Marketing Strategy of Vegetable Products in Nepal:

A Study of Thaha Municipality of Makawanpur District.

Thesis Report

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Submitted By:

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Declaration

I hereby declare that the thesis entitled "**Marketing Strategy of Vegetable Products in Nepal: A Study of Thaha Municipality of Makawanpur District"** has been prepared by me under the supervision and guidance of my supervisor. This research has been prepared in the partial fulfillment of the requirement of the Degree of Master's in arts in Rural Development. This research is my original work and it has not been presented and submitted anywhere before for the award of any degree or any other purpose. I assure that not any part of content of this research has been published in any form before.

……

Sujata Rimal

Date (BS): 2081/10/23

Date (AD): 2025/02/05

Letter of Recommendation

This is to certify that the thesis entitled **Marketing Strategy of Vegetable Products in Nepal: A Study of Thaha Municipality of Makawanpur District;** is an independent study of Ms. Sujata Rimal, which is completed under my guidance and supervision. I recommend this thesis for final evaluation and approval.

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Asst. Prof. Ramesh Neupane
Supervisor
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Date (BS): 2081/10/25
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Approval Sheet

We hereby certify that this thesis entitled **Marketing Strategy of Vegetable Products in Nepal: A Study of Thaha Municipality of Makawanpur District;** submitted by Ms. Sujata Rimal, meets the necessary scope and quality standards. The thesis has been deemed satisfactory for partial fulfillment of the requirements for the Master of Arts degree in Rural Development. The thesis has been evaluated and approved.

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Self-Declaration Letter

Plagiarism Test Report

Abstract

I conducted the research study entitled Marketing Strategy of Vegetable Products in Nepal which aims to analyze the marketing of the vegetable products and their marketing strategies in Thaha Municipality (ward 3 Tistung and ward 6 Palung). They are the major vegetable hub in Nepal. The objectives of this research are to analyze the agricultural production status of the farmers, to assess market structure and marketing channels and to explore the challenges and prospects of marketing of vegetable products.

A quantitative dominant mixed method was used for data collection. Both primary and secondary sources were used for the data collection purpose. Household Survey was used for quantitative data collection, whereas Focused Group Discussion and Observation Method were employed for qualitative data collection. Among the 600 total households in two wards of Thaha municipality, I selected 108 households from two wards as the research sample.

Mostly the 54.6 percent farmers between age group 30-45 years were involved in vegetable farming. Most of the farmers had completed lower secondary level. 58.3 percent Janajati community were found in the study area with majority 82.4percent following Hinduism. The purpose of the vegetable farming was for both self-consumption and selling purpose. Most of the farmers (43.5 percent) have land holding more than 10Ropani. The farmers had mostly farm relating expenses for fertilizers and pesticides. Major growing vegetables were potato, tomato, spinach, cabbage, cauliflower, peas, Akabare, etc. Majority of the farmers had annual income between 1 lakh to 2 lakh.

The primary mode of selling vegetables were through the middleman. The price for the vegetables were also fixed by the middlemen. The distance of selling vegetables was within 1km. The study showed that 55.6 percent farmers never get the updated market information.

The farmers face problems like price fluctuations, untimely supply of fertilizers and pesticides, poor market access, and lack of proper facilities, difficulty in hiring labor in the study area. From vegetable farming the quality of life of farmers has upgraded.

The study comes to the conclusion that the farmers of study area are fully dependent on middleman, following traditional farming practices without any trainings. The government and stakeholders should focus on long-term visions. An awareness program is urgently needed to teach proper use and handling of chemical fertilizers and pesticides. Forming cooperatives, improving transportation, establishing cold storage and introducing better policies will help create practical strategies to make vegetable marketing easier and more profitable for farmers in the area.

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Acronyms/Abbreviations

ADS- Agriculture Development Strategy

AISP- Agricultural Inputs Subsidy Program

BIF- Bio-Intensive Farming

CASA- Commercial Agriculture for Smallholders and Agribusiness

FAO- Food and Agriculture Organization

FGD- Focus Group Discussions

GDP- Gross Domestic Product

MIS- Market Information Systems

MoALD- Ministry of Agriculture and Livestock Development

MoC- Ministry of Commerce

NMSA- National Mission on Sustainable Agriculture

NPC- National Planning Commission

NSO- National Statistics Office

PPPs- Public Private Partnerships

SLF- Sustainable Livelihood Framework

SPSS- Statistical Package for the Social Sciences

UNDP- United Nations Development Programme

CHAPTER-I

INTRODUCTION

1.1. Background of the Study

Agriculture has always been a vital component of economies around the world, especially in developing countries where it is the main source of income. There are now more chances and difficulties as a result of agriculture's transition from subsistence to commercial methods. Food security, rural development, and income generation are all significantly impacted by the commercialization of vegetable cultivation in this setting (FAO, 2021).

Developments in technology, trade, and market integration have changed commercial agriculture, especially vegetable production, on a global scale. Marketing is still one of the biggest obstacles, though. Limited market access, price instability, poor infrastructure, and a lack of market knowledge are some of the problems that farmers frequently deal with. These elements make it more difficult for them to make the most money and maintain their living standard (World Bank, 2020). The rising need for locally grown vegetables is the consequence of the world's fastest population growth, urbanization, and increasing awareness of health issues (Nichols and Hilmi, 2009). Low vegetable consumption is an obvious sign of harmful diet, which certainly lowers people's effectiveness. The amount of vegetables that each person needs at each meal is estimated to be 45% of the total volume of the meals in a balanced diet. This is only accurate if the vegetables are eaten raw and unprocessed (Agusiabo, 1979).

About 66 percent of Nepal's population works in agriculture (NSO,2021). Since the majority of people in Nepal work as farmers, agriculture plays a large role in the country's GDP (MoALD, 2022). It makes a major contribution to the national economy and constitutes nearly one-third of the country's GDP. It generates a wide range of occupations, from small-scale businesses to farms. Food insecurity and frequent natural disasters such as earthquakes, landslides, droughts, floods, and insect outbreaks are among the hazards that Nepal faces. The nation's agriculture industry is still mostly focused on subsistence farming, which has a negative impact on

agricultural commodity production and productivity (FAO, 2024). According to Rajbanshi (1985), increased vegetable production may enhance food security and provide women, young people, and those with limited opportunities with additional income and employment options.

The farming of vegetables is one of the most commercialized and profitable agricultural industries, especially in areas like Tistung and Palung, which are known for their favorable climate and rich soil. Vegetable farming in Nepal has a lot of potential, but it faces a number of marketing obstacles, such as ineffective supply chains, unorganized marketplaces, and little government assistance (Adhikari et al., 2021). Due to rising urban demand, road accessibility, profitability, and market demand, farmers are receiving a lot of attention in vegetable farming (Rai et al., 2019).

Tistung and Palung, a major center for commercial vegetable farming in Nepal, is situated in the Makawanpur district. This region's farmers mostly produce high-value products for local and urban markets, such as potatoes, tomatoes, cabbages, spinaches, etc. However, a number of obstacles, including a lack of suitable storage facilities, reliance on intermediaries, and shifting market demand, limit the commercialization of these products (Sharma & Ghimire, 2020). Enhancing farmer income and guaranteeing sustainable agricultural growth require an understanding of these challenges and the implementation of strategic marketing techniques.

This study intends to investigate the marketing strategies used by commercial vegetable producers of Tistung and Palung, highlighting significant obstacles and chances to provide workable answers. In order to add to the conversation on sustainable agricultural marketing strategies, the study is positioned within the larger global and Nepalese agricultural context.

1.2. Statement of the Problem

Vegetable farming is vital to the local economy in Nepal where it gives households both revenue and subsistence. Bhandari and Paudel (2021) emphasized that vegetable farming improves farmers' life by providing an alternate source of employment and income. They mention how important vegetables are for supplying key vitamins and nutrients, which serve as protectors against a number of diseases.

In the study area Tistung and Palung, farmers have a difficult time properly marketing their goods, which lowers their profitability. The high costs of seeds, fertilizer, and pesticides are among the main obstacles since they raise production costs and lower the possible profits from vegetable sales. Additionally, the farmers' incapacity to access higher-value markets is worsened by ineffective market connections and inadequate awareness of marketing strategies. The pricing and distribution channels are frequently controlled by intermediaries, wholesalers, and retailers, which results in low margins for farmers (Sharma et al., 2015; Neupane & Thapa, 2020). These ineffective marketing strategies combined with rising input costs lead to unsustainable farming methods and threaten the region's vegetable farming industry's future. Therefore, this study aims at finding the answer of the following research questions:

i) What is the socio-economic status of the farmers involved in vegetable farming?
ii) What is the vegetable production status of the farmer?
iii) What is the status of marketing channels and information centre for vegetable products?
iv) What are the challenges and prospects of marketing of vegetable products?

1.3. Objectives of the Study

The general objective of the research is to analyze the marketing strategy of vegetable products in Tistung and Palung of Thaha municipality.

The specific objectives of the study are:

I. To analyze the vegetable production status of farmers
II. To assess market structure and marketing channels of vegetable products
III. To explore the prospects and challenges of marketing of vegetable products

1.4. Significance of the Study

This study is crucial for thoroughly understanding the current socio-economic and agricultural context of Thaha Municipality, with a specific focus on vegetable farming. By critically examining the strengths and weaknesses of vegetable farming in the area, the study aims to identify actionable solutions that benefit local farmers and stakeholders. The findings are expected to serve multiple purposes. First, they offer farmers a pathway to enhance their livelihoods by highlighting sustainable income-generation methods that require minimal investment. Through the identification and promotion of efficient marketing strategies at the local level, the study contributes to improving food security, increasing revenue, and minimizing losses for smallholder farmers.

Moreover, the focus of study on infrastructure and market accessibility provides insights for policymakers. These insights are crucial for formulating evidence-based decisions that support rural development and empower smallholder farmers. By providing actionable recommendations, the study will bridge gaps in the existing marketing systems, fostering collaboration between farmers, traders, and consumers. In practice, the study also seeks to develop practical frameworks for capacity building. This includes initiatives to improve farmers' knowledge of market dynamics, which will enhance their ability to compete and thrive. Ultimately, the research aims to contribute to the broader goal of fostering a sustainable and effective agricultural sector in Thaha Municipality, setting an example for similar regions in Nepal.

Additionally, the study's emphasis on market accessibility and infrastructure offers policymakers useful information. Making evidence-based decisions that empower smallholder farmers and promote rural development requires these insights. Farmers, traders, and consumers will work together as the study fills in the holes in the current marketing systems with practical solutions. Creating useful frameworks for capacity building is another goal of the study. This includes programs aimed at increasing farmers' understanding of market dynamics, which will improve their capacity to prosper and compete. As a model for similar areas in Nepal, the research ultimately seeks to support the larger objective of developing a productive and sustainable agricultural sector in Thaha Municipality.

1.5. Limitations of the Study

This study focuses on vegetable farming and marketing in Thaha Municipality, specifically Ward 3 (Shikarkot, Palung) and Ward 6 (Bajrabarahi, Tistung). It includes vegetable farmers and market stakeholders, such as traders and wholesalers, but excludes other types of farmers and businesses. The study is about marketing strategies for vegetables and does not cover other topics like farming methods or government policies unless they directly affect marketing. The information used in the study are from the primary data collected from the field. Due to limited time, resources and the respondent's knowledge the generalizability of the findings is limited.

The findings from the study reflects local contexts and may not be generalized in to another area. As this study is conducted for the partial fulfillment of the requirement of the Degree of Master's in arts in Rural Development, the study is limited in its scope and depth.

1.6. Organization of the Study

The study has been divided into five chapters. The first chapter deals with the introduction. Second chapter is related with the literature review. Third chapter deals with the research methodology The fourth chapter has detailed the presentation and interpretation of field data. Summary, conclusions and recommendations has been introduced as the fifth chapter.

CHAPTER-II

LITERATURE REVIEW

2.1. Conceptual Review

2.1.1. Vegetable Production

Vegetable production is a key sector of agriculture that plays vital role in ensuring food security, enhancement of livelihoods and it gives a major contribution to the economy. It can be categorized into i) subsistence farming ii) commercial farming. Subsistence vegetable farming is the farming that focuses on growing enough vegetables for self-consumption. It is common in rural areas with fewer resources, where farmers use small pieces of land and traditional methods. This type of farming helps families stay food secure but doesn't produce much for selling in the market because of limited tools and modern techniques. Commercial vegetable farming is the farming that is done to grow large amounts of vegetables for sale with the motive of profit. It uses modern methods like greenhouses, good seeds, and better irrigation. This type of farming helps to supply the vegetable products to cities and export markets. It creates jobs opportunities, and boosts the economy.

The vegetable production is acknowledged as a sector with significant potential for commercialization in Nepal because of its advantage in export markets. The country's significant geographic diversity contributes to its comparative advantage. Furthermore, it is recognized that the vegetable subsector has a major role in raising the general standard of life of small farmers, particularly female farmers, by increasing their income and increasing the amount of vegetables in their diet (Acharya and Kafle, 2019). Vegetable farming is also an excellent option for smalls cale farmers looking to commercialize their operations due to its shorter growing season and comparatively simple market availability. Vegetable commercialization and household welfare have been shown to positively correlate. Vegetable commercialization is regarded by development economists as a critical aspect of the development process (FAO, 2017).

Vegetable farming is better than growing cereal crops because it creates more jobs and needs more workers (Bhatta and Doppler, 2010; Dias, 2011). The varied agroclimatic conditions of Nepal facilitate the development of a wide range of vegetables, such as potatoes, tomatoes, and leafy greens. The Department of Agriculture (2020) reports that smallholder farmers have made a substantial contribution to the decade. But issues like poor marketplaces, insufficient

infrastructure, and unstable pricing continue to exists. Any economy relies on agriculture. Since the beginning of life on Earth, it has been used in one way or another.

Historically, farming was limited to family consumption and served only as a means of subsistence. However, due to the current population growth, strong consumer demand for a variety of food goods, and technological advancements, agriculture has changed into a business where farming is done for profit (Rath, S, 2021). According to a study by Jha et al. (2016), improper irrigation has also affected agricultural returns. Timalsina and Shivakoti (2018) found that a shortage of high-quality seeds is another factor limiting the output of vegetables.

2.1.2. Market Information of Vegetable Farming

The key facts and information required for efficient vegetable product distribution, marketing, and consumption are all included in market information of vegetable farming. Setting prices, influencing consumer behavior, and streamlining the vegetable supply chain all depend on this information. To increase the effectiveness of the vegetable market in Nepal, producers, wholesalers, retailers, and consumers have connectivity through vegetable information. Market information includes information on customer preferences, pricing patterns, and demand for different veggies. Knowing when to offer specific crops is essential for both growers and consumers in Nepal, since the vegetable market is heavily reliant on seasonality (Shrestha, 2019). Vegetable farming has experienced significant growth in recent years (CASA, 2020) as the Government of Nepal has designated various regions to enhance the advantages of vegetable cultivation.

Knowledge of the logistics, quality, and shelf life of vegetables from farm to market is referred to as supply chain information. Vegetable sales can be greatly impacted by making sure they arrive at the market promptly and in good condition (Gurung and Koirala, 2021).

Consumer Information describes how well-informed consumers are about the health advantages, nutritional content, and origins of vegetables. The value of organic and locally grown veggies is becoming more widely recognized in Nepal, which may affect consumers' decisions to buy (Bhattarai, 2020).

The role of vegetable information in marketing strategy is remarkable. It helps in consumer decision-making. Consumer decisions can be directly influenced by information about the cost, quality, and health advantages of vegetables. Using this information, marketing tactics can effectively promote some veggies as more affordable or healthy (Nepal, 2021). Having access to

up-to-date data on market demand and vegetable availability enables improved planning and lowers supply chain waste. This is especially crucial given Nepal's disjointed vegetable supply chain (Shrestha, 2019). By knowing the market and consumer preferences, manufacturers and retailers may make efficient pricing adjustments that maintain competitiveness and increase sales (Gurung and Koirala, 2021).

There is limited access to information through which farmers and small-scale producers in rural Nepal often face challenges in accessing up-to-date market and price information due to the lack of infrastructure (Shrestha, 2019). The vegetable supply chain in Nepal is highly fragmented, with multiple intermediaries, which leads to inconsistent and incomplete information sharing (Bhattarai, 2020).

2.1.3. Marketing Channels and Distributions

According to research, farmers in Nepal mostly use traditional marketing methods including local marketplaces and middlemen. According to research by Sharma et al. (2018), these middlemen frequently lower farmers' profits while also compromising the freshness of the crop. Alternative channels, including cooperatives and direct-to-consumer sales, have been suggested to boost profitability and ensure greater price realization for farmers. Vegetables are in greater demand since they are a necessary component of a balanced diet and daily meals, as well as offering nutritional security (Rai et al., 2019).

Nepal has an advantage over other countries in producing a variety of vegetable crops due to its vast range of agro- ecological variables. Currently, fifty of the more than 200 vegetable species and their variants are farmed commercially in Nepal's various climate zones (Shrestha et al., 2004). Nepal can produce and offer fresh vegetables all year round due to its varied ecological diversity, which is very advantageous for the country's economy, employment, and nutritional needs (Malla. S., 2022). The most significant obstacles in vegetable cultivation, according to Shrestha et al. (2014), were fluctuation in prices and increased middleman margins.

2.2. Theoretical Review

Several theories help us understand marketing strategies and dynamics in agriculture. One important theory is the supply and demand theory (Marshall, 1890), which explains how the availability of products (supply) and the desire of consumers to buy them (demand) affect prices. This is especially useful for vegetable markets, where changes in production can cause prices to rise or fall. Another helpful concept is value chain analysis (Porter, 1985), which looks at all the steps involved in producing, processing, and delivering goods to consumers. In vegetable farming, this approach helps pinpoint problems in the supply chain and find ways to improve or add value at different stages.

Theories about consumer behavior are also important for understanding how markets work. For example, Ajzen's theory of planned behavior (1991) explains that people's decisions are influenced by their attitudes, social pressures, and how much control they feel they have. This helps predict demand for fresh vegetables. Similarly, Maslow's hierarchy of needs (1943) shows that people prioritize their basic needs, like food and health, which explains why they prefer fresh vegetables.

Another useful idea is Rogers' diffusion of innovations theory (2003), which explains how new practices and technologies spread among people. For farmers in areas like Tistung and Palung, factors such as how useful, compatible, and visible a new method is can encourage them to adopt modern marketing practices.

This study focuses on key theories to understand the vegetable market and marketing strategies. The marketing mix theory refers to the key factors that businesses must consider when promoting their products or services. It is commonly known as the 4Ps: Product, Price, Place, and Promotion. "Product" refers to what a company is selling, "Price" is the cost to the customer, "Place" is where the product is sold or how it reaches customers, and "Promotion" involves the methods used to advertise and sell the product. These elements are combined to create a strategy that meets the needs of customers and helps the business succeed. In later years, the marketing mix was expanded to include 3 more Ps: People, Process, and Physical Evidence, especially for services. According to Kotler and Keller (2016), the marketing mix is a vital tool for understanding how to deliver value to customers while ensuring business growth.

In 2008, Michael Porter updated his Five Forces model to help businesses understand what affects competition in their market. The five forces are: 1) Threat of new entrants, which looks at how

easy it is for new companies to start competing; 2) Bargaining power of suppliers, meaning how much power suppliers have to raise prices; 3) Bargaining power of buyers, which is how much customers can influence prices or quality; 4) Threat of substitutes, which is the risk that other products could replace what a company offers; and 5) Industry rivalry, or how much competition there is between businesses. Porter said that by understanding these forces, companies can figure out ways to do better than their competitors. All of which have an impact on Nepal's vegetable supply chain.

The sustainable livelihood framework (SLF) (Chambers and Conway, 1992) focuses on understanding and improving how people, particularly in rural areas, make a living in a way that is sustainable over time. It highlights the various resources people rely on, including physical resources like land and tools, human resources such as skills and health, natural resources like water and forests, social resources like networks and relationships, and financial resources such as income and savings. The framework emphasizes the importance of building livelihoods that can withstand shocks, such as natural disasters or economic changes, while maintaining or improving resources for future generations. It also considers external factors like policies, institutions, and structures, which can either support or hinder the development of sustainable livelihoods. By promoting solutions that ensure the well-being of individuals and communities today while protecting resources for the future, the framework helps guide development efforts toward long-term sustainability.

The theory of agricultural commercialization suggests that farming shifts from producing food mainly for personal consumption to producing crops and livestock for sale in markets. This change is influenced by factors like better access to markets, the adoption of new farming techniques, and changes in government policies. As farmers start to focus on generating profit, they often use modern tools and practices, which can increase their production and income. However, this process can also lead to problems like inequality and environmental damage. Barrett and Dorosh (1996) explain that while commercialization can boost productivity and improve rural economies, it also requires careful management to avoid negative social and environmental effects. These ideas are especially useful for studying practices in Tistung and Palung.

Furthermore, from agriculture to retail distribution, the Value Chain Theory is essential for comprehending how value is added at every step of the vegetable production process (Porter, 1985). The study of consumer behavior theory looks at the variables and procedures that affect

people's decisions to buy. It examines a range of internal and external components, such as social influences like family, culture, and social groups, as well as psychological aspects like perception, motivation, and attitudes. The theory also takes into account how individual characteristics, such lifestyle, income, and personal preferences, affect patterns of consumption. The steps of the decision-making process, from problem identification and information gathering to the actual purchase and post-purchase assessment, are also examined by consumer behavior theory. Businesses and marketers can create more successful strategies to satisfy customer wants and increase sales by having a better understanding of these habits (Kotler & Keller, 2016).

Presented in Transforming Traditional Agriculture (1964), Schultz's Theory of Agriculture highlights the value of investing in market access, innovation, and human capital in order to boost agricultural productivity and rural economic development. He contends that by enabling farmers to embrace new farming methods and technologies, education and skill development increase production. In order to improve agricultural results, Schultz also emphasizes the necessity of infrastructural improvements, such as market accessibility and irrigation. Because it emphasizes how market integration, innovation, and education may raise farmers' incomes and productivity, this theory is pertinent to the marketing of vegetables in places like Tistung and Palung. Sector-specific concerns such as perishability, market accessibility, and the function of cooperatives in Nepal's agricultural market are clarified by agricultural marketing theory (Kotler et al., 2015).

2.3. Empirical Review

Kotler and Keller (2016), emphasized the implementation of digital platforms as a viable way to enhance marketing strategies. Shrestha et al. (2021) highlighted the effectiveness of mobile applications such as e-Sambad, which link customers in cities with farmers in rural regions. Farmers can make better judgments, lessen information asymmetry, and access real-time market prices through these systems. To cut out middlemen and boost their income by 15%, a group of vegetable farmers in the Dhading region, for example, sold their tomatoes straight to customers in Kathmandu via e-Sambad.

Sharma et al. (2020) investigated the effects of cooperatives in vegetable cultivation in India. The researchers found that farmers who belonged to cooperatives made more money, had less dependence on middlemen, and had greater access to metropolitan markets. But the study also identified issues that hindered scale, such as inadequate logistics and a lack of market

knowledge. This knowledge is helpful in comprehending comparable situations in Nepal, where cooperative farming has been advocated as a method of rural development.

Joshi et al. (2006) found that vegetable farming is both profitable and requires a lot of labor, making it a good option for small farmers. Smallholders can grow vegetables efficiently and use family labor, which helps them earn regular profits. This is why vegetable farming became popular among small farmers, as it met their financial needs and made good use of their available resources.

Rajbhandari (2011) examined bio-intensive farming (BIF) in Udayapur district for eight years. He found that BIF improved crop variety, boosted yields, increased food security, and supported rural livelihoods. Farmers who used BIF were able to sell their crops, meet basic needs, and reinvest in farming, showing long-term benefits.

Pradhan et al. (2013) studied organic vegetable farming in Bhaktapur and found it more profitable than traditional farming. The income from organic farming helped farmers improve their homes, health, education, and social life, raising their social and economic status and boosting their confidence.

Singh and Maharjan (2013) analyzed organic farming and the market for organic vegetables in Nepal. They found that the demand for organic farming was increasing due to environmental concerns and the expanding market. Organic farmers earned more than traditional farmers, especially from selling organic vegetables. The study stressed the need for new markets, research, and public education to make organic farming more profitable.

As the demand for more effective means of bringing farmers and consumers together has grown, so too have marketing techniques for vegetable products in Nepal. According to Adhikari and Koirala (2018), farmers' revenues are frequently lowered by conventional marketing channels such depending on local intermediaries, or "*arhatiyas*," because of the high expenses of transactions and their weaker negotiating position. For instance, inefficient storage and transportation systems cause significant losses for farmers in the Chitwan Valley's rural communities. Perishable vegetables like tomatoes and leafy greens, which need quick market access to reduce spoiling, are most affected by this.

(Regmi et al., 2017) claimed a significant obstacle in vegetable marketing is the absence of cold storage, which contributes to a high post-harvest loss rate. For instance, it was found that insufficient storage facilities in the Kathmandu Valley result in the waste of around 30% of

vegetable produce, especially cauliflower and cabbage. Farmers' revenues are impacted since they frequently have to sell crops for less money or deal with unsold goods.

Improved marketing techniques, like enhancing value chain integration and market connections, have been proposed by a number of studies as solutions to these problems.

According to Khatri and Sijapati (2019), small-scale farmers could gain from creative marketing techniques such cold storage facilities and direct sales through cooperatives. Using the "Farmers' Market" in Pokhara as an example, local farmers sell their vegetables to customers directly, cutting out intermediaries and guaranteeing better rates for everyone. This project has given consumers access to fresh, locally grown produce and improved farmers' market accessibility.

Ghimire (2020) studied how women's involvement in commercial vegetable farming affects food security and livelihoods. The research showed that women's participation in agriculture could improve household incomes and food security. It also highlighted the importance of local value chains in helping women farmers in Kailali district.

Bhandari and Paudel (2021) analyzed the impact of vegetable farming on farmers' livelihoods in Dhankuta, Nepal. They found that vegetable farming improved farmers' socio-economic status. The success of vegetable farming was linked to better use of local resources, the formation of cooperatives, and good transportation. However, the study called for an education campaign to teach proper use of fertilizers and pesticides to ensure sustainable farming and better soil health.

2.4. Policy Review

The Agriculture Development Strategy (ADS) of Nepal was launched in 2015 with the goal of increasing farmers' access to markets and agricultural production, especially for high-value commodities like vegetables. To guarantee that farmers can access both domestic and foreign markets, ADS places a strong emphasis on enhancing market infrastructure, fortifying market connections, and encouraging contract farming. The creation of market information systems that offer precise and timely data on supply, demand, and pricing trends is a crucial part of the approach. The ADS also emphasizes the necessity of capacity-building programs for local producers and farmers to interact with markets and guarantee the quality of vegetable goods. In order to improve marketing and distribution networks, which are intended to raise farmers' incomes and support the expansion of the agricultural industry, public-private partnerships are viewed as essential.

By improving quality standards and packaging to satisfy global needs, the Trade Policy 2015 facilitates the growth of export markets for Nepalese agricultural products, particularly vegetables (MoC, 2015).

Additionally, the government's Vegetable Production and Marketing Program encourages the creation of wholesale markets and collection centres, which make it easier to gather and deliver vegetables to urban markets. Farmers may now find prices more easily and transparently thanks to programs like the National Agriculture Market and the use of digital platforms for market connections (MoAD, 2020). Together, these initiatives are essential to boosting vegetable marketing in Nepal and raising farmers' standard of living by opening up new markets and lowering obstacles to entry into higher-value markets.

Nepal's 16th Plan places a strong emphasis on modernizing and commercializing agriculture markets in order to make the industry sustainable and competitive. One of the most important measures is the creation of infrastructure to support effective vegetable marketing, including as wholesale markets, collection points, cold storage, and transportation networks. In order to provide smallholder farmers with collective bargaining, branding, and market access, the plan also emphasizes the strengthening of cooperative marketing structures. While export facilitation measures like streamlining customs procedures and quality certification are intended to increase international trade of agricultural products, public-private partnerships (PPPs) are promoted to attract agribusiness investment. With the advent of digital market information systems (MIS), farmers may now access real-time pricing and demand data, enabling them to make well-informed decisions. In order to reduce marketing uncertainty, risk management techniques such as crop insurance and price stabilization mechanisms are also addressed. The purpose of these laws is to increase the marketability of vegetables grown in production centers such as Tistung and Palung (NPC,2019).

Innovation Theory and Technology Transfer refers to the process of spreading new technologies and ideas to improve industries, such as agriculture. Innovation theory focuses on how new ideas or inventions are developed and adopted by individuals or organizations. Technology transfer is about moving these new technologies from one place to another, usually from research centers or companies to the end users, such as farmers. In agriculture, innovation theory suggests that technological advancements (such as new farming equipment, improved crop varieties, or digital tools) can help farmers increase productivity, efficiency, and sustainability. The theory emphasizes the importance of knowledge-sharing and collaboration between research

institutions, technology developers, and farmers. Technology transfer plays a key role in ensuring that these innovations reach the farmers who can benefit from them. This can involve partnerships between the government, private companies, and agricultural research institutes to help farmers adopt new technologies. For example, extension services (education and training programs for farmers) are crucial in transferring technology effectively (World Bank, 2017). One important part of technology transfer is adapting innovations to local conditions. What works in one region may not be effective in another due to differences in climate, resources, or farming practices. Therefore, successful technology transfer also requires adapting innovations to suit the needs of local farmers (Rogers, 2003). Countries like India and China have successfully used innovation theory and technology transfer to improve agricultural productivity. For example, India's government has worked with research institutions to introduce improved crop varieties and sustainable farming practices to farmers through technology transfer programs (Sharma, 2020).

In Nepal, the government helps farmers by giving them subsidies to lower the cost of things like seeds, fertilizers, and farming equipment. The Agricultural Inputs Subsidy Program (AISP) is one such program that reduces the price of fertilizers and improved seeds to help farmers increase their crop production (MoALD, 2020). The government also offers price support and insurance to protect farmers from losses caused by natural calamities or price changes. Additionally, there are low-interest loans available to encourage farmers to use new farming technologies (World Bank, 2017). These subsidies help increase agricultural productivity and food security, but they have to be more cautious to avoid the problems that can occur in the market (FAO, 2017).

Agricultural modernization policies aim to improve farming by using new technology and methods to increase productivity and sustainability. These policies promote the use of modern machinery, digital tools, and smart farming techniques to reduce labor and improve efficiency (FAO, 2017). They also focus on using better seeds and fertilizers to boost crop yields and minimize losses (Chauhan et al., 2021). Educating farmers on modern farming practices, crop management, and market trends is important, as well as building efficient irrigation systems like drip irrigation to save water (Reddy et al., 2018). Improving infrastructure such as roads, storage, and cold chains helps farmers sell their products and reduce waste (World Bank, 2017). Financial help through subsidies, loans, and insurance supports farmers in adopting new methods (India's Ministry of Agriculture, 2020). Lastly, these policies encourage eco-friendly farming practices, such as organic farming and crop rotation, to ensure long-term agricultural health (UNDP, 2020). Countries like India with its National Mission on Sustainable Agriculture (NMSA) and China's

Agricultural Modernization Plan provide good examples of how government support and innovation can improve farming (Sharma, 2020; FAO, 2021).

2.5. Research Gap

There isn't much detailed research on how vegetable producing farmers in specific areas like Thaha Municipality market their products. Most studies focus on larger regions or the entire country, overlooking the specific challenges and needs of local farmers in rural places like Tistung and Palung. While existing studies discuss problems such as price fluctuations, poor infrastructure, and limited access to markets, they don't show how these issues affect small farmers in these specific areas. Additionally, there's a lack of research that combines numbers (data) with personal experiences to understand how farmers, middlemen, and consumers view marketing strategies.

As the demand for fresh vegetables continues to grow, especially in urban areas, it is important to explore practical ways for farmers to improve their marketing and income. This study aims to address this gap by focusing on the unique challenges and opportunities faced by vegetable farmers in Thaha Municipality.

2.6. Conceptual Framework of the Study

The conceptual framework makes the concept of the research clearer. In agriculture, marketing is crucial since it helps farmers sell their goods and establish a good connection with the customers. An effective marketing strategy enables vegetable farmers to reach a larger consumer base and command reasonable pricing. The effectiveness of marketing, however, is dependent on a number of variables.

The factors like better roads, technology, government assistance, and farmer education are some of the elements that make marketing simpler and more successful. They are referred to as promoting factors. However, obstacles including inadequate transportation, a lack of market knowledge, and an excessive reliance on intermediaries make it more difficult for farmers to sell their produce. These are the constraining factors. The goal of this study is to comprehend the factors that contribute to and hinder local vegetable marketing. This can be better understood through the figure below.

Figure1: Conceptual Framework

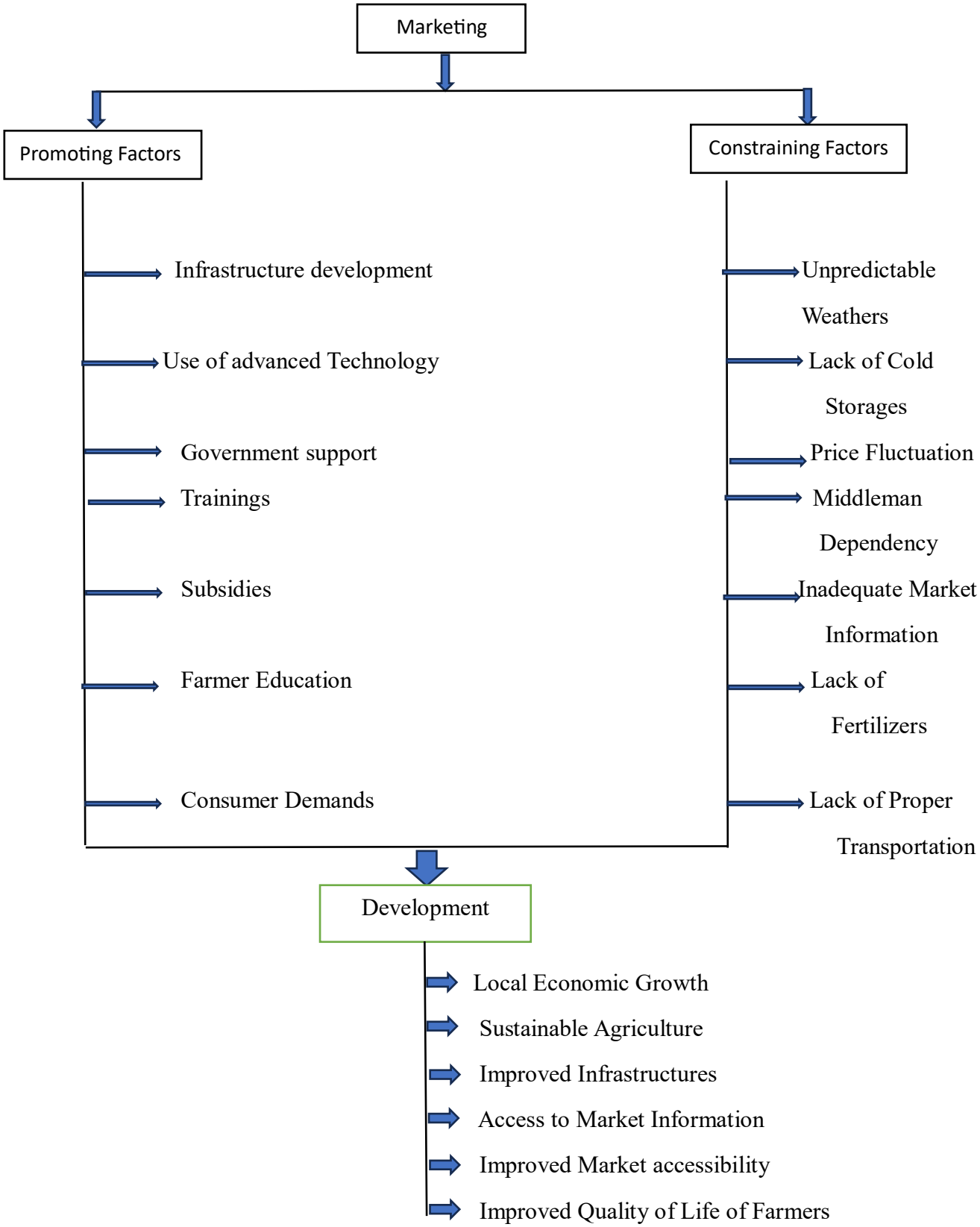


Figure 1 explains that the factors influencing the marketing of vegetables in Tistung and Palung are categorized into two major areas i.e. promoting factors and constraining factors. Promoting factors such as infrastructure development, use of advanced technology, government support (including training and subsidies), farmer education, and growing consumer demand are essential for enhancing marketing effectiveness. These factors provide the foundation for improving the overall vegetable marketing system in the study area.

Conversely, the study identifies several constraining factors that hinder effective marketing. These include the lack of proper transportation facilities, inadequate market information, price fluctuations, dependence on middlemen, lack of cold storage facilities, and the challenges occurred due to unpredictable weather. These obstacles directly affect farmers' ability to market their vegetable products efficiently and profitably.

The results of addressing these factors would lead to improved market accessibility, increased farmer incomes, and enhanced sales of vegetable products. This would further contribute to local economic growth, sustainable agricultural practices, improved rural infrastructure, better access to market information, and greater market efficiency. Ultimately, these improvements align with the broader objectives of the study: to enhance the livelihoods of vegetable farmers in Tistung and Palung and to develop effective marketing strategies that support the overall development of the region.

Chapter-III

RESEARCH METHODOLOGY

3.1. Research Design

To obtain the understanding of vegetable product marketing strategies in Nepal, this study used a descriptive research technique and quantitative dominant mixed methods. Descriptive research technique is used for the thesis because it helps to understand and explain the current situation of vegetable marketing in Tistung and Palung. This method allows to study and describe the challenges farmers face, the strategies they use, and the factors that affect their marketing activities. It also helps to combine both numbers and detailed opinions, making the analysis more complete. Descriptive research is suitable for the study as it focuses on understanding "what" is happening and "how" it is happening, which aligns with the goal of identifying issues and suggesting improvements.

According to Creswell and Plano Clark (2017), a mixed methods approach allows for a more comprehensive exploration of research questions by integrating both quantitative and qualitative data. In this study, the quantitative component has been dominant, as the primary focus was on gathering numerical data through household surveys. However, qualitative methods complemented the survey data, providing rich contextual insights via Focus Group Discussions (FGDs) and observations.

3.2. Rationale for the Selection of the Study Area

Thaha Municipality, especially Ward 3 (Shikarkot, Palung) and Ward 6 (Bajrabarahi,Tistung), was chosen for this study because it is an important area for vegetable farming in Nepal. The vegetables are supplied to major cities like Kathmandu, Pokhara, Birgunj, and even to India. Even in the Kalimati and Balkhu fruits and vegetable centres, majority of vegetables come from Tistung and Palung especially from ward 3 and ward 6. These wards had good farming conditions, like fertile soil, suitable weather, and irrigation facilities. However, farmers faced problems such as poor access to markets, high transportation costs, and lack of proper infrastructure. Since most people in these areas relied on vegetable farming for their income, studying their marketing strategies helped to understand their challenges and find solutions.

3.3. Nature and Sources of Data

The study follows both qualitative and quantitative data. Different types of data and information collection was done and analyzed in this study. The source of data collection is from both primary and secondary source to meet the objectives of the study. Primary data were collected by household survey, focused group discussions and observation to the farmers. The secondary data were obtained from various books, journals, research papers, relevant magazines, newspapers and online medias.

3.4. Universe, Sample and Sampling Procedure

Tistung and Palung are a part of Thaha municipality in the Makawanpur district of Nepal. The municipality comprises of 12 wards. These wards consists both rural and urban areas, including the study area Tistung and Palung which lies in ward 6 and ward 3 of Thaha municipality respectively. The total population of Tistung and Palung is 37,409 (NSO, 2021). The ward 3 Bajrabarahi, Tistung and ward 6 Sikharkot, Palung were selected purposively for the study purpose because majority of vegetables inside Kathmandu valley comes from these wards of Tistung and Palung. According to the municipality profile of Thaha municipality 2024, there are 600 commercial vegetable farmers in study area who are considered as the universe of the study. Considering 33.33% as sampling frame of the universe, 108 respondents were selected through simple random sampling method putting equal number of respondents in two wards because both areas are highly sensitive in terms of vegetable production.

Table 3.1: Universe and Sample of the Study

Ward no.	Universe	Sample
3	250	54
6	350	54
Total	**600**	**108**

Source: Thaha municipality Profile,2024

3.5. Techniques and Tools of Data Collection

The following techniques were used for the data collection:

3.5.1. Household Survey

Household survey questionnaire was developed as tool of data collection. Household survey was used to gather quantitative data on marketing of vegetable products. There was the use of both structured and unstructured questionnaires on the selected study area. Socioeconomic status of farmers, agricultural production status of farmer, marketing channels and distributions were made coverage through HHS. 108 HHS were selected for the household survey. The format of Household Survey Questionnaire has been attached in Appendix I.

3.5.2. Focus Group Discussions (FGD)

Focus Group Discussions (FGD) was used as a tool of qualitative data collection to obtain qualitative insights from selected farmers. Problems of farmers were understood and solution to such problems were tried to figured out based on focus group discussion guidelines. 8 participants were conducted FGD. The format of FGD guidelines has been attached in Appendix II.

3.5.3. Field Observation

To observe and understand the marketing practices and behaviours in real world settings field observation was done. It assisted in understanding the aspects of farm activities to know about weighing machine and measurement practices, harvesting, mobility and plantation, farm activities etc. in the study area. The observation checklist has been attached in Appendix III.

3.6. Data Analysis and Presentation

The collected primary data was classified, tabulated and interpreted according to the requirement. Simple statistical tools were used for analyzing the quantitative data and the qualitative data has been described, explained and logically analyzed. SPSS software was used for the data analysis.

3.7. Ethical Consideration

Before any data was collected, I, as the researcher, made sure that every participant is fully informed about the goals and procedures of the study and I got their agreement. I anonymized their responses and stored data securely to ensure confidentiality. Participation was entirely optional, and withdrawal was possible at any moment. I followed local customs, was culturally aware, and made sure research participants didn't suffer any injury or suffering.

CHAPTER – IV

PRESENTATION AND INTERPRETATION OF FIELD DATA

All the raw data collected from the field were edited, coded, classified and organized to develop in the presentable form. The organized data has been presented in many forms like table, charts, figures and diagrams. The whole chapter has been organized into four sections as:

4.1. Socio-economic profile of the respondents

4.2. Status of agriculture production

4.3. Market structure and marketing channels

4.4. Challenges and prospects of vegetable marketing

4.1. Socio-Economic Profile of the Respondents

The socio-economic profile of respondents is necessary in understanding their role in marketing of vegetable products in Nepal. Factors like age, sex, marital status, religion, ethnicity and education level etc. influence their market participation, pricing strategies, and adoption of innovations, shaping effective marketing strategies.

4.1.1. Age structure

The age structure shows the number of people who are of different age groups, affecting labour availability and socio-economic activities like vegetable farming. Table 4.1 shows the age structure of respondents.

Table 4.1: Age of the Respondents

Age groups(years)	Frequency	Percentage
15-30	12	11.1
30-45	59	54.6
45-60	24	22.2
60+	13	12
Total	**108**	**100**

Source: Field Survey,2024

Table 4.1 shows that among the four-age groups, 54.6 percent of the respondents belong to the age group 30-45, 22.2 percent to the age group 45-60, 12 percent to the 60+, whereas 11.1 percent of the respondents came to the age group 15-30.

The majority of respondents (54.6%) fall in the 30-45 age group suggesting this age group is the most active or has strong involvement in the socio-economic activity under this study, such as vegetable farming. A smaller percentage (11.1%) of younger individuals and older individuals(60+years) has low participation possibly due to other interests or physical constraints. The middle age groups (30-60) collectively make up 76.8% of the total respondents which indicates there is a very crucial role in labor availability for vegetable farming.

4.1.2. Sex Structure

The sex structure was studied to know about the number of male and female respondents of the study area along with the sex ratio. The table below shows the sex structure reported.

Table 4.2: Sex of the Respondents

Sex group	Frequency	Percent
Male	57	52.8
Female	51	47.2
Total	**108**	**100.0**

Source: Field Survey,2024

Table 4.2 shows that 52.8 percent of the sex group is male and 47.2 percent of the sex group is female. The sex ratio is approximately 111.76 males per 100 females.

According to the census 2021, the sex ratio of Nepal is 95.9 males per 100 females. But in the study area there is surprising sex ratio. This study suggests that men are more involved in farming and economic activities like vegetable farming which could influence marketing strategies. This ratio may affect the types of vegetables grown, consumed and sold in the area which is important for developing marketing strategies that fit the local context.

4.1.3. Marital Status

Marital status structure shows the marital status of the respondents in the study area. Table 4.3 shows the marital status reported.

Table 4.3: Marital status of the Respondents

Marital Status	Frequency	Percent
Unmarried	5	4.6
Married	95	88.0
Widow	8	7.4
Total	**108**	**100**

Source: Field Survey,2024

Table 4.3 shows that 88 percent are married, 4.6 percent of the respondents are unmarried whereas 8 percent of the respondents are widow.

It shows that marriage is highly valued in the community. Most vegetable farming and decisions about marketing are done by married couples, with both partners involved in the work. The 8% widowed population are managing farms alone, so marketing strategies could focus on supporting them with specific resources or training. The small percentage of unmarried people, likely young adults, do not have as much control over farming decisions but still contribute to family work.

4.1.4. Religious Structure

Religious structure is studied to know the religion followed by the respondents of the study area. Table below shows the religion status of the respondents.

Table 4.4: Religion of the Respondents

Religion	Frequency	Percent
Hindu	89	82.4
Buddhist	17	15.7
Christian	2	1.9
Total	**108**	**100.0**

Source: Field Survey,2024

Table 4.4 shows that 82.4 percent of the respondents are Hindu, 15.7 percent are Buddhist, and 1.9 percent of the respondents are Christian. Majority of people follow Hinduism. Buddhism is followed by Tamang and Gopali groups. Very few respondents were found following Christianity. No other religions were reported in the study area.

Understanding the religious structure helps to explain how culture and beliefs might affect the way people buy, sell or use vegetables in the community.

4.1.5. Ethnicity Structure

Ethnicity structure shows the caste/ ethnicity of the respondents of the study area. Table 4.5 show the ethnicity status reported.

Table 4.5: Ethnicity of the Respondents

Caste/ethnicity	Frequency	Percent
Brahmin	9	8.3
Chhetri	22	20.4
Janajati	63	58.3
Dalits	14	13.0
Total	**108**	**100.0**

Source: Field Survey,2024

Table 4.5 shows that 58.3 percent of the respondents of the study area are Janajati, 20.4 percent are Chhetri, 13 percent are Dalits, whereas 8.3 percent are Brahmin.

The study area is rich in cultural diversity with a predominant representation of the Tamang community, followed by Newars, including the Gopali subgroup, and Chhetris. There is small representation of Dalits along with Brahmins. This ethnic diversity plays a vital role in shaping the agricultural practices, social interactions and consumer behaviour within the community. Understanding this structure helps provide a deeper understanding of the local culture and how it affects vegetable farming in the study area.

4.1.6. Educational Status

Educational status was studied to know the education level of the respondents of the study area. Education plays a major role in agriculture practices. The information about the proper use of chemicals, fertilizers, the side effects, working mechanism etc. are known to the educated farmers. Table below shows the education level of the respondents.

Table 4.6: Education Level of the Respondents

Education level	Frequency	Percent
Illiterate	16	14.8
Primary	39	36.1
Lower secondary	32	29.6
Secondary	16	14.8
Higher secondary	5	4.6
Total	**108**	**100.0**

Source: Field Survey,2024

Table 4.6 shows that 36.1 percent of the respondents were found to have primary education, 29.6 percent lower secondary, 14.8 percent secondary level, 14.8 percent of the respondents were illiterate, whereas only 4.6 percent had completed their higher secondary education level.

This gives a clearer picture of community's ability to participate in vegetable farming and marketing. The illiterate population has to struggle with written information or modern farming techniques. Those with primary education may have basic skills but it is difficult for them to adopt more advanced farming techniques. The respondents with lower secondary to higher secondary education are better prepared to lead in farming, introduce new ideas and create formal marketing systems.

4.2. Status of Agriculture Production

This subheading shows the agriculture production status of the farmers of the study area. As vegetable production is the main source of income in the study area, but it faces problems like old farming methods, lack of irrigation, and market access. However, challenges like high costs, poor storage, and weak markets still affect their profits. The land holding status, the land for vegetable farming, types of vegetable grown, purpose of cultivation, etc. gives the status of agriculture production.

4.2.1. Land Holding Status

Land holding status shows the land possession and allocation of land for vegetable farming.

Table 4.7 below shows the land holding status of the respondents for vegetable farming.

Table 4.7: Land Holding Status

Land in Ropani	Frequency	Percent
below 3Ropani	3	2.8
4-6Ropani	35	32.4
7-9Ropani	23	21.3
10+Ropani	47	43.5
Total	**108**	**100.0**

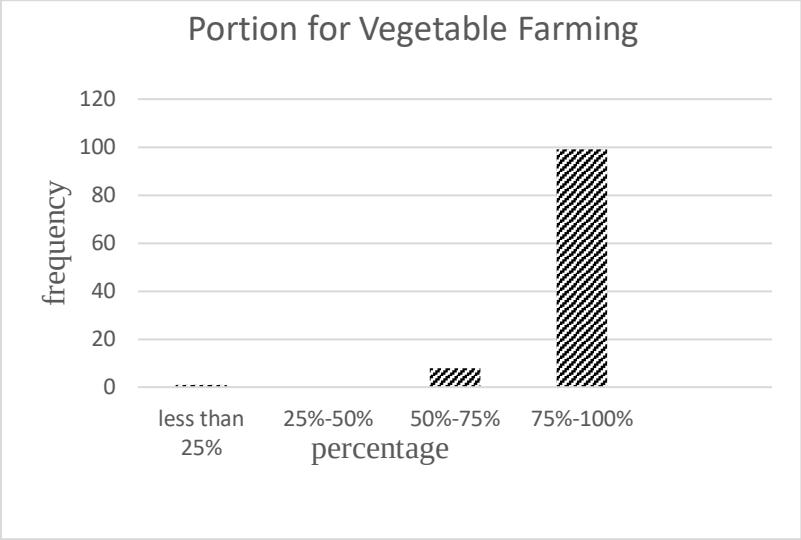
Source: Field Survey,2024

Table 4.7 shows that out of total 108 Households ,43.5 percent farmers have more than 10Ropani ,32.4 percent farmers have land between 4 to 6 Ropani, 21.3percent farmers have land between 7 to 9Ropani and 2.8 percent with below 3Ropani. Although, not all the land holdings are used for vegetable farming.

The data on land holdings shows how much land people have for farming. Only 2.8percent own less than 3 Ropani, indicating limited land resources. A larger group, 32.4percent has 4 to 6Ropani, which allows for some vegetable farming, while 21.3percent own 7 to 9Ropani, enough for moderate farming but not large-scale operations. The largest group, 43.5 percent, owns more than 10Ropani, which suggests they can engage in larger-scale vegetable production. This distribution shows that land availability influences the scale of farming and the ability to participate in the vegetable market.

Also, not all the farm are used for vegetable farming. The farm in the study area are used for crops cultivation, fruit cultivation, too. Specially wheat, maize, paddy, are grown along with Kiwi fruits. The portion of land possessed used for vegetable farming can be cleared by figure below:

Figure 2: Portion for Vegetable Farming



Source: Field Survey,2024

Figure 2 shows that 75%-100% of the farms are used for vegetable farming by majority of farmers. 50%-75% farms are used by 7 farmers while less than 25% farms is used by a farmer for vegetable farming. Some farmers use their land for Kiwi cultivation, some for crop cultivation like wheat, maize, etc.

4.2.2. Farm Registration

Farm registration helps farmers to get recognized, access market, keep records and aids in analyzing marketing strategies efficiently. Table below shows the registration of farms by respondents.

Table 4.8: Farm Registration

Farm registration	Frequency	Percent
Yes	3	2.8
No	105	97.2
Total	**108**	**100.0**

Source: Field Survey,2024

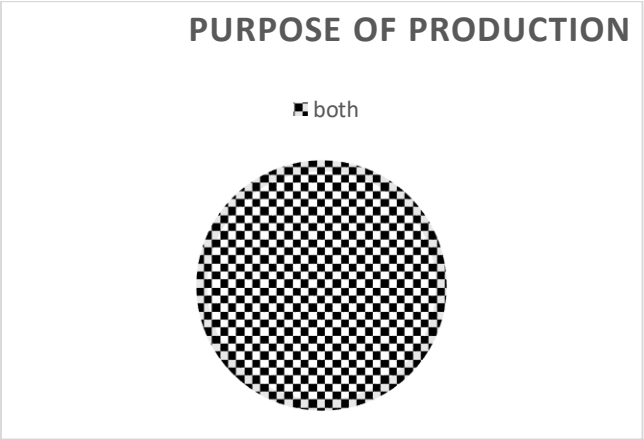
Table 4.8 shows that out of total 108 respondents 105 farmers have not registered their land while only 3 farmers have their farm registered. The registration of farm is not for vegetable farming, it is registered for other farming purposes like Kiwi farming.

The fact that only 3 farmers have their farm registered and 105 do not is due to a lack of awareness about the importance of registration or difficulty in completing the process. Farmers are not fully aware of the benefits, also the registration steps are complicated and farmers feel that it's not necessary for their small-scale farming. This lack of registration has limited their access to government support or programs that require it.

4.2.3. Purpose of Production

Mostly vegetable farming is done for self-consumption purpose. If the production is more than consumption, then it will be helpful to make money. The vegetables can be sold in market. Figure below shows the reason of cultivation in the study area.

Figure3: Purpose of Production



Source: Field Survey,2024

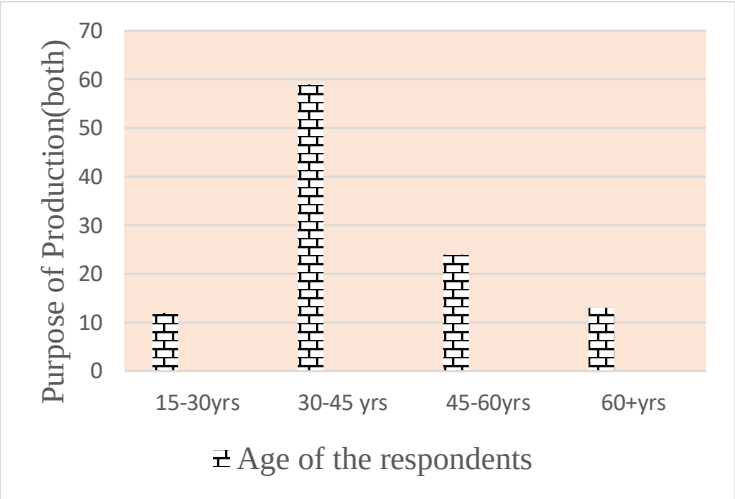
Figure 3 shows that in the study area the vegetable is grown for both self-consumption as well as selling purpose. There are mainly two purposes for vegetable cultivation in the field of study. Farmers cultivate vegetables to sell in the market as well as for their own personal consumption. This implies that growing vegetables is both a necessary component of their daily food and a way for them to support themselves by selling the extra products.

4.2.4. Influence of the Age of the Respondents on the Purpose of Production

Age plays an important role in determining the purpose of agricultural production. Younger farmers may focus on commercial farming for income, while older farmers often prioritize family consumption. Experience, risk-taking ability, and access to resources also vary with age, influencing decisions on whether to grow vegetables for market sales or household needs. This

can be better understood from the bar chart of influence of the age of the respondents on the purpose of cultivation.

Figure 4: influence of the age of respondents on the purpose of cultivation



Source: Field Survey,2024

Figure above shows that most vegetable farmers i.e. 54.6 percent farmers are between (30-45) years. The next largest group is (45-60) years i.e. 22.2 percent, followed by those over 60 years with 12 percent, and the youngest group (15-30) years with 11.1 percent is the smallest.

This suggests that most active farming respondents are in their prime working years. Younger respondents may not be as involved in farming, possibly because they move away for education or jobs, while older people may reduce their farming activities due to health and physical challenges. The more the involvement of active population the more the benefit from the vegetable production.

4.2.5. Types of Vegetable Production

Different types of vegetables are grown in Tistung and Palung. The vegetables grown in the study area are potatoes, tomatoes, cabbage, cauliflower, carrots, spinach, peas and spices. The table below shows the types of vegetables grown in the study area.

Table 4.9: Types of Vegetables Grown

Types of Vegetable	Frequency	Percent
Tomato	108	100.0%
Potato	107	99.1%
Cabbage	108	100.0%
Cauliflower	106	98.1%
Carrots	108	100.0%
Spinach	108	100.0%
Peas	108	100.0%
Akabare	100	92.6%

Source: Field Survey,2024

Table 4.9 shows that every household grow almost same vegetables in the study area. This is due to the high demand, making it as a profitable choice for farmers. This is also because of the traditional crop which has been passed down through generations. Limited access to different seeds, knowledge, or resources might also play a role in this choice. By growing the same crop, farmers can reduce risks related to market changes or uncertain weather.

4.2.6. Farm Relating Expenses

There can be farm relating expenses for vegetable farming like seed and seedlings, fertilizers and labour, wage, etc. Table below shows the farm relating expenses for vegetable farming.

Table 4.10: Farm Relating Expenses

Farm Relating Expenses	Frequency	Percent
Seed and seedling	32	29.6
Fertilizer and pesticides	46	42.6
Irrigations and water	21	19.4
Labour and wages	9	8.3
Total	**108**	**100.0**

Source: Field Survey,2024

Table 4.10 shows that 42.6 percent of the farm relating expenses are on fertilizer and pesticides, 29.6 percent expenses on seed and seedling, 19.4 percent on irrigations and water, whereas 8.3 percent on labour and wages. The farmers claim there is no proper supply of fertilizers on time and they don't know pest control techniques which are often costly. The seeds and seedlings are often of high cost and low quality. Farmers face problems in irrigations as well. Labour shortage often tends to high wage to hired farmers.

4.2.7. Production Expenses and Income from Vegetable Farming

Vegetable farming is the major source of income in the study area. Majority of people are engaged in vegetable farming as a source of employment. The production expenses and amount from vegetable farming can be cleared by the table below.

Table 4.11: Production expenses and income

Annual expenses from vegetable production	Annual income from vegetable farming			Total
	less than 1 lakh	1lakh-2lakh	more than 2 lakhs	
less than Rs 50000	22	20	0	42
50000-100000	0	8	1	9
100000-150000	0	50	4	54
200000+	0	1	2	3
Total	**22**	**79**	**7**	**108**

Source: Field Survey,2024

Table 4.11 shows that out of total 108 respondents, 79 respondents have annual income between 1lakh to 2 lakhs, 22 respondents have annual income less than one lakh, whereas 7 respondents have annual income more than 2 lakhs.

The data shows that most farmers have moderate incomes, which seems to represent the typical financial situation in the area. A small number of farmers earn higher incomes, suggesting that some are more successful than others. This difference in income could be due to factors like the size of their farms, how they manage their crops, and their access to markets.

4.2.8. Decision of Cultivation

Many factors are responsible for the cultivation purpose. The decision might be based on availability of seeds and inputs, based on family consumption needs, based on climate conditions and so on.

Table 4.12 shows the decision of cultivation in the study area.

Table 4.12: Decision of Cultivation

Decision on vegetable cultivation	Frequency	Percent
Based on availability of seeds and inputs	9	8.3
Based on climate and soil condition	47	43.5
Based on family consumption needs	22	20.4
Based on advice from agricultural experts	30	27.8
Total	**108**	**100.0**

Source: Field Survey,2024

Table 4.12 shows that 47 households decide vegetable cultivation based on climate and soil condition, 30 households based on advice from agricultural experts, 22 households based on family consumption needs, whereas 9 household based on availability of seeds and inputs.

In the study area, farmers make decisions about vegetable farming based on several factors. Only 8.3% of farmers choose their crops based on the availability of seeds and farming inputs, suggesting that this is not a big issue for most of them. A larger number, 43.5%, base their choices on climate and soil conditions, showing that these environmental factors are very important in deciding which vegetables to grow. About 20.4% of farmers grow vegetables

mainly for their family's consumption, indicating that self-sufficiency and food security are key concerns. Lastly, 27.8% of farmers rely on advice from agricultural experts, meaning that expert guidance plays a significant role in their farming decisions. Together, these factors show that farmers consider a mix of environmental, personal, and expert influences when making decisions about their crops.

4.2.9. Influence of Educational status on decision of cultivation

The cross tabulation between the educational status of the respondents and their purpose of production gives the clearer insight into the educational status of individuals involved in vegetable farming.

Table 4.13: Influence of Educational Status on Decision of Cultivation

Educational status of the respondents	Decision on vegetable cultivation				Total
	Based on availability of seeds and inputs	Based on climate and soil condition	Based on family consumption needs	Based on advice from agricultural experts	
Illiterate	0	11	3	2	16
Primary	4	21	10	4	39
Lower secondary	0	8	3	21	32
Secondary	3	5	5	3	16
Higher secondary	2	2	1	0	5
Total	**9**	**47**	**22**	**30**	**108**

Source: Field Survey,2024

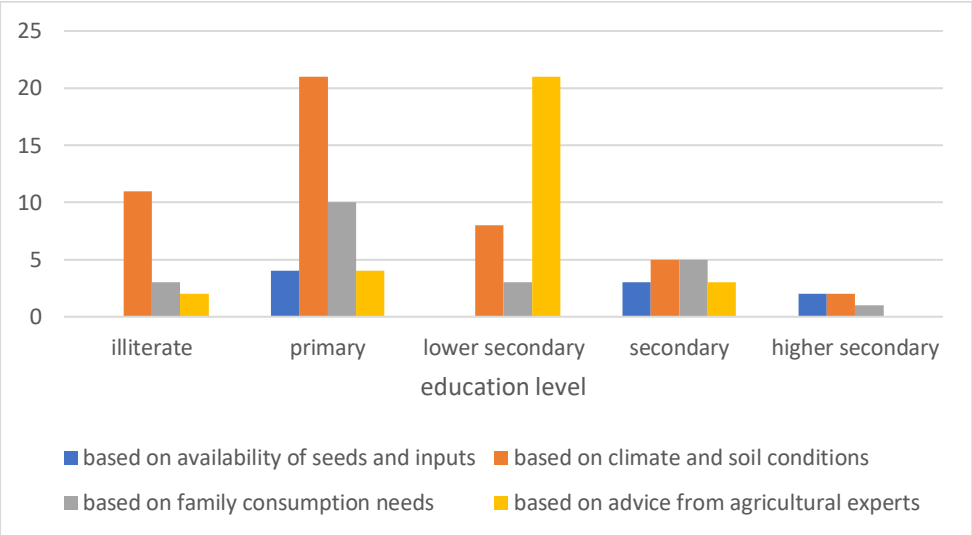
Table 4.13 above gives the clearer image of influence of educational status of respondents on decision on vegetable cultivation. The majority 43.5 percent farmers make decisions based on climate and soil conditions, with the highest numbers being from primary and illiterate respondents. This suggests that those with lower education levels rely more on natural conditions for farming decisions. The second most common factor is advice from agricultural experts, influencing 27.8 percent respondents, mainly from the lower secondary level. This indicates that those with some formal educations are more likely to seek expert guidance, while illiterate farmers depend less on such advice. Family consumption needs influence 20.4 percent

respondents, primarily from primary and illiterate groups, highlighting that food security is a key factor for those with lower education. The least influential factor is the availability of seeds and inputs, affecting only 8.3 percent respondents, with the highest numbers from primary and secondary levels, showing that access to farming resources plays a relatively minor role in decision-making.

Overall, the findings suggest that education significantly shapes farming decisions, with less-educated farmers relying on natural conditions and personal needs, while those with more education are more likely to seek expert advice and consider other factors.

This can be better understood from the bar chart.

Figure 5: Influence of Educational Status on Decision of Cultivation



Source: Field Survey,2024

The bar chart illustrates the influence of education status on and the decisions of vegetable cultivation. It shows that respondents with primary education rely the most on climate and soil conditions, followed by those with lower secondary education. Illiterate respondents also consider climate and soil conditions as a key factor, but to a lesser extent. Family consumption needs play a significant role among primary and illiterate respondents, while secondary and higher secondary respondents are less influenced by this factor. Advice from agricultural experts is mostly followed by lower secondary respondents, while higher secondary and illiterate respondents rarely seek expert guidance. The least considered factor is the availability of seeds and inputs, which has a lower influence across all education levels. Overall, the chart highlights that those with lower education levels rely more on natural conditions and household needs, while those with some educations are more likely to seek expert advice.

4.2.10. Influence of Ethnicity on Decision of Cultivation

Ethnicity plays a significant role in decision making for vegetable cultivation. Cultural practices, traditional knowledge and access to resources vary among different ethnic groups. In Nepal, farming communities have diverse backgrounds, influencing their preferences,

techniques, and decision-making processes. Some ethnic groups rely more on indigenous farming practices and natural conditions, while others seek expert advice and modern agricultural methods. Socioeconomic factors, land ownership patterns, and access to agricultural services also differ across ethnicities, shaping how farmers decide what and how to cultivate. Understanding these variations can help in designing targeted agricultural policies and support programs for different communities. This can be better understood from the cross tabulation between the influence of ethnicity on decision of cultivations.

Table 4.14: Influence of Ethnicity on Decision of Cultivation

Ethnicity	Decision on vegetable cultivation				Total
	Based on availability of seeds and inputs	Based on climate and soil condition	Based on family consumption needs	Based on advice from agricultural experts	
Brahmin	2	2	5	0	9
Chhetri	1	9	7	5	22
Janajati	6	23	10	24	63
Dalit	0	13	0	1	14
Total	**9**	**47**	**22**	**30**	**108**

Source: Field Survey,2024

The table 4.14 presents the influence of ethnicity on decision cultivation. The majority of respondents i.e. 43.52 percent make decisions based on climate and soil conditions, with Janajati farmers being the most influenced by this factor, followed by Chhetri and Dalit farmers. This suggests that Janajati and Dalit farmers rely more on natural conditions when deciding to cultivate vegetables. The second most common factor is advice from agricultural experts, influencing 27.78 percent respondents, with Janajati farmers being the most likely to seek expert advice, whereas Brahmin and Dalit farmers rely the least on experts. Family consumption needs influence 20.37 percent respondents, with the highest numbers from Janajati and Chhetri, indicating that food security plays a role in their farming decisions. The least influential factor is the availability of seeds and inputs, affecting only 8.33 percent respondents, with Janajati being the most affected, followed by Brahmin and Chhetri.

Overall, the findings suggest that Janajati farmers are more likely to seek expert advice and consider climate and soil conditions, while Dalit farmers rely heavily on natural conditions. Understanding these trends can help policymakers and agricultural programs develop targeted strategies to improve farming decisions across different ethnic groups.

4.2.11. Additional Farmers and Their Wages

For the vegetable farming not every time family members are sufficient. Additional numbers of farmers are required during peak seasons. Table below shows the number of additional farmers required.

Table 4.15: Additional Farmers Required

Additional farmers required	Frequency	Percent
10-20	84	77.8
20-30	9	8.3
30-40	3	2.8
more than 40	7	6.5
Total	**103**	**95.4**

Source: Field Survey,2024

Table 4.13 shows that 84 respondents required 10-20 additional workers, 9 households required 20-30 farmers, 7 households required more than 40 additional farmers. The additional farmers are given certain wages for vegetable farming. The table below better gives the clear information about wages for male and female.

Table 4.16: Wage Distribution of Male and Female

Respondents	Wages in Tistung	Wages in Palung
Male	Rs.1200	Rs.800
Female	Rs.700	Rs.700

Source: Field Survey,2024

From table 4.14 it is found that in Tistung, the wage for male is Rs.1200 while for female is Rs.700. It is because man does difficult and more tools and equipment related works while woman do simple and easier works. In Palung the wage for male is Rs.800 and that for woman is Rs.700 for same reason as Tistung.

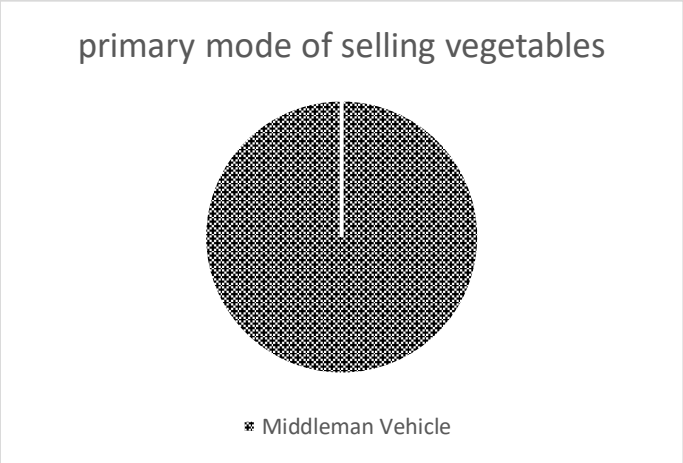
4.3. Market Structure and Marketing Channels

Market structure and marketing channels show how products are bought and sold, affecting prices, competition, and how farmers connect with buyers in vegetable farming.

4.3.1. Primary Mode of Selling Vegetable

The primary mode of selling vegetables refers to how farmers deliver their vegetable products to buyers, such as through local markets, middlemen, cooperatives, or direct sales to consumers. The figure below shows the primary mode of selling vegetables.

Figure 6: Primary Mode of Selling Vegetables



Source: Field Survey,2024

Figure 3 shows that the primary mode of selling vegetables is middleman vehicle for all the 108Households. The middleman comes with their own vehicle to collect the vegetable from door of the respondents. The respondents don't need to worry about other modes of selling vegetables. This system saves farmers from the trouble of arranging transportation. However, it also shows that middlemen control market access, which could reduce farmers' bargaining power or profits.

4.3.2. Distance of selling Vegetables

Distance plays a crucial role in selling the vegetables produced in any area. Figure below shows the distance of selling vegetable.

Figure 7: Distance of Selling Vegetables

Source: Field Survey,2024

Figure 5 shows that since the vegetables are picked by middleman from door of respondents there is only a distance of within 1 km. Respondents don't face any challenges in transporting vegetables to markets. The farmers sell all their vegetable products to the middleman. As whole village yield the same vegetables, there is no need to sell locally. The vegetables are sold 100% externally.

4.3.3. Challenges Faced in Transporting Vegetables

There can be various challenges in transporting the vegetable products by the respondents. The field study shows that all the farmers have no problem in transportation of vegetables. The middleman come with their own vehicle so it is easier for all the respondents.

4.3.4. Marketing Information and Access

The marketing information and access shows the way through which farmers get the information about market prices for their vegetable products.

Table 4.14 shows the frequency of receiving updated market information by farmers.

Table 4.17: Frequency to Updated Market Information

Frequency to Updated Market Information	Frequency	Percent
weekly	1	.9
occasionally	47	43.5
never	60	55.6
Total	**108**	**100.0**

Source: Field Survey,2024

Table 4.15 shows that 55.6 percent respondents never get to receive the updated market information, 43.5 percent get occasionally while 0.9 percent get the updated market information weekly.

4.4. Challenges and Prospects of Vegetable Marketing

In a country like Nepal vegetable farming is good source for economic development. There are several challenges and prospects of vegetable marketing.

4.4.1. Challenges of Vegetable Marketing

Several challenges are faced by farmers in the study area. Challenges may arise at the time of production as well as at the time of marketing. Some of them are given below.

4.4.1.1. Seeds and Seedlings

The field data shows that there is no timely supplied seeds and seedlings for production. The seeds they get from local suppliers are often low quality, good ones are very expensive. Last year one of the respondents lost half of his tomato crops because the seeds didn't germinate well. The respondents are likely to suffer a huge loss due to the seed condition. Also, they have to wait for several weeks to get the seed. The seeds are of very expensive price. Sometimes their production cost exceeds the selling costs.

4.4.1.2. Pest Control Solutions

From the study it is found that there is no adequate knowledge and the respondents don't have access to pest control solutions. There are different sorts of pests like Tuta, Gathe kira, etc.

They loss their high yield of vegetables from such pests and they can't do anything to control such pests. Also, there is no timely supplied fertilizers. Due to lack of pest control solution, they use excessive amount of fertilizer though it gives profit for short time. But in the long run it affects the land ability to yield crops.

4.4.1.3. Dependence on Middleman

The study shows that the price determination is fully done by middleman/traders in the study area. The farmers fully depend upon the middleman for everything. The farmers are totally unaware of the profit taken by middleman, even if they get to know they cannot do anything. They cannot sell their vegetables locally as all the respondents grow same vegetables. They are forced to rely on middleman. The farmers in the study area fully depend upon middleman for selling vegetables. Middleman go to their farms to collect vegetables, and offer very low prices to the farmers. They sell cauliflower for Rs. 20 per kg to them but in Kathmandu, it's sold for Rs. 150 per kg. During the peak seasons the price of vegetables falls so low that the respondents don't even recover their investments. There's no fixed rate for vegetables. Prices change daily and they never know what to expect. There is uniformity in vegetable farming everyone grows the same vegetables like potato, cabbage, etc. which leads to oversupply and low prices in the local market.

4.4.1.4. Weather

Due to unpredictable weather the farmers suffer a heavy loss. The respondents claim that they don't have any ideas of adaptation techniques. There is no proper irrigation facility in the study area. The farmers are forced to depend on seasonal water supply which dries in winter. They cannot afford advanced irrigation systems like drip irrigation. The unpredictable weather hampered their crops, they were forced to pick vegetable before ripening. Sometimes the weather is responsible to destroy their ready to sell vegetables in the market. The perishable vegetables are often destroyed due to weather conditions.

4.4.1.5. Difficulty in Hiring Labour

During peak seasons the farmers face problem in finding the labours. As there is uniformity in vegetable production in the study area. There is usually a labour shortage. Also the respondents

claim during the harvesting season they don't have enough workers. Many youths from that area are migrating abroad, leaving them struggling to manage their fields. Also, some parents live outside the area for education of their children. Likewise, some respondents family members move out of their hometown in search of better opportunities. Which leaves in difficulty in labour availability and are forced to hire other labourers which cost a huge amount of money.

4.4.1.6. Infrastructures

The farmers cannot afford to transport vegetables to the city areas by themselves, they have no choice but to sell to middleman knowing it reduces their profits. It is very hard to them to transport vegetables due to poor road conditions. The transportation costs are so high that minimizes their profits. Also, there is no cold storage in the study area Palung. Farmers are forced to sell their produce in low cost due to lack of cold storage. There is a cold storage at Tistung but it is of low storage capacity and of no use to farmers.

4.4.1.7. Tools and Machinery

From the study it is found that the farmers use traditional tools and machineries for farming purpose. Only few farmers know about modern tools and machinery. Modern tools and machinery need to be operated by skilled persons only and farmers don't know how to operate also they are so expensive that farmers cannot afford such tools and machinery. They have to rely on traditional *kuto, kodalo*. Though some farmers have the access to tractors and modern equipment but they need a skilled person for operation which is often costly and people have to wait for their turn as whole area uses the same time to cultivate the vegetables.

4.4.2. Prospects of Vegetable Farming

The favourable climate and market access has helped Tistung and Palung to make mor profit from vegetable farming. The vegetable farming requires effective marketing strategies to boost income and support the area's economic growth. Some prospects of vegetable farming are given below:

4.4.2.1. Source of Income

Farmers shared that growing vegetables is a good way to earn money. Many said they earn more from vegetables than from other crops, which has improved their living standards. As Tistung and Palung are a hub of vegetable farming, vegetables are grown throughout the year. This provides them employment opportunity. The earning from vegetable farming is also satisfactory. They can afford a decent life from their earning. Their quality of life is also improved through vegetable farming.

4.4.2.2. Market Opportunities

The participants agreed that being close to cities like Kathmandu is a big advantage. There is high demand for fresh vegetables in urban areas. However, they also mentioned the need for better roads and transport to sell their produce on time. One educated farmer mentioned of using some app or digital marketplace through which they could sell their vegetables directly to consumers, in return they don't need middleman.

4.4.2.3. Good Climate and Soil

The group of farmers expressed that the favourable soil and climate condition has proved boon to them in growing vegetables throughout the year. The favourable climate condition and fertile soil has resulted them to grow many different types of vegetables, which are always in high demand. Off seasons vegetables are mostly grown there which help in making more profit.

4.4.2.4. Use of Modern Tools

Farmers talked about using tools like greenhouses and drip irrigation to increase production. One farmer mentioned that with greenhouse they can produce tomatoes even in winter and earn huge amount of money. They said these tools help them grow more vegetables and improve quality, but they need training and support to use them effectively. With the proper training to farmers, the study area is more likely to produce tonnes of vegetable. That can be able to export to other countries as well.

4.4.2.5. Government Support

Some farmers mentioned that they have not received any government help. They arenot provided any trainings and subsidies till date. The farming is done based on their family practices. Also, there are no availability of agriculture experts which leaves them in confusion at the time of pests and other problems. If government provides them some trainings and

subsidies this will encourage the farmers to grow more vegetables. The farmers will learn adaptability techniques to unpredictable weather, pest control solutions from agricultural experts which will help in boosting the yield from vegetable farming.

4.4.2.6. Preference to Customer Choices

The participants noticed that at the present day the need of freshly grown vegetables is increased. The demand for fresh and organic vegetables has started to grow everywhere. Also, the vegetables are the source of essential nutrients to the human body. The farmers believe that it can be proven a golden opportunity if they focus on quality of their vegetable products. If there are organic certifications for their produces, they can be highly benefited with higher prices than it is now.

4.4.2.7. Chances for Export

Some experienced farmers talked about the possibility of selling vegetables to other countries. However, they mentioned challenges like meeting quality standards and transporting produce safely. With the proper branding and providing organic certifications the produced organic vegetables could be exported to neighbouring countries which would help in boosting national economy.

4.4.2.8. Cold Storage Facilities

The perishable vegetables easily rot, if not supplied in time, it has left them in huge loss. With the access to cold storage, they can store the vegetables and can sell for long duration. There is sometimes production more than necessary. the cold storage could benefit at that time. It will help in reducing wastage of vegetables and the demand will be high at such times and farmers can sell their produces at higher price. The farmers were claiming to have access to cold storage could help them in proper management of supplying vegetables which will maximize the profit.

4.4.2.9. Benefits for the Environment

Organic farming practices and crop rotation protects the soil. It could be of concern to attract the costumers. Environment friendly vegetable farming practices will help boost the vegetable farming in the study area. The farmers believe that promotion of municipality as an eco-friendly farming zone can be a better strategy. Other vegetable farming regions can copy the farming

practices from Tistung and Palung. Sustainable farming method if adopted will give better yield preserving the nature. This can be beneficial to both farmers and environment.

4.4.3. Satisfaction of the Farmers from the Income from Vegetable Farming

The satisfaction of the farmer plays the vital role in any production. Satisfaction drives farmers to decide whether to cultivate the vegetable products or not. Table 4.15 show the satisfaction level of farmers from earning from vegetable farming.

Table 4.18: Satisfaction Level of the Farmers

Satisfaction	Frequency	Percent
highly satisfied	32	29.6
satisfied	55	50.9
neutral	21	19.4
Total	**108**	**100.0**

Source: Field Survey,2024

The table 4.16 shows the satisfaction levels of 108 farmers regarding their farming activities. Among them, 29.6% (32 farmers) reported being highly satisfied, while the majority, 50.9% (55 farmers), expressed satisfaction. Meanwhile, 19.4% (21 farmers) remained neutral, neither satisfied nor dissatisfied. This indicates that most farmers (over 80%) have a positive outlook on their farming practices. However, the neutral responses suggest that some farmers may have mixed feelings or face certain challenges that need to be addressed to improve their overall satisfaction.

CHAPTER -V

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1. Summary

Vegetable farming serves as a primary source of livelihood for the farmers in Thaha municipality. Vegetable farming in Thaha Municipality offers potential benefits but also faces difficulties during both the production and marketing phases. The marketing strategy of vegetable products in Nepal seemed important to study. The general objective of the study is to study the marketing strategy of vegetable products in Nepal (a file study of Thaha Municipality). Also, the specific objectives of the research are to analyze the agricultural production status of the farmers, to assess market structure and marketing channels and to explore the challenges and prospects of marketing of vegetable products.

To obtain an understanding of vegetable product marketing strategies in Nepal, this study used a descriptive research technique and quantitative dominant mixed methods. Household survey was conducted to collect quantitative data from the study area, whereas for the qualitative data focused group discussions and observation method was employed. For the study, two wards of Thaha municipality were chosen as sample. The data was analyzed and presented by combining the results from both qualitative and quantitative methods.

Among the total 108households, 54.6 percent respondents were between age group 30-45years. The sex ratio was found 111.76 males per 100 females. 88 percent of the households were married. Only three religion was found with 82.4 percent Hindu. Mostly janajati ethnicity was found with the predominant Tamang followed by Newars including the subgroup Gopali and Chettri. There was small representation of Dalits along with Brahmins. 36.1 percent respondents were found to have primary level of education. Only 5 percent of population had higher secondary education level completed.

43.5 percent farmers had more than 10Ropanis land, 32.4 percent farmers had land between 4 to 6 Ropani, 21.3 farmers had land between 7 to 9Ropani and 2.8 percent farmers had land below 3Ropani. Not all the land possessed was used for vegetable farming. Some farmers had used farm for Kiwi cultivation, some for-crop cultivation like wheat, maize, etc. Out of 108 respondents only 2.8 percent farmers had their farm registered. The purpose of vegetable farming was for both self-consumption and selling purpose. Every household grew almost same

vegetables in the study area. Tomatoes, potatoes, cabbage, cauliflower, spinach, *akabare*, peas etc were the mostly cultivated vegetables. Mostly the farm relating expenses was for fertilizers and pesticides, seeds and seedlings. People used vegetable farming as a primary source of employment in the study area. 22 farmers had annual income less than 1 lakh while only 7 farmers had annual income more than 2 lakhs. The decision of vegetable farming was mostly based on climate and soil condition. During peak seasons only the family were not sufficient so additional labourers are hired for vegetable farming in the study area.

The primary mode of selling vegetables is middleman vehicle for all the total 108households. Middleman controlled the market access. The study showed that the farmers had no challenge in transporting vegetable as the vehicle of middleman arrived at the door of farmers. The study showed that 55.6 percent farmers never get the updated market information. The price of the vegetable was fully determined by the middleman.

The major challenges in the study area were the untimely supply of fertilizers and pesticides. The farmers got often the low-quality seeds. Farmers were unaware of pest control solutions. Due to unpredictable weather farmers had to bear a huge loss every year. The vegetable farming is mainly done by the family members During peak seasons due to the uniformity in same vegetable, hiring the labourer was often difficult. Middleman offered low price to their vegetables as there is no fixation of price for vegetable products, prices changed daily. The farmers still used traditional tools and machineries. There was no cold storage in Palung. But there was one in Tistung but it was with very less storage capacity. Not only challenges but there are some prospects of vegetable farming in the study areas like the farmers had a good income through vegetable farming. The study shows that 50.9 percent of the respondents were satisfied from their earning from vegetable farming. 29.6 percent were highly satisfied. Only 19.4 percent gave neutral level of satisfaction. This shows that being near to cities like Kathmandu farmers agreed it was a big advantage. The climate and soil condition were perfect for growing vegetables. The practices like organic farming and crop rotation are beneficial to environment as well.

5.2. Conclusion

Thaha municipality is well known for vegetable production all over the Nepal due to favourable climate condition and easy market access to the cities like Kathmandu. Currently, the major source of income for the majority of farmers in the study area is vegetable farming. The study

found that farmers are satisfied with the earnings from vegetable farming. Farmers in the area are shifting trend in vegetable production from subsistence based to commercial based because of increasing demand, competition among producers and high income. Due to dense existence of middle man at their doorsteps, almost all farmers sell their products through the channel of middleman. They sell their products based on price fixation of middleman which reflects that there is buyers' market not producers' market. The dependence on middleman for sale, uncertainty of price of vegetables, having no scientific idea in using pesticides, lack of cold storage, the supply of low-quality seeds, and less attention of government support are the key challenges of production, and distribution. Furthermore, off season vegetable production, good soil property, expanding market demand, high returns in income and easy access to transportation are some of the major prospects of the study area in vegetable production.

5.3. Recommendations

Vegetable farming has played a vital role in improving living standards of the people in the study area. Further improvements need to be done for the better marketing strategy of the vegetable products. As this research is done for the partial fulfillment of the researcher' s master's degree it only has micro level implication. Some of the recommendations needs to be implemented.

The instalment of drip or sprinkler irrigation systems can help save water and ensure crops get the right amount of water to grow properly. Using natural fertilizers like compost keeps the soil healthy and reduces the use of chemicals that are harmful in the long run. Planting high-quality seeds can lead to better harvests and reduce crop losses. Farmers can improve their skills by attending training on modern farming methods, pest control, and crop rotation. Easy access to markets allows farmers to sell their produce at fair prices and create value-added products like dried vegetables or pickles to earn more. Financial support, such as affordable loans or subsidies, helps farmers buy tools, seeds, and fertilizers. Staying informed about the weather allows farmers to plan planting and harvesting effectively. Joining local farmer groups helps them share knowledge, resources, and solve problems together. Improving roads and storage facilities reduces crop losses and makes transportation easier. Lastly, saving water through practices like rainwater harvesting and careful water management ensures farmers have enough water, even during dry periods.

Recommendation for Future Researcher:

This study covered a small area of Thaha municipality because of limited time and resources. Future researchers who have interest in the similar issues take a more area coverage to identify more issues and problems. The study fully based on the marketing strategy of vegetable products only, the future researcher can conduct the research on fruits and other crops too.

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Appendix-I

Household Survey Questionnaire

Date:

Dear respondent, Namaskar!

This research is going to be conducted by the researcher for her thesis of Humanities and Social Sciences. The importance of the study depends on your valuable answer. Please answer the questions honestly. Your response will be kept confidential according to the data protection regulation 2018 as well. For further information, you can contact the researcher **Sujata Rimal** (9840020562). Thanking you.

Name: Contact no.: Code

1.Household Information:

S.N.	**Age (year)**	**Sex**	**Religion**	**Marital Status**	**Literacy Status**
1					
2					
3					
4					
5					
6					

Age below 15 years=A
15-59 years=B
59+ years =C

Male=M
Female=F
Others =O

Hindu=H
Christian=C
Buddhist=B
Muslim=M
Others=O

Married=M
Unmarried=U
Divorced=D
Widow=W

Illiterate=I
If literate,
primary=P
L.Secondary=L
Secondary=S
H. Secondary=H

Socio-economic information of the respondents

S.N.	Questions	Responses	Remarks
1.	What is your age?	1. 15-30years 2. 30-45years 3. 45-60years 4. 60+years	
2.	What is your sex group?	1. Male 2. Female 3. others	
3.	What is your marital Status?	1. Unmarried 2. Married 3. Others	
4.	What is your religion?	1. Hindu 2. Buddhist 3. Islam 4. Christian 5. Others	
5.	What is your caste/ethnicity?	1.Brahmin 2.Chhetri 3.Janajati 4.Dalit 5.Others	
6.	What is your education level?	1) Illiterate 2) Literate a) Who can read and write b) Primary level c) Lower sec level	

		d) Secondary level e) Higher sec level f) H.S +level	
7.	Do you have land?	1.Yes 2.No	
8.	If yes how much land do you have?	Own land= Lease land=	
9.	What portion of this land is for vegetable farming?	1.Less than 25% 2.25%-50% 3.50%-75% 4.75%-100% 5.None	
10.	What are your major farm-relating expenses for vegetable farming?	1. Seed and seedling 2. Fertilizers and pesticides 3. Irrigations and water 4. Labor and wages 5. Tools and machinery 6. Transportations and marketing 7. Others (please specify)	

2.Agriculture Production Status:

1. Do you have your own farm registered?

i. yes

ii. no

2. For what purpose do you do vegetable farming?

i. for self-consumption?

ii. for sale

iii. for both

3.What types of vegetables you grow in what quantity(per annum)?

Vegetable types	Less than 100kg	100kg-500kg	500kg-1000kg	more than 1000kg	season of production
tomato					
potato					
Cabbage					
Cauliflower					
Carrots					
Spinach					
Others (please specify)					

S.N.	Questions	Response	Remarks
4.	How do you decide which vegetable to cultivate?	1.Based on availability of Seeds & inputs 2.Based on climate and soil condition	

<table>
<tr><td></td><td></td><td>3.Based on availability of seeds and inputs
4. Based on family consumption needs
5.Based on advice from agricultural experts
6. others (please specify)</td><td></td></tr>
<tr><td>5.</td><td>What is your annual expenses for vegetable production?</td><td>1.less than 50000
2. 50000-100000
3. 100000-150000
4.150000-200000
5. 200000+</td><td></td></tr>
<tr><td>6.</td><td>How many of your family ember are engaged in vegetable production?</td><td>=<table><tr><td>Full-time</td><td>Part-time</td></tr><tr><td></td><td></td></tr></table></td><td></td></tr>
<tr><td>7.</td><td>Are your family members sufficient for farming?</td><td>1.Yes
2.No</td><td></td></tr>
<tr><td>8.</td><td>If no how many additional farmers are required?</td><td>1.10-20
2.20-30
3.30-40
4.more than 40</td><td></td></tr>
<tr><td>9.</td><td>What is the wage per day for workers?</td><td><table><tr><td>male</td><td>female</td></tr><tr><td></td><td></td></tr></table></td><td></td></tr>
<tr><td>10.</td><td>What is your annual income from vegetable farming?</td><td>1.less than 100000
2. 100000-200000
3.more than 200000</td><td></td></tr>
</table>

3.Marketing Structures:

S.N.	Questions	Response	Remarks
1.	What is your primary mode of selling your vegetables?	1. Directly to consumers 2. To local markets 3. To wholesalers 4. To cooperatives, 5. others (please specify)	
2.	Do you face challenges in transporting vegetables to markets?	1. Yes 2. No	
3.	If yes, what type of challenges do you face?		
4.	How far is the market where you usually sell your vegetables?	1. Within 1km 2. 1-2km 3. More than 2km	
5.	What mode of transportation do you use for delivery of vegetables?	1. Personal vehicle 2. Hired vehicle 3. Public transports 4. Carry manually 5. Others (please specify)	
6.	What percentage of your vegetables do you sell locally and external markets?	1. 100%locally 2. 75%locally,25%externally 3. 50%locally,50%externally 4. 25%locally,75%externally 5. 100%externally	

4.Marketing information and access:

S.N.	Questions	Response	Remarks
1.	How do you get information about market price vegetable products?	1. Local market visits 2. co-operatives or farmers group	

		3. mobile apps or online platforms 4. middlemen/ traders 5. others (please specify)	
2.	How frequently do you receive updated market information?	1. Daily 2. Weekly 3. Occasionally 4. Never	
3.	Do you have access to formal markets (eg. Co-operatives organized vegetable markets)	1. yes 2. no	
4.	How is the price of your vegetable determined?	1. By market demand 2. Fixed by wholesalers/middlemen 3. Negotiated with buyers 4. Others (please specify)	
5.	Do you think the selling price covers your production cost?	1. Yes, with significant profit 2. Yes, but with minimal profit 3. No, it barely covers cost 4. No, I incur losses	
6.	What are the major challenges you face in vegetable production?	1.pests 2.diseases 3.weather 4.others (please specify)	
7.	What are the main challenges you face in marketing your	1. Low prices offered by buyers	

	vegetables?	2. Lack of market information 3. high transportation costs 4. difficulty in finding buyers 5. price fluctuations 6. others (please specify)	
8.	Have you explored selling your vegetables in other districts or regions?	1. Yes 2. No	
9.	Have you received any support from the government or NGOs in marketing?	1. Yes, if yes what type of agencies? 2. no	
10.	What improvements do you suggest for better marketing of your vegetables?		
11.	Are you satisfied with the income from vegetable farming?	1. Highly satisfied 2. Satisfied 3. Neutral 4. Dissatisfied 5. Highly dissatisfied	

Thank you for your kind cooperation!

Appendix-II

Focus Group Discussion Guidelines

1. What are the problems you face in?

- ❖ Production:
- ❖ Selling:
- ❖ Price:
- ❖ Facilities:
- ❖ Others:

2. What prospects do you see in vegetable farming?

1. volume of production:
2. Emergence of new market:

3. Off season production:

4. Extension of farm size:

5. Use of technology:

3. What can be done to improve the marketing of vegetables?

    i) What kind of support would you need from the government or local authorities to improve your marketing strategies?

    ii) How can farmers collaborate to strengthen their bargaining power and marketing efforts?

    iii) Would establishing a local cooperative or farmer's group help improve marketing practices? If yes, how?

    iv) How can better packaging or branding of local vegetables improve their sale?

    v) What role can education and training play in improving marketing strategies for vegetable producers?

    vi) What role do you think community-based organizations or NGOs can play in improving the marketing of vegetables?

    vii) How can better infrastructure, like cold storage or better roads, improve the vegetable marketing process?

    viii) Anything you would like to share or suggest?

Thank you everyone for your active participation. I'm very thankful for your valuable thoughts and opinions.

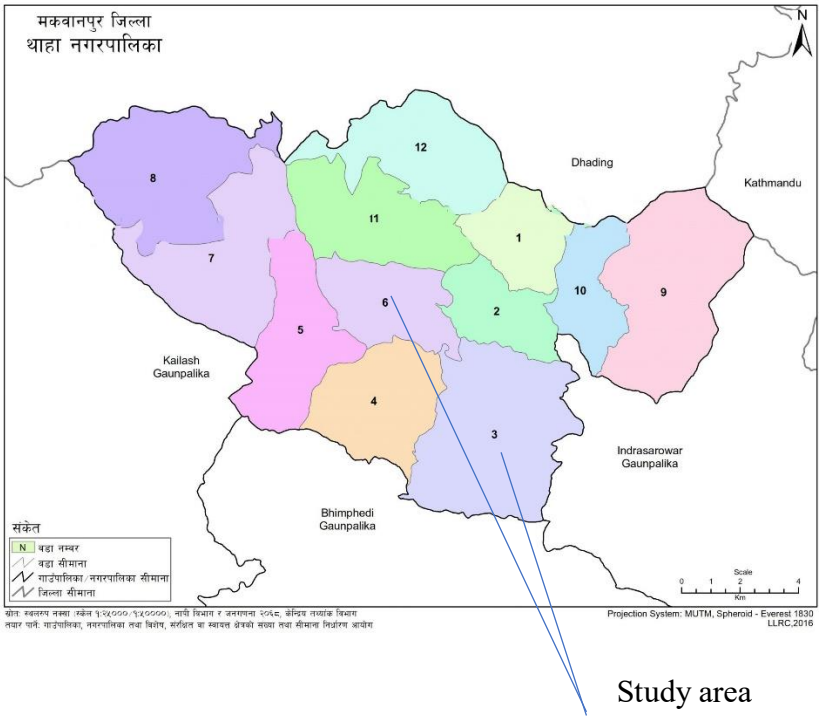
Appendix-III

Observation Checklist

Observation criteria	Observation	Remarks
Weight and measurement	Types of weight scales =digital =manual =traditional	
Market place characteristics	Location: =centered = Dispersed Cleanliness and hygiene =Good =Average =Bad Accessibility =Road =Pathways Vehicles =tactor =Tempo =cycles	
Storage	=Yes, =No	

Appendix-IV

Map of the Study Area



Study area

Appendix-V

Photo Gallery

Researcher at the study area

Researcher taking a survey

Researcher at the study area

Farmer ploughing the land for vegetable farming

Middleman vehicle to pick vegetables at the door of farmers.

FGD conducted by the Researcher

Researcher with a farmer

Researcher taking a survey

Researcher observing the farm