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Value Chain Analysis of Cucumber in Tanahun District, Nepal

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Abstract

A survey research was conducted in Tanahun district to assess the value chain analysis of cucumber. Total sample size of 70 farmers from two rural municipalities were selected by purposive selection method. To study the marketing aspect, 15 traders (wholesaler, retailer) were selected. Semi-structured interview schedule was administered for household survey for primary data and secondary data were collected through different journals, articles, related websites, DADO profile, weather stations etc. Different descriptive statistics were used for the analysis using Statistical Package for Social Sciences (SPSS) and MS-excel. The B/C ratio was 3.48 and human labor was the major cost among the total costs of cucumber cultivation. Market margin was NRs.32/kg and producer's share is 36% percent in the mostly used market channel. The gross revenue is NRs.10,86,917 per ha. and the farmer's gate price of cucumber is NRs18/kg and consumer's price is NRs.50/kg. in the most used market channel. Four types of marketing channel were found. Middlemen had major influence on price fixation. Majority of farmers (37.1%) were dissatisfied with the market price of cucumber. Almost all the farmers had not heard or done anything for value addition of cucumber. Low market price was major marketing problem faced by the producers. Despite the low productivity and market problem, farmers were still interested to grow cucumber. The study indicated cucumber farming could be highly profitable and export-oriented enterprise in Tanahun.

Keywords: survey; margin; price; profitable

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Introduction

Agriculture is the foundation of the Nepalese economy, generating employment opportunities to 66 percentages of the total population (MOF, 2017/18). Agriculture itself contributes 27.6 % in the national Gross Domestic Product of the country (MOF, 2017/18) Nepal has diversified agricultural sectors predominated by smallholder and marginal farmers. Farmers having the land holding below 1 ha. is 70.68 percentage and average land holding being 0.68 hectares (CBS, 2011). The unique agro-ecological zones favoured by altitudes, topography, and aspect within the

country offer an immense opportunity for growing different types of fruits, vegetables, flowers, spices and other plantation crops. (Thapa & Dhimal, 2017).

Horticulture remains one of the major sub-sectors of the agricultural sector with 16 % contribution in national AGDP (MOF, 2017/18). Vegetables farming also contributes more than 36 billion of value in the country (CBS, 2011) so vegetable farming is emerging as an important sub-component of horticulture in Nepal. Also due to increased demand of vegetables; areas of production as

well as commercial growers are increasing every year. Total land area under vegetable production in Nepal is 246392 ha with the production of 33,01,684 mt. (MOF, 2017/18). Among commercially important vegetables of Nepal, cabbage, cauliflower, cucumber, tomato, onion, and chili have been identified as some of the most promising value chains for increasing incomes of smallholder farmers through improved production and marketing (Ansab, 2011).

Cucumber (*Cucumis sativus* L) is among the economically important vegetables that have high influence on livelihood of smallholder farmers of Nepal. It is widely grown in terai, midhills and hills of Nepal from altitude of 200-1500 masl. The area, Production and productivity of cucumber in Nepal is 9396.80 ha, 159041.80 ton and 16.90 mt/ha respectively (MOAD, 2015/16).

Tanahun district is one of the major vegetables producing districts of Nepal lying in the hilly region of altitude at 425-1000 masl and area of 1546 sq.km The area, production and productivity of cucumber in Tanahun is 80 hectare, 700 mt and 8.8 mt/ha. (MOAD, 2015/16).

The main objective of this study was to assess the value chain of cucumber among the cucumber growers in Tanahun district of Nepal.

Research Methodology

The study was carried out in Aabukhaireni and Bandipur Rural Municipalities of Tanahun. The site was purposively selected being a vegetables zone under PMAMP. Altogether 70 cucumber producers from both the rural municipalities were selected using proportionate random sampling. Farmers having actual knowledge on different vegetable farming were included in survey since the data and information provided should more reliable and valuable to address and solve the problem. Similarly, 15 traders and 5 consumers were also selected randomly from local and domestic markets of the district. Primary data was gathered and survey research was done. Primary data was collected by conducting Key Informant Survey (KIS), questionnaire survey, Focus Group Discussion (FGD). To supplement the data from primary sources, various published and unpublished secondary sources of data, proceedings and reports of various NGOs and INGOs. Data analysis was done by using Statistical Package for Social Sciences (SPSS) and Microsoft excel (MS excel), Software Package.

Results

Value Chain Analysis of Cucumber

Value Chain Concept and Link with Cucumber

Value chain analysis defines a significant role in understanding the need and scope for systemic competitiveness. Mapping the flow of inputs- goods and services- in the production chain allows each firm to determine who else's behaviour plays an important role in

its success (Kaplinsky & Morris, 2001). The concept of value added, in the form of the value chain, can be utilised to develop an organisation's sustainable competitive advantage in the business arena. All organisations consist of such activities that link together to develop the value of the business, and together these activities form the organisation's value chain. Such activities may include purchasing activities, manufacturing the products, distribution and marketing of the company's products and activities (Lynch, 2003). It is a sequence of productive processes from the provision of specific inputs for a particular product to primary production, transformation, marketing and distribution, and final consumption. Value chain seeks to address the major constraints at each level of the supply chain, rather than focusing on just one group or on one geographical location (Dempsey & Campbell, 2007).

Value chain actors of cucumber are divided into two linkages, backward linkage and forward linkage. In backward linkages, cucumber growers received inputs from agro- vets, PMAMP office, Agriculture Knowledge Centre, and labors from local level. Local traders collect cucumbers from the farmers and transport to nearby or distant markets, both in the district and outside the district.

A. Functions and Actors

Input Suppliers

Agricultural inputs, primarily seed, fertilizer and agrochemicals have enormous potential to leverage the efforts of hard-working farmers. In HVAP area agro-vets are the first point of contact for the farmers for receiving agricultural inputs and information. Many farmers also receive inputs/information from DADO, NGOs, farmer groups and cooperatives.

Producer

Producers pointed out that for vegetables; there were no any set arrangements to make the marketing based on contracts. There are basically two categories of producers in the production areas i.e. subsistence and commercial producers. Subsistence farmers generally purchase and organize necessary agro inputs and sell the produce at local haat bazaar, whereas the commercial farmers sell their produce to the known collectors or cooperatives. As the vegetables are perishable, they have to be sold as soon as harvested. Farmers did not have any technology to create price advantages over time.

Collectors and traders

Collectors and traders are the key actors of the vegetables value chain who are involved in trading vegetables from production sites to the wholesale markets. Their trading activities include: buying and assembling, sometimes selling to middlemen, transporting and selling to wholesale markets. Deducting all the costs incurred in above activities

including the taxes and transport damages is done by wholesalers.

Wholesalers

Wholesalers are mainly involved in buying vegetables from the traders and supplying them to the retailers. They also store products, usually for a maximum of two days. They are where there are market hubs with some infrastructure such as office buildings, open stores, transaction sheds, and shop sheds. These market hubs are generally established with government support and operated by local market management committee.

Retailers

Retailers are the other important actors with close linkages with the wholesalers and the consumers. Their involvement in the chain includes buying of vegetables, transporting to their retail shops, grading, displaying and selling to the consumers.

Consumers

Consumers with respect to this study are the individual households and hotels who buy and consume tomato, cauliflower, cabbage, and other cucurbits.

B. Enablers and Facilitators

In a value chain, the enabler provides regular support services or represents the common interest of the value chain actors. Functions at the enabler level include public research and technology development, agreement on professional standards, promotional services, joint marketing or advocacy and other support service providers. For the farmers, Agriculture Knowledge Center of PMAMP Vegetable zone Tanahun is working to develop and disseminate different technologies in offseason vegetable farming. Microfinance cooperatives assist farmers by providing loan during plantation time.

Cost of Production and Returns

Cost of production refers to outlay of funds for the procurement of necessary inputs and labor employed. Cultivation of cucumber incur various types of cost, as it requires various kinds of input in terms of labor, manure, fertilizer, seed, irrigation, pesticides, etc.

Table 1: Cost distribution of cucumber in the study area per hectare

Particulars	Cost (NRs/ha)	Cost (NRs/ha)
Human Labor	8792.85	172867.4
Power Used	1657.86	32593.53
Seed	447.43	8796.47
Fertilizers	413.5	8129.41
Micronutrients	74.57	1466.05
Pesticides	263.3423	5177.26
Organic Manures	2348.57	46172.88
Irrigation	417.07	8199.59
Total Cost	14414.19	283383

The study revealed that the total cost of cucumber production was NRs. 322,321.57/ha. The total variable cost and total fixed cost incurred were 283,382.97 and 38,938.6 respectively. The details of cost of production of cucumber in the study area is presented in Table 1 and 2.

Table 2: Economic indicators showing productivity and profitability of cucumber farming

Particulars	
Total cost (NRs/ha)	283383
Average Price (NRs/kg)	18
Gross Revenue (NRs/ha)	1004430
Net Profit	7161462
B:C Ratio	3.48

Marketing Channels

A marketing channel is the route taken by the title to the goods as they move from producers to ultimate consumers. (Stanton, 1975). Marketing channels are combination of agencies by which the seller who is often, though not necessarily manufacture, markets his product to the ultimate consumers. (Howard, 1975). There are mainly four marketing channels used by the farmers of the study area.

1. Producers → Local traders → Wholesaler → Retailers → consumers
2. Producers → Local traders → Retailers → Consumers
3. Producers → Retailers → Consumers
4. Producers → Consumers

Among these, channel 1 is the most used marketing channel.

Market Margin and Producer's Share

Market margin is the difference between the price paid by the consumer and price received by the farmers. Similarly, producer's share is the proportion of the consumer's payment received by the producers. Lower marketing margin and higher producer's share ensures efficiency of marketing system hence they are the indicators of efficiency of existing marketing system. The study shows that the marketing margin of cucumber was NRs. 32/Kg.

Marketing margin (MM) = consumer's price (Pc) – Price received by the farmers (Pf)

$$= 50-18$$

$$= \text{NRs. } 32/\text{kg}$$

$$\text{Producer's share}(\%) = \frac{Pf}{Pc} \times 100$$

Where, Pf=Price received by the farmers

Pc= Consumer's price

$$= (18/50) * 100\%$$

$$= 36\%$$

Conclusion

Based on the findings of the study, we conclude that this research fulfills all the value chain practices of cucumber in Tanahun. Additionally, it also fulfills the objective of identifying the major bottlenecks of cucumber and need of implementing concept to analyze the margins management in Nepalese cucumber sub-sector. It helps to minimize the existing gap between the producer and final consumers of cucumber and to show the efficient value chain practices of cucumber.

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Conflict of Interest

The authors declare that there is no conflict of interest with present publication.

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