



## Research Article

# Factors Affecting and Marketing Chain of Ginger in Salyan District, Nepal

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### Abstract

Ginger is the potential high value sub-sector in Nepal for small scale farmers' livelihoods. In this context, this research was conducted in 2016 to analyze value chain of ginger sub-sector in Salyan district of Nepal. Dadagaun and Tharmare VDCs of Salyan were purposively selected for the study. Primary data were collected using semi-structured questionnaire for household survey as well as focus group discussion (FGD), key informant interview (KII) and rapid market appraisal (RMA) survey were used. Household level cross-sectional data from 140 households (70 from Dadagaun and 70 from Tharmare VDC) were sampled using simple random sampling technique. Descriptive statistics, and value chain analysis were used to analyse data. Average land under ginger cultivation was 1.62 ropani which was higher in Dadagaun (2.17 ropani) than Tharmare (1.07 ropani) and found statistically significance different at 1 percent level. The average marginal cost of fresh ginger was NRs. 12.15/kg. Local traders were the major market actor influencing the price of ginger and bargaining power as the major factor whereas farmers were seemed weaker in the value chain due to low bargaining power with lack of market information. Huge marketing margin (NRs. 94/kg) and low producers share (14.55%) showed that there was no strong linkage between the producers and traders. This study revealed that ginger value chain analysis in the study area found very unstructured and poor strengthening of business enabling environment, unorganized functional market chain and poor inputs and service provision.

**Keywords:** ginger; value chain; farmers; descriptive.

### Introduction

Nepal is a small landlocked least developed country situated between the latitude of 26°22'N to 30°27'N and longitude 80°4'E to 88°12'E with a total area of 147,181 square km. About 70 percent of country's area is covered by hills and mountains. Plains, hills and mountains account for 23 percent, 42 percent and 35 percent, of the total area of the country, respectively (Karki, 2002). Thus, due to its huge variation in topography and climate it has 136 ecosystems

and it ranks 25<sup>th</sup> in the world in terms of biodiversity (CBS, 2014). Nepal is richly endowed with numerous agricultural crops and plants. The variation in temporal, altitudinal, topographical and aspects, has made such agricultural biodiversity possible (Shrestha, 2007). Agriculture sector contributes about 28.79 percent to the total Gross Domestic Product (GDP) (AICC, 2016). About 65.6 percent of the country's total population is engaged in agriculture as livelihood and employment opportunity (CBS, 2011).

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Agriculture through its commercialization and development can only uplift the living standard of the vast rural population (Adhikari, 2000). Agriculture has always drawn attention at planning and policy level for its commercialization and diversification for more income generation, conservation of biodiversity and employment opportunities (Kafle, 2004). Nepalese agriculture has always carried a huge potential and to harvest these potentials several planned and unplanned development efforts have been carried but only a minimal achievement has been achieved (Regmi, 1999). Rural poverty is ever increasing causing problems as food insecurity, unemployment, poverty and malnutrition because of poor infrastructures, weak institutions, insufficient technological extension, subsistence farming, political instability, lack of production inputs, lack of proper market and access to if available market (CADP, 2008).

Among the 19 products identified with best export potential ginger is one of them (NTIS, 2010). The export of high value crops to Indian markets will grow to 65000MT by 2020 as per Department of Agriculture (DOA) a rise by 188% of ginger compared to base year 2001 (ADB, 2010).

Nepal's comparative advantage in production of high value crops lies in its unique natural base and some traditional agricultural skills. (ADB, 2010). The increasing trend of ginger production and export indicates that it could establish itself as an enterprise contributing significantly in national economy (PACT, 2012). In Nepal more than 20 species are in common use and half of them are cultivated in Nepal (GRP, 2009).

Ginger (*Zingiber officinale* Rose.) is one of the most important spice crop grown in the mid hills of Nepal as High Value Crops (HVCs) which has extreme export potential (HVAP, 2011). With an export value of about NRs. 509 million, ginger contributed to 1.3 percent of all the exports in the fiscal year 2013 (TEPC, 2014). India is major trading partner of Nepalese ginger with export value of NRs. 465 million (MoAD, 2015). More women involvement in cash crops farming as ginger indicates that women economic empowerment is in improvement (Poudel, et al., 2015). Salyan district was the largest producer of ginger in terms of area (4370 ha) whereas Illam was the largest producer in terms of production (45,994 MT). The total production of ginger in Salyan was 42,389 MT (MoAD, 2015).

The objective of the research was to develop value chain map of ginger in enabling business environment, market chain (actors/products) and inputs/service provision scenario.

## **Materials and Methods**

### ***Selection of Study Site***

Salyan district of Nepal was selected purposely as there was higher production potential and export of ginger. Among all

districts of Nepal there was the second highest production after Illam in the year 2014/15 (MoAD, 2015). This district is located at the mid-western region of Nepal and represents the typical mid-hill characteristics of the country. Two VDCs namely Dadagaun and Tharmare were selected purposely based on the level of production, access to road facility, market distance and average area per household under ginger cultivation.

### ***Selection of Ginger Farmers***

All the ginger growers of Dadagaun and Tharmare VDCs were the sample population of the study. The list of ginger growers was obtained from ginger cooperative located at Dadagaun. Total 140 samples were selected randomly (@ 70 from each VDC).

### ***Selection of Key Traders***

Ginger traders are the middlemen who are involved in the marketing of ginger. Three local level ginger traders (collectors) and 10 ginger retailers were selected in the study area to determine market channel, price spread, market margin, producers share. Cooperative of Dadagaun VDC was selected for obtaining information related to ginger marketing.

### ***Sources of Information***

The information required for this study was obtained through primary as well as secondary sources. Primary data were obtained from ginger growers, middle man or traders, wholesalers and retailers. The information was collected through household survey using semi-structured questionnaire and checklist. Observation, Focus Group Discussion (FGD), Key Informant Interview (KII), Rapid Market Appraisal (RMA), and Key Informants Survey were also used to triangulate the data.

### ***Data Analysis***

Raw data obtained from field were analyzed to obtain a certain conclusion. Both primary and secondary information collected from field survey and other methods were coded, tabulated and analyzed by using Statistical Package of Social Science (SPSS) and Microsoft Excel. Different variables in this study were used on both quantitative and descriptive analysis.

### ***Marketing Margin***

The difference between the farm gate price and retailer's price is the marketing margin which was calculated as follows:

Marketing margin = Retailers price (Pr) – Farm gate price (Pf)

### ***Producer's Share***

Producers share is the price received by the farmer expressed as a percentage of the retail price, i.e., the price paid by the consumers. It can be calculated by the following formulas.

$$\text{Producers' share (Ps)} = \frac{\text{Producers' price (Pf)}}{\text{Retailers' price (Pr)}} \times 100$$

### Land Category under Ginger Cultivation

The area under ginger cultivation of the sampled household was categorized into 2 categories as small (less than 1 ropani) and large (more than 1 ropani).

### Factors and Actors Affecting Price of Ginger

Different factors affecting the price of ginger with multiple choices were analyzed by the help of frequency and percentage of total sample from each VDC. One respondent was allowed to say 5 best factors for the study. On the basis of respondent perception, the factors affecting price of ginger were analyzed.

### Value Chain Analysis

The value chain describes full range of activities that are required to bring product or service from conception, through the different phases of production, delivery to final consumers and final disposal after use. The different existing value chains in the study area was drawn and analyzed. The cost of production and price paid to the concerned stakeholders was determined and margin to each actor in the value chains was calculated. Similarly, the producer's share and marketing margin was calculated for each different chain in the study area. Also price spread at each step of the value chain were analyzed.

## Results and Discussions

### Area of Ginger Production

The average area allocated for ginger production in the study area was found to be 1.62 ropani and the average area of Dadagaun VDC was found to be 2.171 and that of Tharmare was found to be 1.069 and it was found to be

significant at 1 percent level of significance. Farmers of ginger were categorized into three groups as small farmers cultivating in the land of 0.0 - 1 ropani, medium farmers as the farmers cultivating in 1 - 2 ropani land and the farmers cultivating in more than in 2 ropani land were categorized as large farmers. On an average most of the farmers (42.8) were large farmers in the study area, 72.9 percent of the farmers in Dadagaun VDC were found to be large farmers whereas 12.9 percent of farmers in Tharmare were found to be large farmers. 38.6 percent of the farmers of the study area were found to be medium farmers where 24.3 percent of the farmers from Dadagaun VDC were found to be medium farmers and 52.9 percent of the farmers from Tharmare were found to be medium farmers. 18.6 percent farmers in the study area were found to be small farmers where 2.9 percent farmers in Dadagaun VDC and 34.2 percent of the farmers in Tharmare were found to be small farmers.

In Dadagaun VDC most of the farmers were found to be large farmers followed by medium farmers and then by small farmers whereas in Tharmare VDC most of the farmers were medium farmers followed by small farmers and then by large farmers. The difference in distribution of farmers on the basis of the land size on which they cultivate ginger among the two VDCs was found to be significant at 1 percent level of significance (Table 1).

### Factors and actors affecting price of ginger

There are different factors that affect the price of ginger. A five points scaling technique (1, 0.8, 0.6, 0.4 and 0.2) was applied to rank the factors that affect the price of ginger based on the farmers' perception. The value obtained from the rank scale showed that bargaining power was the most decisive factor, followed by market information, access to market, availability and season (Table 2).

**Table 1:** Area for ginger cultivation in the study area (in ropani)

Variable	Total (n=140)	Dadagaun (n=70)	Tharmare (n=70)	Mean differences	T/Chi-square value
Area (mean)	1.62	2.171	1.069	1.1021	7.150***
Farmers category #					
Small farmers (< 1 ropani)	26 (18.6)	2 (2.9)	24 (34.2)		
Medium Farmers (1-2 ropani)	54 (38.6)	17(24.3)	37 (52.9)		55.423***
Large farmers (> 2 ropani)	60 (42.8)	51 (72.9)	9 (12.9)		
Total	140 (100)	70 (100)	70 (100)		

# Pearson chi- square and t-test for continuous variable Figures in the parentheses indicate percent  
\*\*\* indicates significant difference at 1 percent level

**Table 2:** Factors affecting price of ginger in the study area

Factors	Weight	Index	Rank
Season	63.8	0.46	V
Availability	73	0.53	IV
Bargaining power	108.2	0.77	I
Access to market	82.2	0.61	III
Market information	89	0.64	II

There are different factors that are involved in determining the price of ginger. A five-point scale technique (1, 0.8, 0.6, 0.4 and 0.2) was applied to rank the factors that affect the price of ginger based on the farmers' perception. The value obtained from the rank scale showed that the most important and decisive actor is local collectors, followed by farmers, wholesalers, cooperatives and exporters.

**Table 3:** Factors affecting price of ginger in the study area

Factors	Weight	Index	Rank
Local collectors	129.2	0.92	I
Wholesalers	69	0.53	III
Cooperatives	60.2	0.47	IV
Exporters	32	0.28	V
Farmers	111.2	0.81	II

#### Value chain of ginger in local market

The average cost of production for Nepalese farmers is NRs. 12.15 per kg and they sold their produce at NRs.16 per kg to local traders. Local traders sold their produce to regional or national producers at NRs. 35 per kg with the transportation cost of NRs. 3 per kg leading their cost to NRs. 22 per kg. The national or regional traders sold their produce to the national wholesale market at NRs. 64 per kg. The price fixed at national wholesale centre was NRs.73 per kg. (Table 4).

Nepalese ginger has small market within the national boundary thus most of it is exported abroad. The average price paid by consumer was found to be Rs. 110 per kg in Ghorahi bazaar. Thus the market margin was: = retailer's price – farm gate price

$$= 110 - 16$$

$$= \text{Rs. } 94$$

Similarly, producers share =  $(16/110) \times 100$

$$= 14.55\%$$

**Table 4:** Market margin of fresh ginger at different levels of value chain (NRs./kg)

Factors	Cost	Selling Price	Market Margin.
Farmers	12.15	16	3.85 <sup>1</sup>
Local traders	19	35	16
National/regional traders*	35	64	29
National wholesale centre (Kalimati)	64	73	9
Retailers (Ghorai, Dang)	75	110	35
* to Indian buyers (fresh)	35	40	5
* to Indian buyers ( <i>sutho</i> )	22,000/qtl	28,000/qtl	6,000/qtl

#### Marketing chain

The major actors involved in the value chain in our study area were found to be farmers, local traders, wholesalers, retailers and consumers. Ginger marketing includes all the

activities involved in the transference of farmers' product either fresh or processed to the consumers at both domestic and international level. Ginger growers at Tharmare were solely dependent on the local traders for the distribution of their product. It was found that the farmers of Dadagaun VDC used both local traders and co-operatives as their transaction point. Marketing chain in Tharmare

In Tharmare, the ginger farmers sold their product to the local traders. Lack of basic infrastructures as proper road, proper communication has compelled the farmers to sell their produce to the local traders. All the transactions were in cash. The ginger farmers took the product to the collection centre mainly on their back.

The local traders after collection of ginger, they sold ginger to the regional and national traders located at Ghorahi, Tulsipur and Nepalgunj.

#### Marketing Chain in Dadagaun

In Dadagaun VDC most of the farmers used both local traders and co-operatives as their ultimate point to dispatch their product. Here too all the transactions were cash. Since nearby distance to markets of Srinagar and Khalanga had also provided the farmers an additional option of dispatching there if the price is significantly better there.

The local traders after collecting the produce sold their produce to the regional traders at Ghorahi, Tulsipur and Nepalgunj. The cooperatives mostly supply their produce to the ginger processing factory in Surkhet, DADO and GRP, Kapurkot.

#### Conclusion and Recommendations

Ginger cultivation has already established itself as one of the major contributing sub- sector in the livelihood of the people in hilly areas of Nepal. Most of the farmers were medium and small farmers and since they are resource poor, they can't make sudden approach towards more technology demanding modern agriculture practices and ginger farming is the best alternative available for them. Improvement in ginger value chain giving farmer's proper share of their product might encourage the youths to get enrolled in ginger farming leading to less amount of abroad migration. Most of the farmers in Tharmare VDC were found to be encouraged in the production of *sutho* as their fresh produce derived less value in the market. Most of the farmers in Dadagaun VDC were found to produce seed as their produce were less in fiber content which might be due to topographic comparative advantage in Salyan district.

Farmers' low bargaining power is the most decisive factor in determining the price of ginger. As the farmers don't have any access or contact to market and they are not in a position to sell every amount of their produce in highly processed form, they are forced to sell their product at minimal price. Farmers' lack of direct contact and access to market, and establishment of local traders as the only point

for the transaction of the produce, gives the local traders absolute power in exercising the price of the produce. Although the benefit cost ratio is satisfactory, huge market margin and low producers' share suggests for absolute reform required in value chain.

Since farmers were cultivating ginger from a long time, its cultivation practice are the things they know well so they would just cultivate it regularly, furthermore it gave better return than other cereal and crops. Their decision to cultivate ginger is not generally influenced by other factors its simply their one of the traditional occupation.

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### References

- ADB (2010) *Agricultural ValueChain Analysis: Nepal: High Mountain Agribusiness and Livelihood Improvement Project*, s.l.: s.n.
- Adhikari KP (2000) *Study of Socio Economic Impact of VegetableSeed Production in Khalanga Village Development Committee, Rukum,Nepal*, Rukum, Nepal: Vegetable Seed Production Centre.
- AICC (2016) *Krishi Diary, Agriculture Information and Communication Centre, Department of Agriculture, Lalitpur, Nepal*.
- CADP (2008) *Final Report*, Biratnagar, Nepal: s.n.
- CBS (2011) *Statistical year book of Nepal*. Kathmandu, Nepal: Centrl Bureau of Statistics. National Planning Commission Secretariat, Government of Nepal.
- CBS (2014) *Statistical year book of Nepal*. Kathmandu, Nepal: Centrl Bureau of Statistics. National Planning Commission Secretariat, Government of Nepal.
- GRP (2009) *Technical Annual Report -2008/2009*, Kapurkot, Salya, Nepal: Ginger Research Programme..
- ITC (2010) *World Trade Map*. International Trade Centre.
- Kafle BD (2004) *Production and Marketing Dynamics of Ginger Production in Salyan District*. Rampur, Chitwan: Tribhuvan University, Institute of Agriculture and Animal Science.
- Karki YK (2002) *Agricultural Market and Marketing Information System of Vegetable Marketing in Kathmandu Valley*. Rampur, Chitwan, Nepal: Institute of Agriculture and Animal Sciences.
- PACT (2012) *ValueChain Status of Gingerin Mid-WesternDevelopment Region*, Kathmandu, Nepal: Project for Agriculture Commercialization and Trade.
- Poudel RR, Regmi PP, Thapa RB, GC YD, KC DB (2015) Socio-economic aspects of ginger producers in the Western hills of Nepal. *Nepalese Journal of Agricultural Sciences* **13**: 48-59.
- Regmi PP (1999) *Agricultural Development Through Eco-Structuring in Different Ecological Zones Across Nepal*. Bangkok, Thailand: Asian Institute of Technology.
- Shresta SG (2007) Necessity for Watershed Conservation for Nepal's Overall Development (Nepalko Samasthighat Vikashko Lagi Jaladhar Sanrakshanko Apariharyata in Nepali). *Hamro Sampada*.
- TEPC (2014) *Trade Related database*. Kathmandu, Nepal: Trade and Export Promotion Centre.
- The NTIS Team (2018) Nepal trade integration strategy 2010 - Google Search. Retrieved April 29, 2018, from <https://www.google.com/search?q=nepal+trade+integration+strategy+2010&ie=utf-8&oe=utf-8&client=firefox-b>