondent have completed their degree of secondary level school education. Nearly one fourth have primary education (26 percent) and higher Education (28 percent). Very few (13 percent) were illiterate among the respondents.



#### 4.1.5 Main Occupation of the Households

In the household covered by the study, the family members have taken different occupations. Of the total 181 family members of 72 households above 16 years, about two fifth of the household member (40.88 percent) have been involved in household work and their own vegetable farming work followed by 17.67 percent in their own trade and business. As shown in figure 4.2, 12.15 percent were engaged in foreign employment and 11.60 percent are in salaried job. Likewise, about (7.18 percent) have reported to be engaged in daily wage earner and 10.49 Percent are the student.

**Figure No 4.2: Main Occupation of the Household**



*Source: Field survey 2023*

As found in the study and presented in the table no 4.2, the main occupations, vegetable farming seems to be higher occupation than others trade and business, foreign employment, salaried job and daily wage earning.

#### 4.1.6 Ownership of Land and Uses of Land for Vegetable Farming

Of the total 72 households covered by the sample, a large majority (91.66 percent) has some land and the rest (8.33 percent) have no land. The landholder households own different sizes of land. More than half (55.55 percent) have below five *kattha* of land. One-third has 5 to 10 *kattha* (29.16 percent) and very few 6.94 percent have 10 *kattha*

or above size of land. In average, the households own 3.52 *kattha* of land. The average land holding size of 3.52 *kattha* (i.e., 0.12 hectares).

**Table 4.5: Ownership of Land and Cultivation of Others Land**

<b>Land Holdings and Food Self-Sufficiency</b>	<b>No. of Household</b>	
<b>A. Land Owned (in <i>kattha</i>)</b>	<b>No.</b>	<b>Percent</b>
No land	06	08.33
Below 5	40	55.55
5 to 10	21	29.16
10 or above	5	06.94
<b>Total</b>	<b>72</b>	<b>100.0</b>
<b>Average Size of Land Owned</b>	<b>3.52 <i>kattha</i></b>	
<b>B. Cultivation of Other's Land</b>	<b>No.</b>	<b>Percent</b>
Below 10 <i>Kattha</i>	29	63.04
Above 10 <i>Kattha</i>	07	15.21
<b>Total</b>	<b>46</b>	<b>100.0</b>

*Source: Field Survey, 2023*

Of the total sample households, 63.04 percent (i.e., 46 of 72 households) cultivate other's land for vegetable farming. Large majority cultivate others land for agricultural purpose. The household in an average paid NRs.3200 per *Kattha* of rent to use others land.

#### **4.1.7 Annual Income of the Household**

From the 72-sample household covered by the study, questionnaire was asked to list out their annual income tentatively. The household reported that the source of income includes vegetable Farming, Trade and Business, foreign employment, salaried jobs, wage earnings, agriculture and livestock and old age pensions. Following table shows tentative household income of past year from various sources.

The sample household reported that Vegetable Faming, trade and business, remittance and salaried job to be the most common sources of their cash income. Upon inquiring the proportion of each source contributing to total income of household, most (34.62 percent) of income come from Vegetable Farming. Similarly, about one-fourth (24.83 percent) of total household income are contributed by Foreign Employment. As reported by them salaried job contributes 16.64 percent of income and about 16.79

percent of total income are contributed from Trade and business. Similarly, A tiny fraction, 3.36 percent come from labour wage earnings and 1.48 percent from pension/ social security allowances. It is found that 2.26 percent of household income comes from other sources than explain above.

**Table 4.6: Source and Amount of Household Income in a Year (in Rs.) N=72**

Income Sources	Total Income	Percent	Average Income
1. Vegetable Farming	14144000	34.62	196444
2. Foreign Employment	10145600	24.83	140911
3. Salaried Job	6798400	16.64	94422
4. Trade and Business	6860800	16.79	95288
5. Labor/Wage earning	1372800	3.36	19066
6. Pension/ social security allowances	608000	1.48	8444
7. Others	926400	2.26	12866
<b>Total</b>	<b>40856000</b>	<b>100</b>	<b>567444</b>

*Source: Field survey 2023*

As shown in the table no. 4.6 it is found that the major income sources of the vegetable farmers come from vegetable farming and in an average, it contributes NRs. 196444.

#### **4.1.8: Period of Engagement in Commercial Vegetable Farming**

The main vegetable crops grown in the study area are potato, tomato, cucumber, cauliflower, cabbage, radish, leaf's, bottle gourd, beans etc. Period of engagement in commercial vegetable farming ranged from a minimum 2 years to maximum 10 years.

**Table - 4.7: Period of Engagement in Vegetable Farming by Duration (years)**

S.N.	Period (in Years)	Number of HHS	Percent
1.	Below 4 years	47	65.28
2.	4-5 years	14	19.45
3.	5-6 years	7	9.72
4.	7 above	4	5.55
	<b>Total</b>	<b>72</b>	<b>100</b>

*Source: Field Survey, 2023*

Table 4.7 shows that 65.28 percent of the respondent started this farming below 4 years, 19.45 were engaged for 4to 5 years and 14 percent were engaged more than 5 years.

This information indicates that this occupation is very sound and good occupation especially in urban fringe. Women respondents who have no land or small land for commercial vegetable farming for help marketing system. They earned only a little cash from commercial vegetable farming.

#### 4.1.9 Types of Vegetable Farming

There are three types of seasonal vegetable viz. winter vegetables, spring vegetables and summer vegetables grown at study site. Generally, broad leaf mustard, radish, pumpkin, cabbage, cauliflower, potato etc. are mostly grown in the winter as well as spring seasons. In summer season sponge gourd, chilly, pumpkin, etc. are commonly grown. Tomato, cucumber, cauliflower, cabbage, were main off-seasonal vegetables grown in study site.

**Table 4.8: Types of Vegetables Farming**

<b>Types of Vegetables</b>	<b>Number of Respondent</b>	<b>Percent</b>
Seasonal	11	15.27
Off-Seasonal	13	18.06
Both	48	66.66
<b>Total</b>	<b>72</b>	<b>100</b>

*Source: Field Survey, 2023*

Majority of the respondents cultivated seasonal vegetables 15.27 percent, off-season vegetable i.e. tomato, cauliflower, cabbage, cucumber, etc. 18.06 percent of them agreed with the statement that income from off-seasonal vegetables and whereas 66.66 were cultivate both type of vegetable farming. Table 4.8 reveals the fact that vast majority of the respondents are attracted to the off seasonal vegetable farming. So far as the agricultural crop-cycle and vegetable cycle is concerned there basically two types of vegetable farming. To be more specifically first are seasonal vegetables and second are off-seasonal vegetable. Within the seasonal vegetables three times come namely winter vegetables, spring vegetables commonly grown at the study site. Off-seasonal vegetable farming is highly emphasized in the study site where almost majority of the respondent's 80.56 percent this one cucumber, radish, cabbage, tomato, cauliflower, baronial etc. are usually grown with major priority in the study area. Comparatively eligible 15.27 percent respondents are engaged is the seasonal vegetable farming.

#### 4.1.10 Income from Major Vegetable Farming

The income from vegetable farming is presented in the following sections. From the study reported by the respondents it is found that the top income generator vegetable of the sample households is presented in table no. 4.9.

**Table 4.9: Income from Major Vegetable Items (in Rs.)**

S.N.	Total Revenue	HH No.	Total Income	Mean Income
1.	Mushroom	7	2025000	289285
2.	Tomato	15	915000	61000
3.	Cauliflower	13	350000	26923
4.	Cabbage	15	415000	27600
5.	Potato	23	415000	18043
6.	Carrot	25	344000	17760
7.	Cucumber	26	710000	27307
8.	Radish	32	450000	14062
9.	Brinjal	18	264500	14694
10.	Bitter Gourd	13	327000	25153

*Source: Field survey 2023*

As shown in Table no. 4.9, mushroom is the highest income earner vegetable contribute 289285 mean incomes of the household followed by tomato (Rs 61000). Radish, carrot, potato, cucumber are the vegetables which are commonly harvested by many farmer households.

## 4.2 Socio-Economic Impact of Vegetable Farming on Household Income

### 4.2.1 Involvement in Groups/Institutions

The community members have strongly realized the fact that they need to organize them and work in a group. They realized that those farmers who do not belong to any groups and therefore have less opportunity to build social network and participating any programmers such as credit facilities, technical skill training etc. In case of participation mainly men are involved in various intuitional activities. But, after the incessant continuation of various awareness and awaking campaigns and programs the level of women's involvement in institution sector has been increased.

**Table 4.10: Involvement to Groups/Institutions**

<b>Social Group/Organization</b>	<b>Number of Person</b>	<b>Percent</b>
Male	16	22.2
Female	44	61.1
Both	12	16.7
<b>Total</b>	<b>72.0</b>	<b>100.0</b>

*Source: Field Survey, 2023*

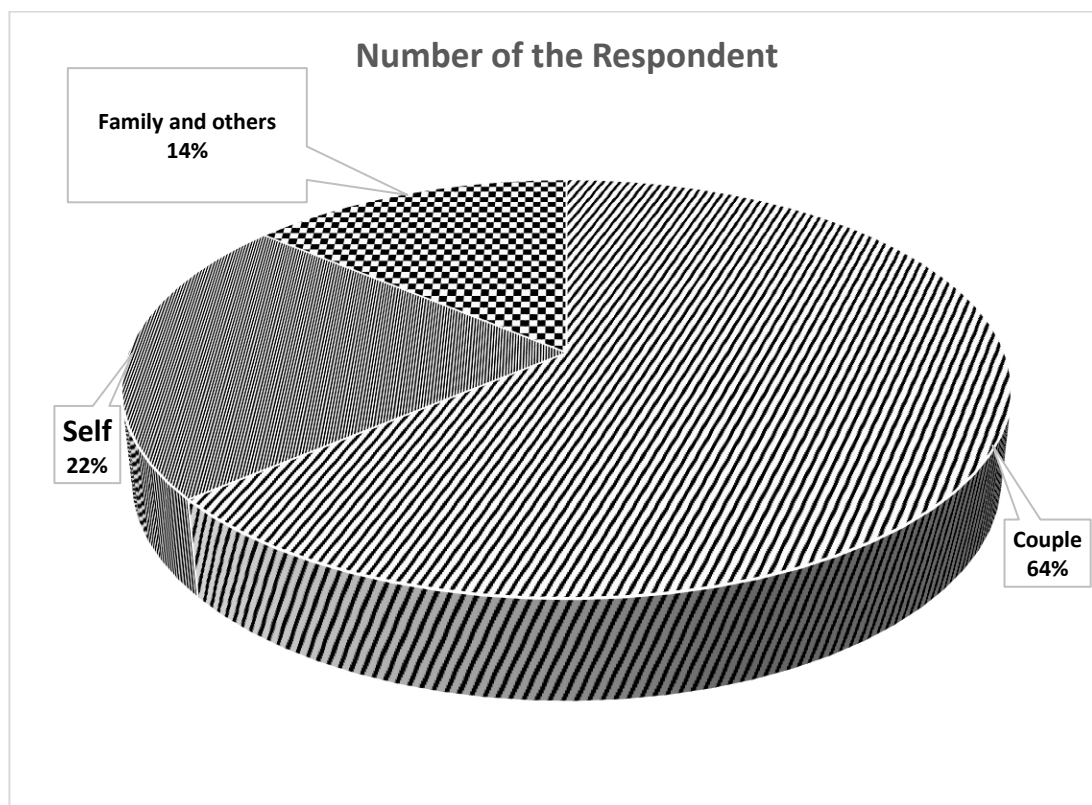
Table 4.10 demonstrates the fact that higher percentage of 61.1 percent persons are female they are actively and regularly involved in the various kind of intuitions and organization in order to enhance them self and their occupation and their community as a whole. On the other hand, 22.2 percent persons are male and comparatively very few 16.7 percent persons are both male and female which they involved in any kind of intuition and organization as a whole.

#### **4.2.2 Decision Making**

Nepal is, although labour and land allocation are grounded in cultural construction of rights and responsibilities, income distribution is largely governed by patriarchal ideologies favoring men prerogatives. But this occupation provides an opportunity to generate income for rural women. This eventually helps them in terms of capacity building and decision making at both household and community level. In other world male dominancy is seen in every sphere of human, social, cultural and economic life. But, so far as commercial vegetable farming occupation is concerned. People have more or less contributed in farming to some extent. Majorities of farming decision makers are minority in both categories of farmers. More than three quarters of vegetable farmers are men less than a quarter woman. However, only slightly more than half of non-vegetable farmers are men and less than women. However, only slightly more than women. It implies that men favoring decision makers are more likely to run commercial vegetable farmers than those women ones. It can be considered that this is due to gender difference in the hills of Nepal which allows men to have more decision-making power on matters which involve risk and a large sum of money such as commercial vegetable farming.

Before adopting this occupation, most of the women farmers in the study site did not have any income source. Now they have not only access to financial resources but ask control over it. Because they hold the purse strings and expose in society, they command greater bargaining power in both household and community level decision-making. Data shows that before adopting this farming women were not much consulted by their male counterparts when deciding to household and community level. But now, in constraints conclusion, women in study site are being increasingly consulted by their men counterparts before making a decision both in household and community level.

**Figure No. 4.3: Decision-Making on Selling Vegetable**



*Source: Field Survey, 2023*

Figure 4.7 exhibits the fact that a considerable 63.89 percent of the vegetable farmers respondents reported that they make the decision with their couple in organized choose the place and fix the rate for selling the vegetable to be sold in the desired place like co-operative. On the other hand, 22.22 percent of them told that they make the decision in regard of above-mentioned activities relating to vegetable farming with self-decision. Only 13.89 percent of the decisions makes with their family and others.

**Table No. 4.11: Decision-Making on Selling Vegetable**

<b>S.N.</b>	<b>Decision Making</b>	<b>Number of the Respondent</b>	<b>Percent</b>
1	Self	46	63.89
2	Couple	16	22.22
3	Family and others	10	13.89
<b>Total</b>		<b>72</b>	<b>100</b>

*Source: Field Survey, 2023*

Table 4.11 exhibits the fact that a considerable 63.89percent of the vegetable farmers respondents reported that they themselves and organized choose the place and fix the rate for selling the vegetable to be sold in the desired place like co-operative. On the other hand, 22.22percent of them told that they make the decision in regard of above-mentioned activities relating to vegetable farming. Their men counterparts make only 13.89 percent of the decisions. Thus, the level of decision making of women is very high in study area.

#### **4.2.3 Change in Attitude in Participation on Social Institution.**

Human being is a social animal, he/she want to participate in social institutions. The respondents were asked whether they enforced their women to participate in social institution. As a result, it is found that the rate of social participation in decision making is highly increased.

**Table. 4.12: Change in Attitude in Participation Women on Social Institution**

<b>Increase in Social Participation</b>	<b>Number of Respondents</b>	<b>Percent</b>
<b>HHS</b>		
Highly increased	43	59.7
Moderately increased	21	29.2
As usual	8	11.1
<b>Total</b>	<b>72</b>	<b>100</b>

*Source: Field Survey, 2023*

Table 4.12 shows that men have started to take participation their women counterparts before making decisions. Amongst 59.7 percent of the respondents agreed with the statement that after adopting his occupation, their household decision making power was highly increased while majority of the respondents' 29.2 percent agreed that their



household decision making power has increased moderately. Only 11.1 percent of the respondents mentioned that their decision-making power was not increased. Therefore, we can conclude that the commercial vegetable farming activities has helped to increase women decision-making power.

#### **4.2.4 Major Achievements after Involvement in Commercial Vegetable Farming**

In the study site farmer respondents narrated that they have achieved a lot of things as soon as they involved in CVF Some of their achievements are judged in term of monetary value while other are invaluable as their name, fame, self-teem, self-dignity etc. which have considered as invaluable achievements in their life.

**Table 4.13: Main Achievements after Involvement in CVF**

<b>Main Achievement</b>	<b>Number of Respondent</b>	<b>Percent</b>
Social Prestige	20	27.78
Economic Prosperity	12	16.67
Self-Dependent	40	55.55
<b>Total</b>	<b>72</b>	<b>100</b>

*Source: Field Survey, 2023*

Majority of the respondent 55.55 percent were found to be fully self-dependent which they proudly shared that it is the greatest and major achievement we have made in our life. These group of women enthusiastically told that we are no longer burden to our husband rather we support in the family affairs. Another largest group of 16.67 percent respondent stated that they achieved economic prosperity as the vital achievements in their life. They were quite pleased to say that they have helped to manage their house economically where as 27.78 percent reported that they have achieved social prestige, all these achievements acquired from the respondents exhibit the fact that they are quite satisfied to have their own status and place economic sector of homely affairs and prestige in their social sector.

#### **4.2.5 Empowerment and Awareness**

Empowerment enhances the ability and quality of person in different sector. The person is empowered if he or she becomes independence in the concerned sector. Awareness, and frequent training are the bases for paying towards empowerment. In other words, empowerment and awareness are two inseparable entities they go hand in hand and he in order to mark the process of empowerment and awareness various data have been

analyzed. majority of the women are independent to make the decision regarding their occupation which supports us to observe the level of their empowerment which is very high. On other hand huge number of respondents responds that they are independent to make use of earned income independently. This is also supporting evidence of empowerment.

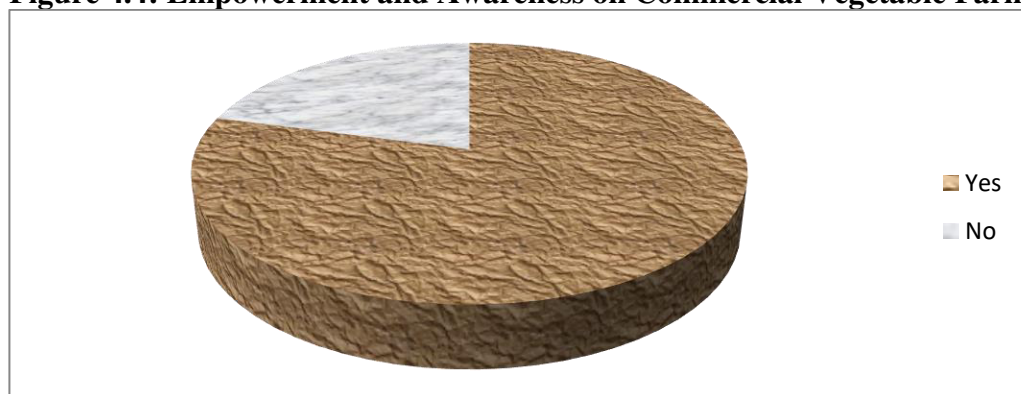
**Table 4.14: Empowerment and Awareness due to Commercial Vegetable Farming**

<b>Empowerment</b>	<b>Number of the Respondent</b>	<b>Percent</b>
Yes	57	79.17
No	15	20.83
<b>Total</b>	<b>72</b>	<b>100</b>

*Source: Field Survey, 2023*

The table 4.14 displays the facts that a vast majority 79.17 percent of respondents are independent through commercial vegetable farming whereas very less 20.83 percent are not empowered through commercial vegetable farming. Most of the women respondents told that they have utilized the saving achieved from commercial vegetable farming in different productive sectors. It also increased their social prestige, decision making power, group and intuitional activities, exposure visit and marketing activities and finally leading them towards empowerment.

**Figure 4.4: Empowerment and Awareness on Commercial Vegetable Farming**



*Source: Field Survey, 2023*

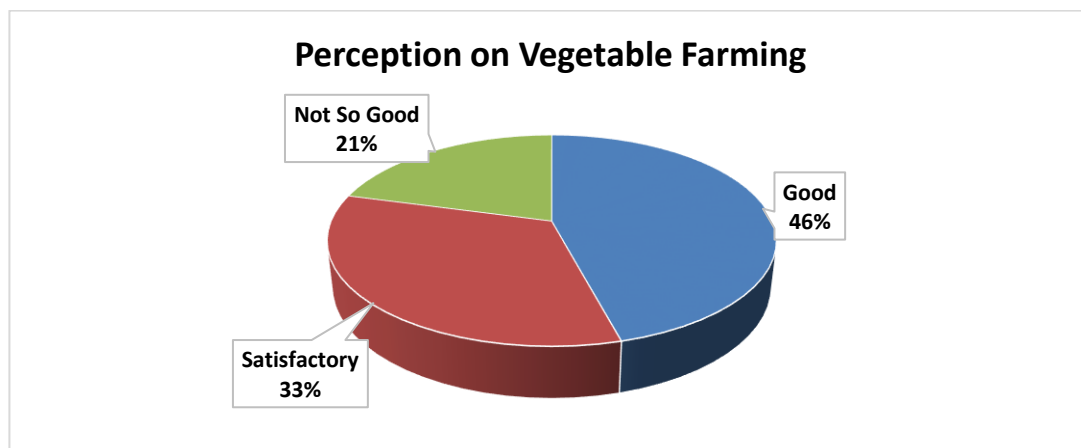
In general, empowerment is considered to be the process through which one achieves the knowledge, skills and awareness through which different sources to empower oneself in the day-to-day life. Here women empowerment has been judged on the basis of their engagement on the commercial vegetable farming and the capacity building activities given to them.

The social status of women and their ability to negotiate for better options at village and households' levels depends on the terms on which they have access to resources, such on land credit, new skills and information and channels of decision making in their own-right. Women should be empowered by enhancing their skills, knowledge and access to information technology. (Platform for Action and the Beijing development. Achieving the goal of equal participation of women and men in decision –making will provide a balance that more accurately reflects the composition of society and is needed in order to strengthen democracy and provide its proper functioning

#### 4.2.6 Feeling of Farmer from Commercial Vegetable Farming

Vegetable cultivation has become highly commercialized but still there is a wide gap between current production and potential productivity. Household participation in the family farming system is crucial to the sustenance of rural economy. The farm Household need to be involved in floriculture sector to push up considerable increase in production level and area under vegetables. Realizing the importance, the respondents were asked about the feelings of expecting improvement from vegetable farming.

**Figure 4.5: Feeling of Farmer from Commercial Vegetable Farming**



*Source: Field Survey, 2023*

As a result, 45.83. percent reported that this occupation is favorable and good best for them. One third (33.33 percent) of the respondent said that vegetable farming is satisfactory occupation.33.33 and one fifth (21 percent) are not satisfied with the vegetable farming.

#### 4.2.7 Change in Feelings on Supporting Household Activities.

The respondents were asked whether there were changed in your daily household activities due to the commercial vegetable farming. It is found from the views of the respondents is that, the commercial vegetable farming supports the household activities. Most of them 76.38 argued that it has supportive role in household consumption pattern, education expenses (52 percent)

**Table 4.15. Change Felt from Vegetable Farming in Households Activities**

S.N.	Description	No of Respondents	Percent
1	Children education expenses	43	59.72
2	Food consumption	38	52.78
3	Consumption Pattern	55	76.38
4	Durable goods	43	59.72
5	Assets increase	24	33.33
6	Saving Increase	40	55.55
7	Health expenses	20	27.78
8	Loan purchase capacity	23	31.95
9	Entertainment	35	48.61

*Source: Field Survey, 2023*

As reported by the respondent, presented in table 4.15 it is concluded that the vegetable farming has positive impact on increase in durable goods and assets, health expenses and entertainment activities.

#### 4.2.8 Major Problems Faced by the Farmers in Commercial Vegetable Farming

Majority of the people involved in agricultural sector are heavily dependent on the traditional tools and techniques. In spite of scientific advancement, they are bound to depend on monsoon for irrigation water. The table No. 4.18 shows that problem of vegetable farming. As reported multi response case, 62.5 percent says the broker and market problem. Storage is another major problem reported by 51.3 percent respondents. Among the Respondent has 47.2 has reported that where fertilizer and seeds and pesticide related problem is another major problem. As reported by them, stroke and different disturbance, loan management system, irrigation and technical problem are other problems faced by the commercial vegetable farming.

**Table 4.16: Major Problems Faced by Household in Vegetable Farming**

<b>S.N.</b>	<b>Problems</b>	<b>No. of the Respondent</b>	<b>Percent</b>
1	Market Problem /Broker	45	62.5
2	Seeds and Pesticide	34	47.2
3	Storage	37	51.3
4	Fertilizer	34	47.2
5	Stroke/ Disturbance	24	33.3
7	Loan management	18	25.0
8	Technical problems	15	20.8
9	Irrigation Problem	12	16.6

*Source: Field Survey, 2023*

From the Table 4.16 it is concluded that there are various problems occurs in commercial vegetable farming faced by farmer. Different farmer faced different types of problems. Some are facing technical problems. In the absence of technical assistance, they are suffering from various problems regarding commercial vegetable farming. Similarly, some of them reported that although they are located in the village near by the Bharatpur suffering from competition with Indian product and are bound to sell their products in the cheaper price.

## CHAPTER - V

### SUMMARY, CONCLUSION AND RECOMMENDATIONS

#### 5.1 Summary

This study conducted on "Role of Commercial Vegetable Farming on Household Income in Bharatpur Metropolitan City- 4, Chitwan. The general objective of this study is to analyze and explore the position and assess household's involvement in the agriculture and commercial vegetable farming. This study aims to analyze household participation in commercial farming, to explore household access over income generation and to analyze the role of commercial vegetable farming in household empowerment.

The main summary of findings was presented in the following sections:

- i. This study shows the occupational status of households having most of the households of *Bramin* and *Chhettri* caste. More than half are nuclear in type and male headed. 87 percent were found literate whereas, 13 percent are even illiterate. The average size of the family was found 4.1 in the study area
- ii. From the study of the household, it is found that 91.66 have land holdings with average 3.52 *Kattha* of land holdings. The size is not enough for commercial vegetable farming. Two third (63.04 percent) household cultivate other's land for commercial vegetable farming. Of the total sample households, 63.04 percent (46 of 72 households) cultivate other's land for vegetable farming. Large majority cultivate others land for agricultural purpose. The household in an average paid NRs.3200 per *Kattha* of rent to use others land. This study concludes that those who want to join in commercial vegetable forming have very small size of land. and those who hire land should pay more.
- iii. The main income sources of the households come from agriculture and vegetable farming. Nearly half (41 percent) household have agriculture as the main occupation and this occupation covers 34.62 percent of total income. Other Occupation like foreign employment, trade and business salaried job are also popular among them because these occupations also have accountable income sources. Most of the respondent recently (from 4 years and below) join in commercial vegetable farming. It is concluded that

the vegetable Farming is strongly supporting business for the household because it is the main occupation of majority household and the main income sources.

- iv. The households in an average earn NRs.196444 form vegetable. Mushroom is the top most income earner vegetable. But very limited few households harvest this type of farming. Potato, carrot radish, and cucumber are the common vegetable farming.
- v. Majority of the respondents cultivated off-season vegetable i.e., tomato, cauliflower, cabbage, cucumber, etc. 18.06 percent of them agreed with the statement that income from off-seasonal vegetables and 15.27 percent of seasonal vegetables whereas 66.66 percent were both.
- vi. The majority of the respondents, 55.55 percent, were found to be fully self-dependent which they proudly shared that it is the greatest and major achievement we have made in our life. These group of women enthusiastically told that we are no longer burden to our husband rather we support in the family affairs. Another largest group of 16.67percent of respondents stated that they achieved economic prosperity as the vital achievements in their life. They were quite pleased to say that they have helped to manage their house economically whereas 27.78 percent reported that they have achieved social prestige, all these achievements acquired from the respondents exhibit the fact that they are quite satisfied to have their own status and place economic sector of homely affairs and prestige in their social sector.
- vii. The table study displays the facts that a vast majority 79.16 percent of respondents are independent through commercial vegetable farming whereas very less 20.83 percent are not empowered through commercial vegetable farming.
- viii. From the study it is found that the women participation in social group and institutions enforced by man is nearly two third of the household (61.1 percent) and the household women are actively participated in social activities and have a major role in household decision making. This evidence

shows there is a major role of household women in participation of decision making.

- ix. This study also shows that the commercial vegetable farming helps to increase social as well as economic power of the household. As reported by them this occupation increases the social prestige, economic prosperity and self-dependency. About 80 percent respondent reported that the vegetable is favorable for them. The vegetable farming has support in daily life activities such as change in consumption pattern, increase in durable goods and assets, increases in health and educational expenses. It also increase in saving amount and loan purchase capacity of the household.
- x. AS asked to the household about their problems of commercial vegetable farming, most of the household (62 percent) reported that there is market and broker problem. They cannot sell their product in reasonable price. The broker determines the price of their vegetable. In the same way quality of seeds and pesticide problem, storage problem, fertilizer problem, casual stroke and disturbance are the common major facing problems.

## **5.2 Conclusion**

This study demonstrated that commercial vegetable farming had a significant positive impact on household farmers. Women participation in commercial vegetable farming activities is very high than their male counterparts in almost all activities. Household carry out majority of the activities pertaining to commercial vegetable farming in studied area. Men's involvements are relatively limited. Household are able to contribute for the betterment of their family both socially and economically. They have been only contributed to domestic duties but also earned money for the support of their families. Due to the lack of proper land, dalit household were expected regularly to seek paid work for the support of their families. There have been positive changes in the economic status, health condition, education situation and the position of household in the study site. This farming has helped to raise women's status, health condition, education condition and the position of women in the study site. This farming has helped to raise household's status in the society through the social and economic



empowerment. This occupation provides an opportunity to generate income for rural women.

This eventually helps them in terms of capacity building and decision-making at both household and community levels. Household in the study site, now, can raise their voice and opinions clearly. Household ownership and control over saved money was very resonance in study site. They have gained social prestige from vegetable production. Household position in decision-making and other activities in their household and community have become sound. Previously, the household farmers have to ask for money and their husband for fulfill their needs. But now they became independent themselves due to their high participation in vegetable farming and marketing processes. Now, household farmers living conditions have been improved. The increased income level of the household had changed the lifestyle and thinking pattern. The self-help saving groups and mother groups provide a platform to household for sharing experiences, making plans, increase social network, improve self-esteem, raise -confidence and ultimately empower them. Solving problems through collective actions became a kind of activity that the household favored most.

Majorities of farming decision makers are minority in both categories of farmers. More than three quarters of vegetable farmers are men less than a quarter household. However, only slightly more than half of non-vegetable farmers are men and less than women. However, only slightly more than women. It implies that men favoring decision makers are more likely to run commercial vegetable farmers than those women ones.

It can be considered that this is due to gender difference in the hills of Nepal which allows men to have more decision-making power on matters which involve risk and a large sum of money such as commercial vegetable farming. Before adopting this occupation, most of the women farmers in the study site did not have any income source. Now they have not only access to financial resources but ask control over it. Because they hold the purse strings and expose in society, they command greater bargaining power in both household and community level decision-making.

Data shows that before adopting this farming women were not much consulted by their male counterparts when deciding to household and community level. But now, in

constraints conclusion, women in study site are being increasingly consulted by their men counterparts before making a decision both in household and community level. Most of the women respondents told that they have utilized the saving achieved from commercial vegetable farming in different productive sectors. It also increased their social prestige, decision making power, group and intuitional activities, exposure visit and marketing activities and finally leading them towards empowerment. The centrality of the notion of empowerment is located in the dynamics of the legitimate sharing, redistribution and of power. In the sociological sense of Max Weber, power is one's capacity to have control over other's and as such, when this capacity, when the capacity to control is legitimized it becomes authority. The social status of women and their ability to negotiate for better options at village and households' levels depends on the terms on which they have access to resources, such on land credit, new skills and information and channels of decision making in their own-right.

### **5.3: Recommendation**

Based on the findings of the study, following recommendations /suggestions are made:

- i. Household farmers are not properly aware of harmful pesticides and fertilizers and the gradual disowning traditional fertilizer and insecticides have brought previously unknown disease in the studied site Use of chemical fertilizer and harmful pesticides should be reduced and use of compost and other farmers made fertilizer should be increased.
- ii. Information, education and communication are very important to increase awareness among women. So, awareness raising and social strengthening activities are necessary to encourage creativity, initiatives and to develop entrepreneurship among them.
- iii. Household farmers want to visit different vegetable growing areas in different parts of the country to improve their knowledge, skill and capacity. So, field visit /exposure visit programs should be organized for them.
- iv. Gender sensitive programs and seminar, skill development training and programs should be launched, and access of women should be increase in these programs.

- v. The farmers should be encouraged for the use of improved variety of seeds through agricultural extension services and other agricultural support services.
- vi. Package training programs related to paddy cultivation has to be given to groups of farmers regularly.
- vii. Similarly, most of the farmers are unknown about the use of chemical fertilizer, irrigation in time, seed quality and store. Therefore, training should be necessary to improve the production of paddy.

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**Annex-1**  
**Questionnaires**

**A) Basic Information**

Name of the respondent.....

Date of Interview .....

Tole: .....

**B) Socio Economic Status**

1) Ethnicity/Caste.....

- a) Bramin/ Chetrri                      b) Janajati                      c) Dalit  
d) Other specify.....

2) Educational Status of Household head

- a) Literate                                  b) Functional literate                      c) Illiterate

3) If literate, specify the level of education

Years of schooling completed .....

4) Marital Status

- a) Married                                  b) Unmarried                      c) Others....

5) Total family members: - .....

6) Age:.....

7) Main sources of income of tha family.....

- a) Agriculture                      b) Service                      c) Foreign Employee  
d) Labour                              e) Other Specify.....

8) When did you start commercial vegetable farming?

- a. Years .....                      b) Months .....                      9)  
Which

type of vegetable do you farm?

- a) Off-seasonal                      b) Seasonal                      c) Both

10) What is the area of your land in which the commercial vegetable farming activities are being conducted?

- a. Self-owned (kattha)..... Dur.....  
b. Rented (kattha)..... Dur.....  
C. Annual Rent (Rs)....

11) Annual Expenditure in Vegetable Farming

Crops	Seeds	Pesticides/fertilizer	Labour Cost	Other Specify
Tomato				
Cauliflower				
Cabbage				
Leaf Vegetables				
Green Vegetables				
Potato				
Onion				
Brinjal				
Cucumber				
Pumpkin				
Others Specify				

12) Total income of your family

Activities	No. of Person Involved	Monthly	Annually
Wage Labour			
Salary			
Business			
Traditional farming			
Others specify .....			

13) Income of Vegetable farming

<b>Crops</b>	<b>Total production in Last year</b>	<b>Price Per Units</b>	<b>Total Revenue</b>	<b>Remarks</b>
Tomato				
Cauliflower				
Cabbage				
Leaf Vegetables				
Green Vegetables				
Potato				
Onion				
Brinjal				
Cucumber				
Pumpkin				
Others Specify				

14) Loan Status of Farmers ....

<b>Amount of Loan</b>	<b>Commercial Bank</b>	<b>Finance/ Cooperative</b>	<b>Local Samuha</b>	<b>Others</b>	<b>Remarks</b>
Source I					
Source II					
Source III					
Source IV					



15) Saving Status of Farmers at present

Place of Saving	Annually Amount (Rs.)	Remarks
Commercial Bank		
Finance/ Cooperative		
Local Samuha		
Others...		

16) Where is your main Market?

- a) Local Market (Bharatpur)
- b) Wholesale Market (Narayangarh)
- c) Others (specify) .....

17) Frequency of Sale.

- a) Daily
- b) Twice of week
- c) Weekly
- d) Once in a season.

18) Have you ever got training opportunity for vegetable farming/cultivation?

- a) Yes
- b) No

If yes, Please Specify.....

19) Who gave the training?

- a) Government
- b) Co-operative
- c) NGOs/INGOs
- d) Private
- e) Others specify....

20) How many trainings have you participated in? Mention the type of trainings.

Number of Training	Duration	Remarks

21) Where did you receive new message about Vegetable farming?

- a) Newspaper
- b) T.V.
- c) Friend
- d) development workers
- e) Neighbors
- f) Mobile
- g) Others.....

22) Did this farming make women self-reliant?

a) Yes

b) No

23) Is there any change in women participation in village's institutions /groups and intuitional role after adopting this commercial vegetable farming?

a) Highly increased

b) Moderately Increased

c) As usual

*Thanks for your Co-operation*