

THE EFFECTS OF GROUP MARKETING ON COFFEE VALUE CHAIN SMALLHOLDER PRODUCERS' PERSPECTIVES IN SINDHUPALCHOK, NEPAL



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**THE EFFECTS OF GROUP MARKETING ON COFFEE
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Master Degree in Management of Development

Specialization: International Agriculture

Wageningen, The Netherlands, 2009

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ACRONYMS

AEC	Agro-Enterprise Centre
AED	Agriculture Engineering Department
AGDP	Agricultural Gross Domestic Product
APP	Agriculture Perspective Plan
ATPMC	Agri-Business and Trade Promotion Multi Purpose Cooperatives Ltd
CBS	Central Bureau of Statistics
CoPP	Coffee Promotion Programme
CPG	Coffee Producer Group
CTDS	Coffee and Tea Development Section
DADO	District Agriculture Development Office
DCPA	District Coffee Producer Association
DoA	Department of Agriculture
FAO	Food and Agriculture Organization of United Nation
FNCCI	Federation of Nepalese Chambers of Commerce and industry
GDP	Gross Domestic Product
Ha	Hectare
ICS	Internal Control System
Masl	Meter above Mean Sea Level
MFC	Market Facilitation Committee
MOAC	Ministry of Agriculture and Cooperative
Mt	Metric Tones
NARC	Nepal Agriculture Research Council
NCPA	Nepal Coffee Producer Association
NeCCo	Nepal Coffee Company
NGO	Non-Governmental Organization
NPC	Nepal Planning Commission
NRs	Nepalese Rupees
NTCDB	National Tea and Coffee Development Board
SAHEC	Sustainable Agriculture, Health, Environment Centre
VDC	Village Development Committee

GLOSSARY

Bari Unirrigated upland

Khet Irrigated land

Ropani Unit of land

EQUIVALENTS

Area

1 Hectare = 20 Ropani

1 Ropani = 500 sqm. (0.05ha.)

Weight

1 Metric ton = 10 quintal

Currency

1€ =105 Nepalese Rupees

1\$ = 75 Nepalese Rupees

ABSTRACT

The study was carried out in 2009 in Sindhupalchok District to assess the effects of the collective processing and marketing system of the coffee value chain of small holder coffee producers. 15 small holder coffee producers who involved in group marketing, 2 pulper operators, 2 organizations who support coffee production and marketing and one trader have been interviewed by means of a semi structured questionnaire and analyzed. A secondary data from Coffee Promotion Project (2004) was used to calculate the profitability from coffee cultivation and Bastola 2007 was used to calculate the processing and marketing cost at different levels. The collective marketing is beneficial to the small holder producers because group farmers have a strong bargaining power about the coffee price, increase in profit from coffee, easy and increased quality of coffee, saving of time, payback ensure and on time, reliable and sustainable market, increased social harmony and establishment group saving and credit. Collective marketing ensures the market and price of coffee because of this group famers are increasing the area of coffee by converting the other crops land.

In collective marketing farmers are organized in a group, the developmental organizations and governmental organizations assist group rather than individuals. After formation of group they got more trainings and equipments like pulping machine. After formation of group, coffee is pulped at village level. In Abiral Bagdacha Indrawati coffee producers group, the coffee is sold to the pulper operator and pulped by him and in Kalleri Danda coffee producers group; farmers themselves pulped and prepared dry parchment. The main benefit of collective marketing is increased bargaining power and the second one is to ensure payment.

The average gross margin from coffee cultivation was Rs 19 per kg of fresh cherry. The marketing margin is Rs. 44.90 and the producers share with processing and marketing cost is 31.50% and without subtracting the processing and marketing cost is 37.55% for ground coffee.

Three different value chains were identified in coffee. Coffee Producers, local roasters and local market, second is pulper operator, traders and domestic market and the third is traders and exported to international market. The price spread in these value chains ranged from Rs. 27 per kg of fresh cherry in the first value chain (sell to pulper operators by producers) up to Rs. 71.90 per kg of fresh cherry in the domestic market value chain. The producers share is high in local roasters' chain, 38% and in second chain is 32%.

All the coffee is pulped at village level, wet processing method is used. The main advantage of processing is pulped cherries fetched high the prices and second is job opportunity. The topmost ranked marketing constraint is low economics of scale with individual farmer. And lack of transport facility and high cost of transportation is second. Despite all these constraints, the area under coffee cultivation and quantity of coffee transacted in the domestic and international market has been increasing each year and all the stakeholders of the industry are optimistic. There is an immense need of government, NGOs, traders, and other agencies to lay efforts on providing trainings for producers and marketing groups, raising awareness on consumers and facilitation for marketing. If we emphasize on bulk production, community forest users group to produce coffee on community forest, quality processing and efficient marketing, we could reap higher benefits from coffee industry.

CHAPTER ONE - INTRODUCTION

1.1 Introduction

This study has been carried out as a final thesis research for the partial fulfillment of the course requirements of Master in Management of Development (MOD), specialization in International Agriculture at Van Hall Larenstein University of Applied Sciences in Wageningen. This research report gives insight into the Effect of Group Marketing on small holders' Coffee value chain.

This research report consists of 7 chapters. The first chapter gives an introduction and background of Nepalese Agriculture and coffee in Nepal. This chapter also contains the objective of the paper, the main research problem and sub-questions for research. Chapter two gives the literature related to coffee and the collective marketing of coffee. The third chapter covers the methodology, the research design, the nature and source of data, the data collection technique, the selection of the study area, presents brief introduction of the study area, shows the sampling procedures and methods of data analysis. Chapter four describes the results of the data collection and discussion on the findings. Conclusions and recommendations are given in chapter five.

1.2 Background

Agriculture continues to be the dominant sector in the Nepalese economy. It accounts for about 38 percent (at current price) of the GDP with an annual growth rate of 3 percent, employs about 65 percent of the total economically active population (CBS, 2007). Therefore, any search for poverty alleviation and employment generation should make agriculture as the foundation. Considering this fact the government has implemented the 20 years Agricultural Perspective plan (APP 1995–2015) to accelerate the growth rate of agricultural sector. This plan intends to raise AGDP growth rate from 3 percent in 1995 to 5 percent by the end of 2015 (APPROSC and JMA, 1995, cited in Bastola, 2007).

Nepal has been recognized for having some potential area for coffee cultivation for over four decades. The type of coffee cultivated at present is Arabica, which is grown in mid hills of Nepal. Its cultivation can be carried out in fertile and semi fertile land. Coffee helps to diversify small scale farmers' income in their integrated farming system in mid hills of Nepal. Coffee cultivation needs low investment, is favorable for soil conservation and has positive impact on environment. (<http://www.abtraco.org.np>)

Coffee is a relatively new cash crop that started being grown in Nepal almost with no inorganic fertilizers and pesticides use. It is an important occupation in the rural economics with a huge participation of marginal, poor and lower economic class of the rural communities. Likewise; it could be a major commodity to link the Himalayan country with the consumers of international market. Coffee farming in Nepal is proven as promising due to the availability of soil with a fragile nature and an appropriate climate in the mid hills. Most of the farmers planted coffee in a sloppy land. Which type of land is vulnerable to erosion, due to this, coffee could be an important means for the soil conservation, bio-diversity maintenance and watershed balance in the mid-hills of Nepal (AEC, 2006)

Coffee is an important cash crop for millions of farmers in more than 50 countries. Coffee is the second largest commodity in world trade after petroleum with an annual trading volume of US\$ 40 billion. Brazil is the largest producer of coffee and America is the largest consumer (Dhakal, 2005). Coffee contributes about 0.04% to GDP (Krishi Sandesh, 2004). It provides 5 times more yield than that of maize and millets and 2-3 times more yield than that of any other cash crops. One hectare of coffee farm yields a net surplus of about Rs. 200,000 with paid labor and it becomes about Rs. 250,000 with family labor (Bajracharya &

Pathak, 2001). It also holds a special place as a foreign exchange earner for our country. Now, in the world market, the demand of organic coffee with reduced amount of caffeine, growing in same the climate from the high hill region of Nepal (Specialty coffee) is more and more (Dhakal, 2005).

In the tenth plan, it is stated that the emphasis will be given to the development of a commercial pocket by providing support for production, collection, quality enhancement grading, packaging, processing etc. on the special crops having export prospects like tea, coffee, cardamom, ginger, garlic, and chilly (NPC, 2002). Coffee farming in Nepal is proven as promising due to the production potential and the quality, fragile nature of soil, and appropriate climate in mid hills (AEC, 2004).

The number of coffee producer groups is increasing every year with many new farmers planting coffee and many old farmers increasing the area under the coffee (Shrestha, 2004). Present trends of expansion at farmer's level show that coffee could be one of the high value agri produce as a niche product for export (AEC, 2004). From the mid-seventies, coffee was grown as a commercial crop and nurseries were also established for commercial purposes.

Nevertheless, Nepali coffee has been exported as high grown coffee produced by resource poor smallholders under organic conditions. For instance, the trend of export has been very impressive. The total export of coffee from Nepal increased to 114 Mt. in 2007 from a more 37 Mt. in 2004 (CoPP/Helvetas, 2007). Coffee has a huge opportunity for exports in the international market, which would provide higher economic benefit to the smallholder.

Now different development organizations like the Coffee Promotion Project (CoPP), coffee Producer Groups, District Coffee Producer Association (DCPA), Nepal Coffee Producer Association (NCPA), Pulping enterprises, District Agricultural Development Office and Coffee and Tea Development Section facilitate group formulation and effective operation of participants to enhance marketing competence.

Institutions encourage collective action of small farmers are instrumental in reducing marketing costs and provide economies of scale in marketing. Empowerment of farmers groups and cooperatives to effectively carryout collective actions and to advantageously connect to the market value chains should be given high considerations. Institutions are required to ensure contract security between farmers, processors and the retailers which reduces risks. There are total 13200 coffee producing households organized into 589 coffee producer groups. (<http://www.helvetasnepal.org.np/copp.htm>). Targeting the growing production of coffee in the country, the Nepal Agriculture Research Council (NARC) introduced different indigenous coffee pulping machines (pulpers). The NARC's Agriculture Engineering Department (AED) developed the roller typed hand operated pulper, cycle roller pulper and electrically operated pulper. Processing methods changed over the past 2 years from 100% dry processing to more than 70% wet processing through the introduction of roller and drum pulpers. In most of the district the pulpers are distributed in the groups of coffee farmer. Coffee producing groups are working on value addition of coffee through improved coffee pulper machine (CoPP/Helvetas, 2007).

1.3 Problem statement

Smallholder farmers are growing coffee since a long time back but at a very small scale. With the introduction of commercial coffee production program by Nepal Government and other nongovernmental organizations, farmers started to grow coffee at a more commercial scale. Though the number of coffee producers and production quantity is increasing per year, farmers were not able to fetch better prices because of the raw state of the produces and facing difficulties in marketing of small quantity of production of individual farmers because they were not organized in group or cooperatives. When some development

organizations started to organize the producers in groups, they started to grow and sell the produces collectively. Then farmers established their own organization Farmers Group and District Coffee Producers' Association (DCPA) work together for collective benefit. They have introduced the Coffee Pulper through their organization for value addition and to increase the market supply. Despite various research activities in the field of coffee production system in Nepal, the effect of collective processing (Coffee pulper) and marketing on value-addition and market access is lacking. Thus this research is focused on identifying the opportunities and challenges of collective marketing system in coffee sector in linking to value addition and market promotion.

1.4 Objective:

To assess the effects of collective processing and marketing system on the coffee value chain of small holder coffee producers

1.5 Research Question:

The general research question is: "What are the effects of collective processing and marketing system on coffee chain of Smallholder producers?"

1.6 Research sub-question

1. What are the existing coffee marketing channels in Sindhupalchok district?
2. What is the value share of different chain actors on coffee value chain of smallholders?
3. How collective processing and marketing systems in coffee was emerged?
4. What are the characteristics of collective processing and marketing system?
5. What are the changes of smallholders' position in chain due to collective processing and marketing?

1.7 Definition of concepts

Consumer: somebody that consumes something by eating it, or using it up.

Market: A place where buyers and sellers interact and where buying and selling activities take place, a price that is determined for the product will prevail.

Marketing channels: the route through which goods from producers to the consumers are marketed is called marketing channel.

Marketing system: is a primary mechanism for co-coordinating production, distribution and consumption activities in the food chain. In this report the scope of the coffee marketing system is from harvest to cup.

Efficient marketing: The movement of goods from producer to consumers at the lowest possible cost, consistent with the provision of services desired by the consumer, may be termed as efficient marketing

Marketing margin: the difference between the consumer's price and producers' price is known as marketing margin.

Marketing Constrains: Those factors, which are hindering the marketing of coffee, are considered as the constraints in this study

Value chain: A value chain is a supply chain consisting of the input suppliers, producers, processors and buyers that bring a product from its conception to its end use. A value-chain approach to development seeks to address the major constraints at each level of the supply

chain, rather than concentrating on just one group (e.g., producers) or on one geographical location.

Value share: It is the percentage of the final retail price that the actor earns. Value share is calculated as $\text{Added Value} \times 100 / \text{final retail price}$. Where Added value is price received by actor - price paid by actor.

Collective Marketing: An organization and operated by a group of farmers producing similar products who join together in partnership to gain the advantages of the economies of scale and to gain more control in marketing their products.

1.8 Scope of the study

The findings of the study were particularly applicable to small holder farmers of mid hill coffee producing district of Nepal. However, the findings may also have relevance to other areas of Nepal as well as in other countries, where the physical, socioeconomic, cultural and environmental conditions are similar. It is also expected that the findings of the study might be useful to government and non government organizations which are working in the coffee production, promotion and marketing field.

1.9 Limitation of the study

The study was only confined to 2 groups of 1 Village Development Committees however there were 6 groups in that VDC.

The survey time was only 2 weeks and the researcher had to collect some information of a whole year.

CHAPTER TWO - REVIEW OF LITERATURE

This chapter presents the brief review of the earlier studies carried out on Nepalese agriculture, coffee sub-sector in Nepal, coffee value chain, concept and literature on agricultural marketing, marketing system.

2.1 Nepalese agriculture

To accelerate the growth of agricultural sector, the government of Nepal has clearly defined and placed agriculture in priority sector of the Tenth five year plan as poverty reduction strategy. Widespread poverty of Nepal is said to be due to the primitive agriculture; hence modernization of agriculture with a high growth rate is way to reduce poverty of Nepal. According to tenth plan, the growth strategy for agriculture is to modernize and increase the access of farmers to modern agricultural inputs and credit (NPC, 2003).

Nepal government has launched Agriculture prospective plan, mainly emphasized on the production of high value crops through pocket packages strategy on crop and horticultural crops. Coffee has categorized as high value commercial crop (Bastola, 2007).

2.2 Present Scenario of Coffee in Nepal

Coffees are mainly grown in the mid hill region of Nepal. Although the production potential area of coffee in Nepal is 18,000 ha (AEC, 2000). Basic coffee growing districts of Nepal are Gulmi, Arghakhanchi, Palpa, Kaski, Lamjung, Gorkha, Tanahun, Syangja, Baglung, Parvat, Kavre, Lalitpur, Sindhupalchock, Jhapa, Ilam, Sankhuwasabha, Dhading, Makawanpur and Myagdi (NTCTB, 2008).

Very few formal researches have been carried out on production, processing and marketing aspects of coffee. A study conducted by Coffee Promotion Project of Helvetas Nepal in 2005 found that there were more than 200 pulping centers in operation in the pulping season in various districts. Wet processing of coffee was introduced in the country by Agro enterprise centre (AEC) in 1999 after distribution of 11 metal pulpers to coffee producers associations at farmers level (CoPP Report, 2005).

In the nine districts, 237 pulping centers were functional during the harvest season of 2007/08. Highest number of pulping centers were in Kavre (43), followed by Lalitpur (38), Kaski (31), Palpa & Syangja (30), Sindhupalchok & Gulmi (22) and Parbat (20) (CoPP Report, 2008). The present situation of the domestic market is not stable, and it is highly dependent on the number of tourists visiting Nepal. The sale amount of Nepalese coffee in the domestic market is directly related to the number of foreigners who come to Nepal. Nepal needs to exploit the uniqueness of the Nepali coffee and target the international niche market of the specialty coffee (Shrestha, 2004).

There are only few major players in this business sharing some portion in national as well as international market such as Everest Coffee Mills (P) Ltd, Panchkhal (16%), Highland Coffee Promotion P. Ltd, Kathmandu (20%), Nepal Organic Coffee Products, Madan Pokhara (12.5%), Gulmi Sahakari Sastha (25%), Nepal Coffee Company, Butwal (12.5%), Himalaya Coffee Products (P) Ltd, Kathmandu(2%), Plantec Incorporate (7.5%), District Cooperatives Federation Ltd, Tamghas and Nepal Mountain Coffee Company, Lalitpur (ATPMC, 2004).

Farmers in central and western mid hills are found interested to grow coffee realizing that coffee can fetch higher value compared to other substitutive crops. Moreover, the technological initiatives made by several agencies have positively affected farmers in cultivating more area of coffee. The Arabica coffee has been popular and commonly grown by Nepalese farmers.

Table 2.1: Area and Production of Coffee in Nepal, 1996-2007

Year	Area (ha)	Green Beans(mt)	Annual production growth compared to previous year (%)
1996	220	14	-
1997	259	19	35.71
1998	272	28	47.36
1999	277	22	21.42
2000	314	36	63.63
2001	424	44	22.22
2002	596	70	59.09
2003	764	94	34.28
2004	952	109	15.95
2005	1078	125	14.67
2006	1285	196	55.90
2007	1309	218	11.22

Source: NTCDB, 2008

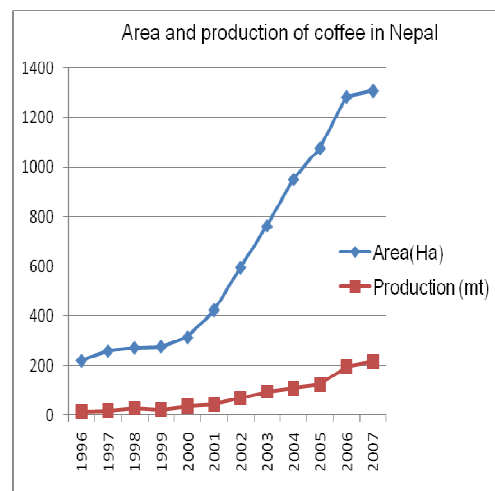


Fig. 2.1: Area and Production of coffee in Nepal

Area and production both are increasing in Nepal. The area under coffee was 220 hectare in 1996, while it has reached to 1309 hectare in 2007. Production of green beans coffee is recorded at 14 mt in 1996, while it reached to 218 mt in 2007. The growth of coffee is found in high rates. Annual growth rate is found ranging from 11.22 percent in 2008 to 63 percent in 2000. On an average, the production growth rate is encouraging due to its attractive international market and better returns compared to its competing crops.

2.3 Agricultural marketing

Agricultural marketing is considered as a process which starts from the farmer decision to produce a saleable farm commodity and it involves all aspect of the marketing structure or system, both functional and institutional with technical and economic consideration for market, distribution and use by final consumer (Kaini and Singh, 1998).

Rhodes, 1987 cited in Adhikari, 2007 stated that agriculture marketing commonly includes many transactions between farmers, various types of agribusiness and household consumers. Household consumers are the ultimate buyers. Farmers are usually the first seller in the process, but quite an array of agribusiness firms, which will be buyers and sellers as community moves through marketing channel. In physical terms, agricultural marketing begins when the product is loaded at the farm gate and ends when the products reach the consumers table.

Agricultural marketing is the performance of all the business activities involved in the movement of agricultural products from the production point (point of first sale i.e. farmers house, road side etc.) to the consumption point (point of last sale i.e. retail market). Acharya and Agrawal (1999) defined agricultural marketing as comprising of all activities involved in supply of farm input to the farmers and movement of agricultural products from the farmers to the consumers.

2.4 Marketing system

A marketing system includes producer farmers, traders, transporters, wholesalers, retailers, and consumers as the main actors of carrying out different activities (HMG/N, 1999). Formerly, the system was characterized by direct marketing of produce to consumers by farmers. Although this practice does still occur the system has been rapidly evolving in response to population growth and increased demand, new marketing channel have been developed by which the farmers can supply their produce to collection agents, local

assembly markets and to urban wholesalers. A modern marketing system includes producer farmer trader transporter wholesalers, retailers and consumers as the main actors to carrying out different activities. According to (Sidhu, 1986 cited in Adhikari, 2007), there are three major functions of product marketing system namely (i) procuring commodities from the producers (ii) distribution over time, and (iii) providing signals about the supply-demand relationship of a product to facilitate adjustments by the products and consumers in next period.

Chauhan (1998) reported that the price received by the farmers declined with the increase in the number of intermediaries. Furthermore (Chauhan and Singh, 1998 cited in Bastola 2007), the producers shares decreased significantly with the increase in the number of intermediaries. Profit to producer depends upon their farm product reaching to consumers at reasonable marketing cost and price. This depends upon the marketing efficiency and producers share on the price paid by the consumer.

Long marketing channels are one of the reasons for increased marketing cost and bring inefficiency in marketing. This results in the loss of consumer's welfare and producer's profit. The marketing channel can be conceived as a vertical tier of market since product moves from point of production to the hands of ultimate consumers. Negotiations are prevalent throughout the channel. Presence of intermediaries makes the marketing system inefficient in the long channels compared to the shorter ones (Haque et. al., 1996, cited in Adhikari 2007).

Acharya and Agarwal (1999) pointed out that marketing channel vary from commodity to commodity, from producer to producer, lot to lot and time to time. In rural areas and small towns, many producers perform the function of retailers. Large producers directly sell their product to the processing firms.

2.5 Collective/ Group/ Cooperative Marketing

In Collective marketing, groups of farmers collect their produce and market their entire product collectively (Robbins et al., 2004).

“Agricultural cooperatives play an important role in marketing agricultural crops. Agricultural producers get the opportunity to process and market their crops in a joint business due to cooperative venture with other producers. Producer cooperatives provide uniformity in quality by inspection during production, at harvest, and upon delivery. Uniform preparation of a commodity for a buyer can also be achieved, as can minimization of the numbers of farmers with whom a commodity purchaser must do business. Economic justification or objectives of a marketing cooperative are to maximize net income, to simply permit farmers to break even, and to assist farmers in maximization of net price received by cooperative members. In many cases, maximizing net income, and maximization of price received by members of a cooperative are in conflict with each other. Cooperatives are also formed to achieve market power, or to influence terms of trade. This trade may take the form of domestic or international markets. Terms of trade relate to price, timing, form, and other quality or quantity specifications.” (Downing et al., 1998)

Agricultural cooperatives can be cost-saving and risk-sharing devices for farmers in uncertain agri-commodity markets. The potential advantages of cooperative farming in generating economies of scale and scope contribute to reduce transaction costs, and to improve bargaining power vis-a-vis the market (Bonin *et al*, 1993; Munckner, 1988; Dulfer, 1974 cited in Francesconi, 2009).

Cooperatives are user-driven businesses that have contributed greatly to the development of the world most productive and scientific-based agricultural systems. They have played an

important role in strengthening market access and competitive returns for independent farm operators during the 20th century. (Dunn et al., 2002)

Bernard et al. 2008 cited in Francesconi, (2009), pointed that cooperatives provide better prices to producers. Marketing cooperatives help to reduce the transaction costs and improve bargaining power of smallholder's vis-à-vis the market. Collective marketing is the key activity for smallholders to gain access to agri-commodity markets. Collective action is a potential instrument for smallholders to cope with the challenges posed by global markets. Only cooperatives that engage in collective marketing activities, such as the collection and sale of members' output, appear to have a significant and positive impact on smallholder commercialization. (Francesconi, 2009)

By formation of group, poor farmers can improve their bargaining power to pool their produce, thus achieving economies of scale in their transactions and marketing activities. The formation of farmers' marketing groups enable produce to be sold to stakeholders further up the marketing chain, eliminating at least one level of middlemen and thus achieving better net farm-gate prices. Furthermore, marketing group encourage the improvement and standardization of quality to meet the more onerous contractual quality specifications demanded by larger buyers. Without the development and involvement of marketing group in the marketing of all commodity and product groups that will be very difficult for improved transaction cost efficiencies to result in better farm-gate prices. (Collinson et al. 2005)

Agricultural cooperatives are envisaged as favorable organizational forms to improve bargaining power and reduce the transaction costs of smallholders (Helmberger and Hoos, 1995; Nourse, 1945 cited in Francesconi, 2009).

The formation of small marketing cooperatives would be beneficial for the producer to take up the marketing of their produce so that small growers can be saved from multiple market functionaries and expenses (Singh, 1990).

Small holders need to be united/ organized in groups order to enhance their bargaining capacity (ATPMC, 2004). When collective action embraces collective marketing, farmers tend to intensify production (volumes and productivity) to the detriment of output quality and safety. Collective marketing activities provide clear incentives to intensify production. However, due to high demand pressure for cheap food and widespread poverty among producers, collective marketing tends to neglect the importance of output quality and safety (Francesconi, 2009).

2.6 Coffee marketing in Nepal

Generally in coffee marketing there are five players/stakeholders who are involved in bringing from the producing sites to the consumers or selling centers. They are farmers, collectors, pulpers, processors and traders. However, for the last few years, some collectors also perform the roles of pulping the ripe cherries and then bring it to the processor. This channel is common in wet processing system which covers nearly 80% of the market. Besides, above mentioned circuit, in some places, the farmers bring ripe cherries /dry cherries to the collector, who in turn (after drying if he buys the ripe cherries) takes it to the processors directly. This prevails in the dry processing system that accounts for nearly 20% of the market share. In both the processes, the processors themselves act as traders and sell the final products either in the domestic and, or overseas market. (FNCCI/AEC, 2005)

Nepalese produced coffee is sold both at domestic as well as the overseas markets. However, due to the lack of information and adequate publicity about Nepalese coffee and the prevailing taste preference for the imported instant coffee its consumption is not that encouraging in the domestic market. Furthermore, tea drinking vastly shadows it. However, it is important to note that coffee consumption is rapidly gaining its momentum and about 25-

30% of the domestic demand is estimated to be fulfilled by the domestic production. Nepal imports around 40 mt. of coffees, part of which can be substituted with domestic production. (FNCCI/AEC, 2005)

Coffee was introduced in Nepal long time ago and remained unnoticed for a long time. The commercial coffee production took place in mid eighties with the establishment of Nepal Coffee Company (NeCCo) Rupandehi district in 1983/85. NeCCo started collecting dry cherries from farmers and produced green beans for supply to domestic market targeted mainly to expatriate residents' and tourists. In recent years coffee has gained popularity as an important high value cash crop in the mid-hills. Already there are 10 established processors/traders; the demand for Nepali coffee has been increasing, and the supply of the product available to the traders is said to be not adequate to meet the demand in the international niche market. (Shrestha & Shingh 2007)

2.7 Marketing margin and producer's share

The marketing margin also known as the retail-farm gate margin is the difference between the retail price of a product and the price received by farmers for its product. Marketing margins are based on the distinction between factory/farm gate prices on the one hand and purchaser prices on the other, reflecting storage, and marketing costs (Arndt et al. 1999).

In the marketing of agricultural commodities, the difference between the price paid by consumer and the price received by the producer for an equivalent quantity of farm produce is often known as price spread (Rhodes, 1983, Acharya and Agrawal, 1994). In the marketing system, product has to pass through various functions to reach the consumer in the form of their interest. These functions add value to the farm produce for the consumers and reflected in the marketing margin. If marketing functions are performed efficiently, marketing cost is reduced resulting into lower marketing margin and higher producers share in consumer's rupees. Marketing margin indicate efficiency of the marketing system as it refers to the efficiency of the intermediaries between the producer and consumer in respect of the services rendered and the remuneration received by them. It also helps to identify the reasons for high marketing costs and the possible ways of reducing them. In addition, it also helps to formulate and implement appropriate price and marketing policies. Excessive margin points the need for public intervention in the marketing system (Acharya and Agarwal, 1999).

2.8 Processing of coffee

There are basically two distinct processing methods of coffee, namely dry processing and wet processing. Under dry processing, the cherry is dried either in the sun or through some other means. It is then, hulled with the use of hullers to produce green beans. The green beans are then sorted and graded to improve the quality and uniformity (AEC, 2004).

In the wet processing method, the beans are mechanically de-pulped with the help of pulping machine. Prior to that, the fresh cherries are dipped into the water and the floating beans, foreign materials are removed. After pulping, the beans are put in an airtight fermentation tank for about 24 hours for the purpose of removing the greasiness. The fermented beans are then washed to remove the mucilage from the parchment, and dried to produce dry parchment. Dry parchment is then hulled to produce green beans, which is the major exportable form of coffee to the international market. Wet processing requires considerable care, as processing errors can cause unpleasant flavors resulting in low quality of coffee. There has been demand of wet processed coffee in the international market (CoPP, Helvetas, 2005). The conversion rate of coffee is 100Kg ripe cherry = 35-38 Kg dry cherry (2.75:1); 100Kg ripe cherry = 23-24 Kg parchment beans (4.25:1); 100Kg ripe cherry = 16.5-18.5 Kg green beans (5.7:1) and 100 kg of ripe cherry = 14-15 kg of ground coffees (7:1) (FNCCI /AEC, 2006).

2.9 Production, processing and marketing constraints

Farmers are not properly and adequately aware of coffee farming technologies. Professionalism and commercialization have yet to be cultivated. Processing technologies and issues of quality assurance are also equally burning. There are genuine problems in marketing of coffee as well (Bajracharya & Pathak, 2001).

Small scale of production, scattered area under coffee farming, lack of quality saplings, pests esp. the stem borer and diseases infestations, lack of crop insurance, long gestation period, and limited functions of NTCD are the major constraints in coffee production in Nepal (AEC, 2004).

There are no proper marketing channels for selling coffee in the international market directly by farmers. There is a great need for a proper channel to market the coffee in the international market if the country is to gain sufficient amount of revenue (Rana, 2004).

The domestic market survey conducted by Helvetas-Nepal has shown that the main constraint for the growth of Nepali coffee in the domestic market is the lack of awareness of the availability of Nepali coffee among the consumers and those who know it lacks know-how on the appropriate methods of coffee preparation. Lack of research and development in coffee is the bottleneck to develop the coffee sub sector into viable industry for producers, processors and traders (Shrestha, 2004).

2.10 Value chain analysis

Value chain analysis is a tool that we use to define a development opportunity, looking at each discrete step in the life of a product, the players at each step, how value is added, and how much they earn for that value created (Piper, 2007, cited in Bastola, 2007). According to ACIDI/VOCA "Value chain" refers to all the activities and services that bring a product (or a service) from conception to end use in a particular industry from input supply to production, processing, wholesale and finally, retail. It is so called because value is being added to the product or service at each step. Taking a "value chain approach" to economic development means addressing the major constraints and opportunities faced by businesses at multiple levels of the value chain.

Value chain analysis is based on a comprehensive characterization of input-output relationships from grower to retailer, and the coordinating mechanisms that guide activities at each stage. It can include consideration of technical transformations of product, pricing, costs and margins, number and size of firms at each stage, barriers to entry, market power and the sharing of benefits from innovation, product differentiation and diversification (Cruz, 2003).

One of the challenges coffee producers have faced in the last 15 years has been the falling prices in the international market. Local institutions and producers' cooperatives have to take the initiatives which may include the implementation of quality standards, identification of direct buyers to ensure higher profit, and the certification of origin (Fromm and Dubon, 2006).

A value chain is a sequence of related business activities (functions) from the provision of specific inputs for a particular product to primary production, transformation, marketing, and up to the final sale of the particular product to consumers. Enterprises are linked by a series of business transactions in which the product is passed on from primary producers to end consumers. According to the sequence of functions and operators, value chains consist of a series of chain links (or stages). Value chain constitutes an economic system organized around a particular commercial product. The coordination of business activities in a value chain is necessary to provide final customers with the right quality and quantity of the product. The value chain therefore: connects the different yet related business activities

(production, transformation, marketing, etc.) necessary for serving customers, and joins and coordinates the enterprises (primary producers, processing industry, traders, etc.) performing these business activities (GTZ, 2007).

Value chain analysis is the process of chain upgrading and value chain promotion. Value chain mapping is drawing a visual representation of the value chain system. Maps identify business operations (functions), chain operators and their linkages, as well as the chain supporters within the value chain. Chain maps are the core of any value chain analysis and therefore indispensable. Quantifying and describing value chains in detail includes attaching numbers to the basic chain map, e.g. numbers of actors, the volume of produce or the market shares of particular segments in the chain. Depending on the specific interest, specific chain analyses “zoom in” on any relevant aspect, e.g. characteristics of particular actors, services, or the political, institutional and legal framework conditions enabling or hindering chain development (GTZ, 2007).

A “value chain” encompasses all the activities involved in making a product and delivering it to retail and the consumer. A value chain analysis extends the traditional supply chain analysis by locating values to each stage of the chain (Gilbert, 2006).

Economic analysis of value chains is the assessment of chain performance in terms of economic efficiency. This includes determining the value added along the stages of the value chain, the cost of production and, to the extent possible, the income of operators. Another aspect is the transaction costs, which are the cost of doing business, collecting information and enforcing contracts. The economic performance of a value chain can be “benchmarked”, i.e. the value of important parameters can be compared with those of competing chains in other countries or similar industries (GTZ, 2007).

2.11 Institutional involvement

The number of coffee growers is increasing day by day and also the production due to the governmental as well as nongovernmental organization’s interest on coffee. The CoPP/Helvetas, AEC, Coffee Producers Association, NTCDB, Nepal Tree Crop Global Development Alliance, Winrock International are the promoters of Nepalese coffee (Rana, 2004). Besides Ministry of Agriculture and Cooperatives (MOAC), NARC, the Nepal Coffee Producers Association (NCPA), and other private sectors are involved in the promotion of coffee (Bajracharya and Pathak, 2001).

There has been some degree of efforts from government and non-government sectors to support the coffee sub-sector by motivating farmers to grow coffee. Local Initiatives Support Program (LISP) and the Sustainable Soil Management Program (SSMP) under Helvetas-Nepal have been implementing coffee related activities in Palpa, Syangja, Parbat, Kavre and Sindhupalchowk districts. A few development organizations and projects like Gulmi-Arghakhanchi Rural Development Project (GARDP), Winrock International, and DANIDA are promoting coffee for crop diversification and income generation, contributing to the expansion of the coffee production area (CoPP, 2003).

CHAPTER THREE - RESEARCH METHODOLOGY

This section presents the research method, research approach and research strategy used in the study and the different data collection and analysis methods use to fulfill the objectives of the research. It includes description of the study area, the sampling procedure used and methods of primary and secondary data collection. Finally it concludes by discussing data analysis' tools.

3.1 Selection of study Area

This study was carried out in the Sangachok VDC of Sindhupalchowk District of Nepal. This study site lies in the central developmental region of Nepal and represents a potential coffee production area in the central development region. This is the mid hill region of Nepal. This area was purposively selected because it is near to the capital city Kathmandu, a very suitable area for coffee production and near to the highway.

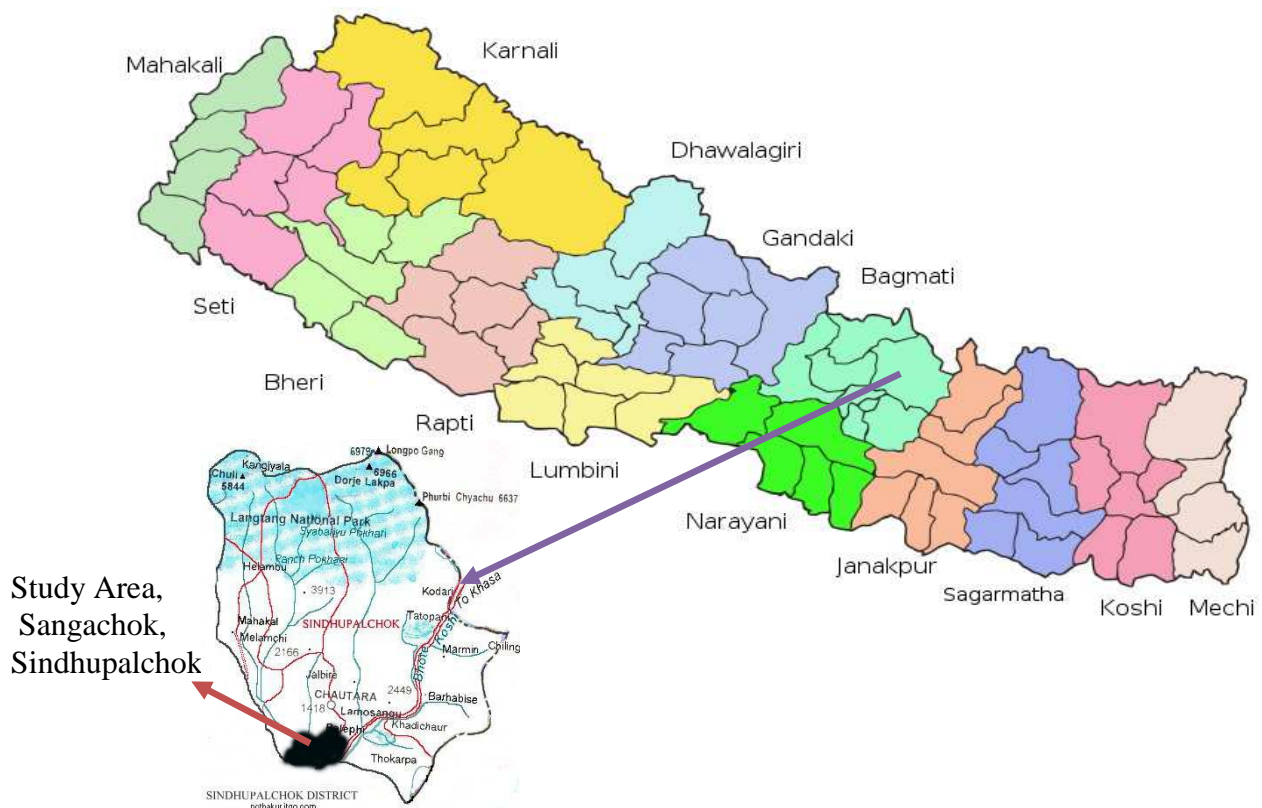


Fig. 3.1 study site

Source- ncthakur.itgo.com/.../sindhupalchowk_district.jpg

3.2 Study Design and strategy

This research is an empirical, cross sectional and has both a qualitative and a quantitative approach based on data collection from a survey and desk study of literature, documents and internet sites. In a qualitative approach, the research aims to gather an in-depth understanding about the effects of collective marketing in coffee value chain of small holders. Quantitative research is the investigation of quantitative properties or numerical parameters related to the marketing and value shares. The data were collected from the different stakeholders and a case study (interview) design is adopted to collect it. The questionnaire interview is the main data collecting instrument. Besides, the field observation and case study were carried out to collect the further supportive information. The whole research work took a total of three months. The desk research was conducted in the month

of June and early days of July while the field work for the study was carried out from 18th of July to 12th of August 2009. Data analysis and write up was done afterwards till 10th of September 2009.

Desk study and case study research strategy were used to collect information. An extensive desk study was done on the following themes from the experiences of similar farmers in Nepal and other countries, economics of coffee marketing, collective approach marketing, impact of collective coffee processing and marketing for small holder farmers from different perspectives (income, power relations etc) and coffee value chain.

The sources of the information were reliable internet sites, literatures and documents and own experiences.

3.2.1 Case study

Case studies were carried out as main research strategy for generation of primary data. The strategy is chosen because of the profound insights/information/ needed on the topics posed in the research questions. It is an in-depth labor and time intensive study that involves a small number of research units from the total research population. The case study was carried out by questionnaires which consisted of semi structured questions. The questionnaires have a focus on processing and marketing in the coffee chain. To adapt the questionnaire to the situation on-site and test its applicability and clarity, pre-tests were carried out. The pre-testing was done on 4 respondents near to study area. The suggestions given during the pre-testing were incorporated in the final interview schedule. Different semi-structured questionnaires were used for the interviews of different actor groups in the chain. One questionnaire for smallholder group, one for exporters, wholesalers and retailers were prepared. All questionnaires were prepared in English and translated in Nepali. The case study covered coffee smallholders, the total of 15 smallholder coffee producers, two from each chain actors were interviewed. Chain supporters, the district coffee producers association and district agriculture development office were also interviewed for the case study.

3.3 Sampling Procedures and Data collection

Sample respondents were selected through random sampling procedure. The first Sangachok was selected on the basis of concentration of coffee growers and coffee producer in group. Two groups from that VDC were selected. The first group was Abiral Bagdachha Indrawati coffee producers' group, that has comparatively bad transportation facilities and is two km far from highway. The other group was Kalleri Danda coffee producers' group near to the highway. All the sampled farmers were coffee growers and member of coffee production group. The selected farmers were household heads because it was assumed that he/she is a decider in household decision. Two coffee pulpers were selected each from group and two traders were selected who came to these places to buy the coffee. Two supportive organizations for coffee production, promotion and marketing were selected. All the details of sample size and population are described in the table.

Table 3.1: Table of respondents

Interviewee data collection	Types of questionnaire	Type of information needed	Justification
Case study 1 of 15 smallholder farmers	SSI	Economics of coffee, coffee value chains, pros and cons of collective marketing, processing, changes due to collecting processing and marketing.	Due to the time constraint, only 15 smallholders were interviewed.
Case study 2 of different chain actors(2 from each category)	SSI	Economics of coffee, their position in chain	Only 2 actors from each group of actors were interviewed.
Case study 3 of chain supporters (2 organizations)	SSI	Role in coffee chain, collective marketing	SAHEC and District Agriculture Development Office were interviewed.

3.4 Sources of information

3.4.1 Primary source: coffee producers, coffee processors and traders, supporters and key informants through observation, interview and case study.

3.4.2 Secondary Source: Different institutes and organization such as Marketing Development Division, Ministry of Agriculture and Cooperatives, Central Bureau of Statistics, Agro Enterprise Center, Nepal Tea and Coffee Development Board, Trade Promotion Center, Nepal Coffee Producer's Association, DCPA, Coffee Promotion Project (CoPP), SAHEC-sindhu, District Agriculture Development Office of related districts were the sources of secondary information. Other different secondary sources included different related cooperatives as well as various governmental and non-governmental organizations working for coffee promotion and development.

3.5 Methods and techniques of data analysis

Both the primary and secondary information collected from the field survey and other methods were coded, tabulated and analyzed according to the objective of research carried out using the following tools such as: value chain analysis tool, SWOT, statistical software for a descriptive statistical analysis of the recorded data, particularly with regard to profit distribution, value shares of chain actors by using Micro-Soft Excel.

3.5.1 Marketing margin and producer's share

Marketing margin is the difference between the farm-gate price and the retailer's price, which will be calculated as follows:

$$\text{Marketing margin} = \text{Retailers price } (P_r) - \text{Farm gate price } (P_f)$$

Similarly, producers' share is the price received by the farmer expressed as a percentage of the retail price, that is, the price paid by the consumers. It can be calculated by the following formula:

$$P_s = (P_f/P_r) \times 100$$

Where,

P_f = Producer's price (Farm gate price)

P_r = Retailer's price (Excluding all value added costs during processing and marketing)

P_s = Producers' share

3.5.2 Value chain analysis

The value chain of coffee was analyzed and the price spread was calculated.

3.5.3 Index of marketing problems, advantages of collective marketing and coffee processing.

Scaling techniques provide the direction and extremity attitude of the respondent towards the proposition. Farmers' perception on the importance given to the advantages of collective marketing, processing of coffee and marketing problems are indexing by different points of scaling. The index of importance was computed by using the following formula:

$$I_{imp} = \sum (s_i f_i / N)$$

Where,

I_{imp} = Index of importance

\sum = Summation

s_i = Scale value

f_i = Frequency of importance given by the respondents

N = Total numbers of respondents

For e.g. five point scaling technique comprising most serious, serious, moderate, a little bit and the least serious using scores of 5, 4, 3, 2, and 1 respectively. The same formula given above was used to find the index of importance of constraints.

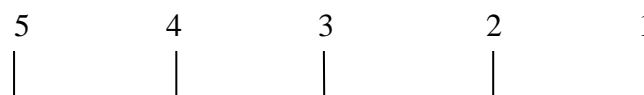


Fig.3.2 Scale for level of indexing

3.5.4 SWOT Analysis

The SWOT analysis tool was used to find out the strength, weakness, opportunity and threats of collective marketing.

CHAPTER FOUR - RESULTS AND DISCUSSIONS

This chapter presents the findings of the different interviews and case study carried out with farmers, traders, and institutions supporting to accelerate the coffee production and marketing. The findings are related to the sub questions of the research. It presents the existing marketing system, status of collective marketing system, processing and costs of coffee production and value chain of coffee. It presents the value shares among different chain actors. This chapter also analyses the results of the study. The analyses are based on the findings in relations to other information put forward by other people as mentioned in literature review.

4.1 Study site

The study was carried out in Sangachok VDC of Sindhupalchowk District of Nepal. This study site lies in central development region of Nepal and represents a potential coffee production area in central development region. The study site is South-East facing hilly area where commercial coffee cultivation has introduced in 2004 but most of the farmers were producing coffee traditionally since last 7/8 years. Sangachok VDC is 2 KM off from the highway and about 85 KM far from Kathmandu, the capital of the country. It is a typical hilly region of Nepal and height of that place is 850-910 masl. The average rainfall of sindhupalchok is 1615 ml per year (Annual agriculture development program and statistical booklet, Sindhupalchok, 2007/8).

4.2 Cropping pattern

The main crops grown in the research sites were rice, finger millet and maize with other crops like legumes, Coffee, Ginger, fruits (Banana, Guava, and Avocado). Very few of the respondents were also found to be growing wheat and buckwheat. In khet land majority of the respondents were growing only one crop i.e. rice in rainy season and in the remaining period of the year the land was kept fallow and used for foraging the livestock. Only few farmers are growing wheat and mustard in winter season.

In most of the bari land maize was grown in the rainy season followed by finger millet. Some of the respondents were found to cultivate vegetables after finger millet for market purpose. But nowadays most of the farmers planted coffee plant in bari land, in first 1-2 years they planted maize crop with coffee plantation. They were converting to the coffee plantation land. They used fruit plants like Guava, Banana, papaya and Avocado as shade tree. Some of them used timber plant like Chilaune (*Schima wallichii*), Bakaino (*Melia azedarach*).

The major cropping system found in bari land in the research site were:

Maize – finger millet – potato
 Maize – finger millet – vegetables
 Maize – fallow
 Maize/finger millet – winter season crops
 Maize/finger millet – fallow

In the first year and second year of coffee plantation, the cropping pattern in bari land was

Coffee/maize/ shade plants

After third year

Coffee/Ginger/ shade plant
 Coffee/legumes/shade plants
 Coffee /hot pepper

The major and predominant cropping system in khet land in the research sites were:

Rice – fallow
 Rice-wheat-fallow
 Maize-Rice –fallow
 Rice-vegetables

4.3 Land type and holding

The land available at the research site was categorized into two categories based on their use namely khet land, bari land. Khet land denotes the low land which has the irrigation facility and rice is transplanted; the un-irrigated and upland where rice cultivation is not possible is categorized as bari land where finger millet, rainy season maize, coffee and other plantation crops like Avocado, Guava, Papaya are the main crop. The land used for fodder, forage and fruit orchard is categorized as forest land which is also on bari land. In that land almost all farmers from the research site planted the coffee. Farmers are growing rice as a major crop in khet land maize and coffee as major crop in bari land.

Table 4.1: Average land holdings size of farmers in research site

Land type	Area in Ha
Low land (khet land)	0.29
Upland (bari land)	0.29
Total land	0.58

Source: SAHEC-Sindhu

According to the MOAC, 2008; the average land holdings of Nepalese are 0.8 ha. From the result the average land holding of respondents are lesser than the national land holding size. The 50 % of the land is bari type, all the farmers prefer bari land to plant the coffee. Most of the farmers finished land by planting coffee. They are thinking to plant coffee in community forests in group, for that they need permission from government. In low land or khet type, no one plants the coffee. They thought it is only for rice because khet is irrigated and productive land.

4.4 Coffee production trends

From the field study, 80% respondents had planted before the formation of group but in a very small amount. Some of them planted coffee by buying the coffee saplings from vendors at least 20 years ago. They planted coffee not for commercial purpose at that time.

After the formation of the group all the respondents planted coffee at a large scale. All the farmers increased the number of coffee plants on their land and new farmers started to plant. In the last 3-4 year all the farmers planted coffee on their main land also, before they were planted only on marginal land, bank of stream and in forest land. 26 % of respondents are still increasing the number and area of coffee.

Table 4.2: Area and production of coffee before and after group

	No of plant before group	No of coffee plant after group formation					
Year	2003	2004	2005	2006	2007	2008	2009
Average no of coffee plant	8	54	90	123	155	176	193
Average production (fresh cherry in kg)	41	271	454	616	656	681	729
Average area in m ² Per house hold	33	217	359	494	621	703	774

Source: field survey, 2009

The production areas and the total productions were increasing year by year. Before group marketing there were only average 8 plants in each households. But now they have on average 193 coffee plants and the area was also increased from 33m² to 774 m². The area is increasing at decreasing rate due to some farmers finished their land by planting coffee. The production amount also increased from 41 kg fresh cherries to 729 kg. They increased the coffee production area due to collective marketing which helps to strength the farmers bargaining power; they have sustainable market and ensure payment on time.

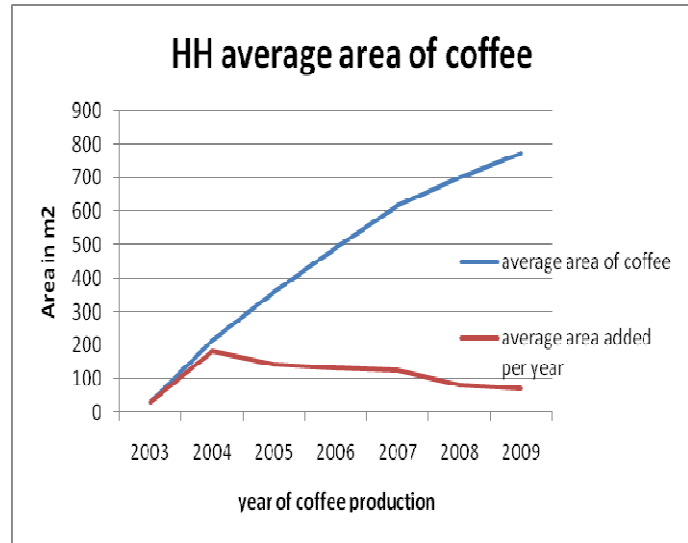


Fig. 4.1: Area of coffee per house hold
Source: own field study, 2009

The production trend of coffee in Nepal is also growing rapidly, 135 ha in 1995 to 1309 ha in 2007 and the production is 14 mt green bean to 218 mt in 2007. (NTCDB, 2008/9)

The numbers of coffee farmers are also increasing and they are organized in coffee producers group for production and marketing of coffee. There are about 13000 farmers organized in 600 coffee producers group (CoPP, 2008)

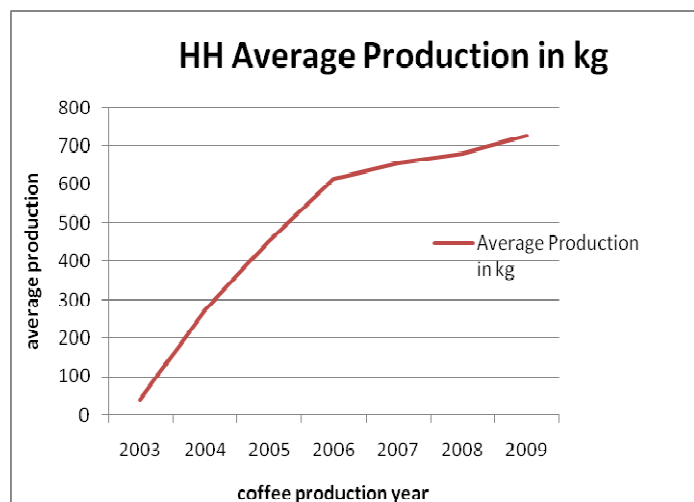


Fig. 4.2: Production in kg per house hold
Source: own field study, 2009

4.5 Cost of coffee production

It was very difficult to calculate the cost of coffee production. Coffee is a plantation crop. It does not give a produce in the first 2 years but thereafter it gives a continuous production. Nepalese smallholder farmers did not record any data about labour, manure and some inputs. Therefore secondary data based on a study conducted by CoPP in three districts viz. Palpa, Kavre and Lalitpur in 2004 was used to calculate the cost of production of coffee cultivation. Although, the cost component in coffee production include depreciation on the fixed investment, fencing, equipment, irrigation system, Nepalese farmers do not use all those items as coffee is considered to be less cared crop. Fixed costs existed as cost of seedlings only. Variable costs included cost for labor used in different intercultural operations like plantation, manuring, training, pruning, weeding, mulching, harvesting, grading, etc. Thus the annual cost benefit was calculated up to the first 13 years of cultivation. The detailed of cost and return of coffee cultivation are presented in annex 4.

The findings showed that the average variable cost of production per ropani (500 m²) per year was Rs. 4,194 while average gross return was Rs. 14,148 at Rs. 27 per kg of fresh cherries with average production of 524 kg fresh cherry per ropani per year and with no

production in the first two years. The average variable cost of production of fresh cherry from this came to be Rs. 8.00 per kg. The gross margin of coffee cultivation thus, was Rs. 9,954 per ropani per year. The average gross margin of the fresh cherry was thus, Rs. 19 per kg.

4.6 Coffee Marketing

According to the respondents, farmers sold 95% of their produce to traders (market outlet), while keeping 5% for own consumption. They prepared filter coffee by using traditional method. All the farmers got training how to prepare filter coffee in their own home by using simple techniques and equipments. After the formation of a group all the farmers sell their coffee collectively. Marketing of coffee is done by the group but in two groups there were different types of group marketing.

In the Abiral Bagdacha Indrawati coffee producers group, all the members sold their fresh cherry to the pulper operator. All the processing was done by coffee pulper and sold dry parchment to the trader.

But in the Kalleri Danda coffee producers group, all the farmers harvested fresh cherry and they went to the pulping center. They processed themselves and they took pulped bean to their home for drying in the sun to prepare quality dry parchment. They sold their dry parchment individually but to the same trader in the same time. They were informed about date and time of trader when he came in village and all the farmers gathered their dry parchment and sold it to the traders. All the respondents from both groups preferred the trader to come to the farm gate because they did not have a vehicle for transport and to take the coffee to the traders place they would need more labour. In marketing of coffee, the marketing functions are described below:-

4.6.1 Price determination

Before the formation of a group only traders decided the price of coffee. Farmers were not organized in groups, all sold dry cherries and they did not know the price of the coffee in market and they sold their dry cherry at the price of the traders offered. After formation of the group the price was determined by negotiation. Farmers and traders negotiated to determine the price. And also farmers knew about the price of coffee in market by different support organizations. They can have more influence on the price than previously due to the group. From the last year, the price was determined based on the minimum price set by the National Tea and Coffee Development Board. NTCDB that had fixed the minimum price of coffee for the fiscal 2006/07 starting mid-July. The price of A grade dry cherry coffee at 75 Nepali rupees (1.02 U.S. dollars) per kg, B grade coffee at Rs 55 (0.75 dollar) and C grade coffee at Rs 30 (0.41 dollar) per kg and Rs 25 (0.35 dollars) per kg for the fresh cherry coffee with 56 percent standard of the pulped oily parchment. Likewise, the board fixed Rs 130 (1.78 dollars) per kg for the parchment coffee with 12 percent moisture (NTCDB, 2007). For this year the price has slightly increased, Rs 27 (0.36\$) for the fresh cherry and for dry parchment Rs 142 (1.9\$).

4.6.2 Market information and logistics

Before all the coffee farmers were out of contact with the coffee market and they did not get any information about the market price of coffee and also about the quantity and quality of coffee. 20% farmers from the group have coffee plants since the last 20 years and 40% farmers have coffee plants since the last 8 years and 20% farmers have coffee plants since the last 6 years. Before the groups, in some year they harvested coffee and put it in jute sacks but they could not sell their coffee due to the information gap between trader and farmers. These coffees were rotten or eaten by pests in the jute sacks. Farmers did not give more attention due to the less important. 25% respondents did not harvest their produce for

2 year due to the lack of traders and markets. 67 % of farmers sold their produce to the traders at farm gate or some years by taking to the next district. 33% of the respondents did not sell their produce when traders did not come to farm gate. If traders would come to farm gate, all the farmers sold their product to traders in traders' price. At that time they did not know how to make filter coffee traditionally. In some years traders from next District Kavre came to buy coffee, but they gave nominal price for coffee. They did not know about the coffee price and the market demand and only one trader came in that area which also created a difficult situation for farmers. In some years due to nominal prices some farmers took their coffee to the next district to sell at a better price. Logistics were also difficult due to the low volume of the product, if traders came to villages they arranged themselves. If farmers brought their product to the local market in next district, they had to manage; they put coffee in jute sacks and took it by bus to the market.

After formation of groups, all the farmers were organized in groups. They got lots of training about how to produce; process and market the coffee. Every group organized meetings every month at the same date and time. In the meetings they discussed about new news they heard and also decided to go to the government organization and nongovernmental organization for information about coffee production and marketing. Some developmental organization and governmental organization helped farmers in information transformation. Now farmers collected all their coffee in one place and trader came to that place. Due to that traders gave better prices to the farmers because of larger volume.

4.6.3 Quality maintenances

Before the groups all the farmers were not aware about the quality of coffee. They harvested all sizes, colors and shapes of coffee together and put in the same bag. But after formation of the group, they were aware about the coffee quality, because traders refused to take the low quality of dry parchment. It was also easy to the maintain quality of coffee in groups; all the members of groups got same kinds of tools, equipments, planting materials, same variety, and also followed the same types of cultivation practices. There was still a problem of quality consistence because the first harvest and last harvest of coffee are not good enough for market. Farmers mixed it also with the good one. In the time of pulping they put all the coffee in water and avoided the floated beans from water.

4.6.4 Market facilitation

After group formation market facilitation was done by a NGO -Sustainable Agriculture Healthy Environment center- Sindhupalchok (SAHEC). But before the groups there was no reliable market for coffee, farmers had small amount of coffee and traders did not show any interest for small amount due to time and logistics. Farmers had also problem to take small amounts to the market. Therefore some year they did not harvest and sell their coffee.

There is one market facilitation committee (MFC) formed by 10 pulpers, 2 highest producer farmers and 1 member from SAHEC- Sindhu. They formed that committee in mid 2009 and it did not start work properly. But they decided their work will be to get maximum price for farmers, the creation of a sustainable market, quality uniformities and payback on time. They are going to certify coffee by an internal control system of coffee certification (ICS) system. From this year they started to collect fund for ICS certification system. They collected Rs 10 from per Kg sold dry parchment. Therefore the pulper operator and the farmer got only Rs 160/kg of dry parchment.

4.7 Marketing chain

The marketing of coffee encompasses all the activities being performed in moving coffee of different forms from producers to the hands of ultimate consumers. The producers, pulper

operators, processors and exporters, and retailers are the main actors of coffee marketing in Nepal. The market of coffee is small and thus, the channel is not well developed; it is still in primitive stage. There are no intermediaries existing in the market and traders have themselves to do all the marketing activities. There was no wholesale market and only retail markets exist at present.

Coffee marketing starts from the producers. Generally, the ripe fresh cherries are sold to the pulper operators at the village or they pulped. After pulping, the dry parchment is collected by the processors. Processors, after various processing activities, sell their produce to the retail market, such as the domestic market and international market. The domestic markets include the departmental stores, hotels, restaurants and supermarkets mostly in the Kathmandu valley while the latter includes countries like Japan, German, Italy, UK, USA, Holland, Australia, and etc.

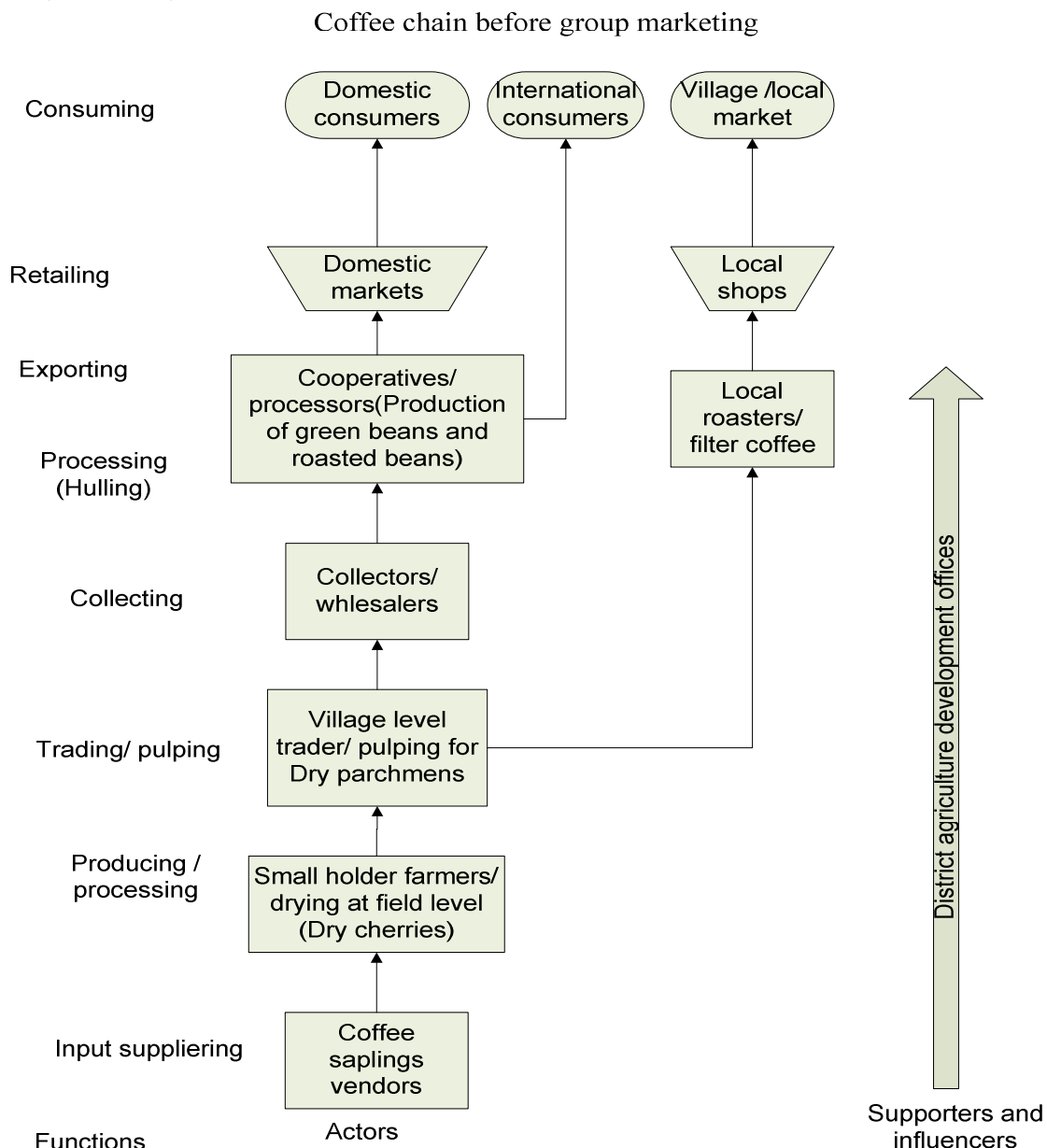


Fig.4.3: Coffee value chain before group.

The present Coffee value chain of Sangachok in Sindhupalchok

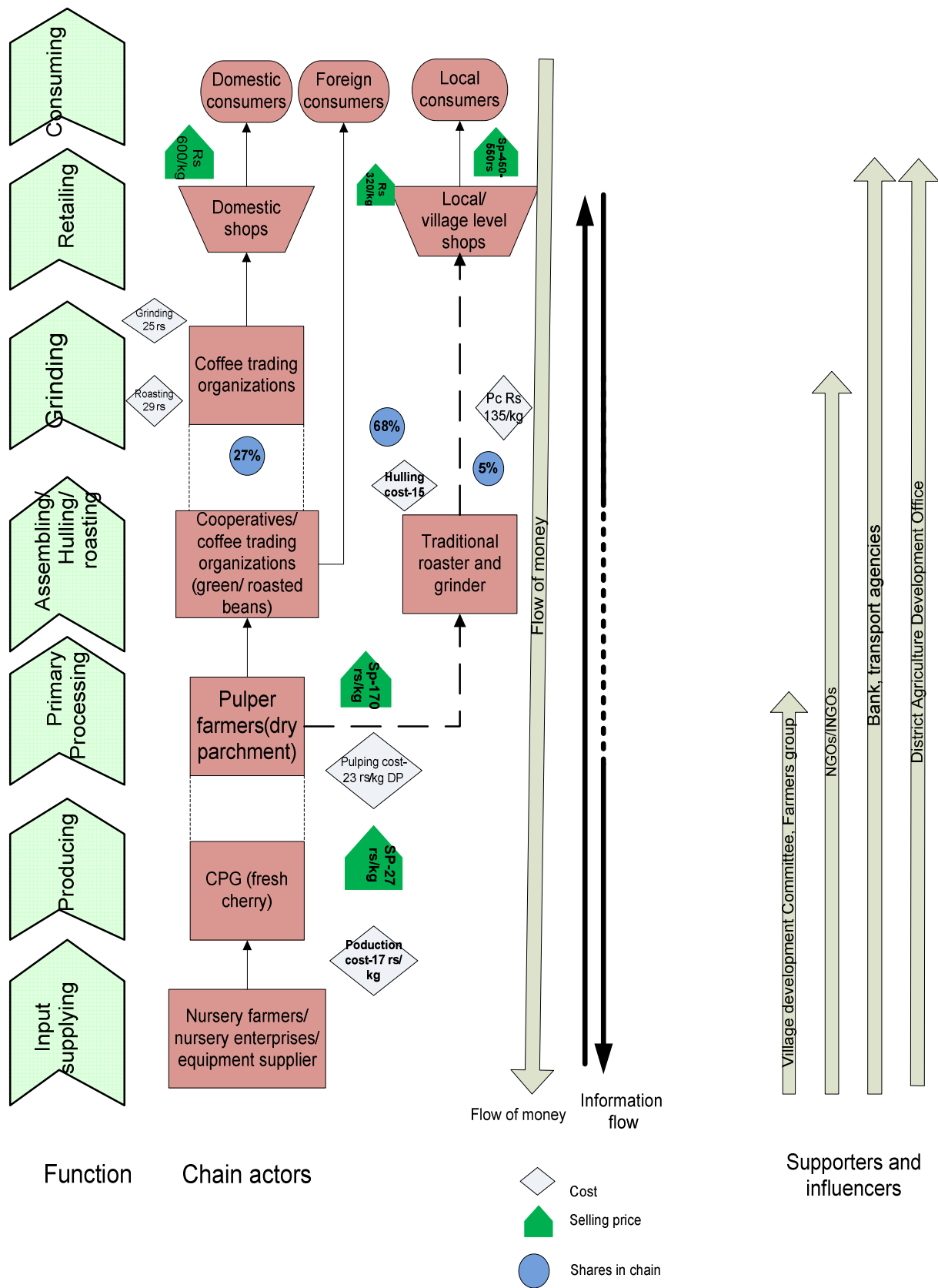


Fig.4.4: Present coffee value chain

The actors and supporters of present coffee value chain are described below:

Input suppliers

The main input for coffee production is the coffee sapling. Manure and pesticides are also needed for coffee. Before the group there was not nursery in the village, some farmers bought saplings from vendors. Now coffee saplings are provided by coffee nursery from the same village and insufficient numbers of saplings are taken by neighbor villages and districts. The District agriculture Development Office provided 50% subsidy on coffee saplings for coffee producer group members. It costs Rs. 8 per sapling. Farmers have to pay only Rs. 4 per sapling. Almost all the farmers have also live stocks. They used manure from their own production and some prepare compost manure near their field for coffee. Farmers also prepared botanical pesticides in their home by using *Melia azadirach*, *Artimisia vulgaris*, *Azadiracta indica*, *Adhatoda vesica* and urine of animals. Local agro vets provide pesticides.

Producers

In Sangachok VDC there are about 200 farmers organized in 6 coffee producer groups. Almost all the farmers are smallholders. Some farmers are not the members of collective marketing but they sold their coffee to the pulper operator, the member of group.

Pulper operators/Processors

This is the most important stage of coffee bean production which is directly concerned with the quality of final product i.e. green beans. Major activities in the process of bean production are carried out at this stage. The activities are sorting, pulping, fermentation, washing and drying. The cost involved at this stage mainly constitutes the labor wages involved in the different operations like pulping, fermentation, washing and drying. In coffee there are two types of processing, primary processing on farmers level and final processing on central processing level. In the research area farmers started to pulp the cherry after group formation. In Sangachok all the farmers/ pulpers do the wet processing. Half of the farmers harvest ripe cherries and sell them to the pulper operator. Other half of the farmers harvest fresh cherries and process them to dry parchment. The pulper operator also buys fresh cherries from producers out of the coffee producer group and processes them to dry parchment. The price of fresh cherry is Rs. 27/kg and the dry parchment is 170/kg. The conversion ratio of fresh cherry to dry parchment is 4-4.5:1, it depends up on the height of production area. The processing cost to prepare dry parchment is Rs. 23/kg dry parchment or Rs. 5.3/kg fresh cherry. Farmers themselves prepare dust coffee for own consumption. Pulper operators prepare dust coffee for home consumption as well as for the local market. The price of dust coffee in local market is about 450-550/kg dust coffee. The conversion ratio of fresh cherry to dust coffee is about 7:1 and the cost of dust production locally is about Rs. 135/kg of dust or about Rs. 19.3/kg fresh cherry.

Assemblers / Traders

Traders buy dry parchment from the farmers or from the pulper operators. All the dry parchments were gathered in the place of pulper operator and they collected it and transported to the place of final processing. The trader has own vehicles. In case of the farmers producing dry parchment, all the farmers are noticed and farmers collected their produce in one convenient place and sold it to the traders. In the research area assembler is the central processing organization (Gulmi cooperative) which is involved in exporting of coffee and preparation of final product. The trader manages the transportation himself. They buy the dry parchment at Rs.170/kg.

Central level processors (Hullers and Roasters)

The traders bring the collected dry parchment to the centre. They prepared green bean from dry parchment. They are involved in the exporting of green bean. They also prepare roasted

bean and dust coffee. The processors/marketers are involved in the processing and packaging of coffee in different size packages, domestic marketing and export etc.

Exporter

Coffee is exported from Nepal to the overseas countries on a regular basis. The volume of export is slowly picking up. For the coffee export extra costs are the fumigated container, ventilated container and detention charge. In Nepal the three functions trading, central level processing and exporting are done by the same company. In study area it was done by Gulmi cooperative organization.

Retailer

Mainly retailers in domestic market are supermarkets, open shops and local shops. Their roles in value addition are transportation, storage and decoration of coffee packets in shops.

Consumer

Nepali coffee is mostly consumed by domestic consumers and foreigners in Nepal. Most of the foreigners prefer organic dust coffee in Nepal. Hotels and schools are also consumers of dust coffee. Coffee is a new product for Nepalese consumer therefore most of the foreigners are the important coffee consumers in the domestic market.

Value addition in the coffee chain

In the coffee chain, value addition starts from the farmers, they produce fresh cherry, some sell fresh cherry to the pulper operator. The fresh cherries are processed to dry parchment.

After that stage, the dry parchment is collected and transported to the centre. They prepare green beans, roasted beans and grounded dust. The main value addition in that stage are, packing in sacks, transportation, storage, moisture maintenance, hulling (preparation of green bean), roasting, grinding and packaging. But green beans are directly exported to abroad. Roasted beans are also packed and marketed in the domestic market.

Information flows (intra-chain info; product info, price info, market info)

The information about quality and quantity flows from consumer to the producer. The flow of information shows little gap between traders and pulper operators/producers. The money flows is from consumers to the input suppliers. Only traders know about international markets. Groups get price information from support organizations, newspapers, and neighbor groups. Government also disseminates the information via newspapers. Traders do not share the export prices to the farmers.

The chain supporters and influencers

The main chain supporters in the study area are the District Agriculture Development Office, which provides 50% subsidies in saplings, organizes training to the farmers and a demonstration tour to the other coffee producing districts. Coffee Promotion projects/ HELVETAS Nepal is the another main supporter, which provides training on planting, intercultural operation, harvesting processing and marketing to the farmers and gives pulping machine to the groups. The Sustainable Agriculture and Healthy Environment Centre-Sindhu (SAHEC-Sindhu), which is local development organization helps the farmers by providing training, facilitates the marketing of coffee and provides information on coffee. Village Development Committee (local Government) also allocates the money for training.

4.8 Value chain analysis

A value chain is a supply chain consisting of the input suppliers, producers, processors and buyers that bring a product from its conception to its end use. All the market participants of a marketing system, right from the processor to output market should be efficient enough to take market related decisions like processing technique, choosing buyers, mode of marketing, market destination to lead the coffee as an efficient business venture. Different value chains should be identified and strengthened through different interventions for efficient and well functioning of these values chains. Each step in the value chain must be examined, to include production, processing, distribution and marketing, as well as policy. The export of value added and a differentiated agricultural product opens possibilities for development and poverty reduction. There is evidence that small producers and exporters in developing can insert themselves successfully in agricultural value chains. According to CoPP, 2008 the chain comprised, the total production of green bean was 210 mt and 141 mt was exported (68%) and 69 mt (32%) was domestically marketed in 2008.

The followings were the three value chains identified in Coffee sub sector:

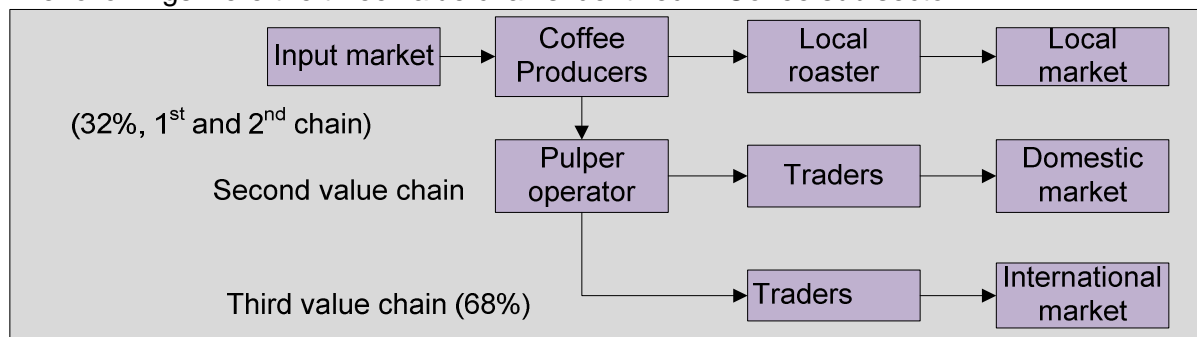


Fig.4.5: Different value chains of coffee sub-sector.

Note: the % indicates the amount of chains shares.

The different value chains of coffee are, from the input market, the produced fresh cherries go to the local roasters and ultimately consumed in the local market. It constitutes the first value chain. The second value chain consists of pulper operators, traders and the domestic retail market. The flow of coffees from pulper operators directly to the traders and finally to the international market completes the third value chain.

The price spread on these different value chains is shown in table 4.3. From the input market, fresh cherries are produced and sold at the price of Rs. 27 per kg. In the first value chain, the value of fresh cherry increases up to Rs. 52 per kg by locally roasting to supply in the local market. The value of fresh cherries increase in each subsequent value chains attain the maximum value in the second value chain where it is marketed in dust coffee form and the value has become Rs 72 per kg of fresh cherry.

Table.4.3: Price spread on different value chains of coffee sub-sector. (Rs. per kg of fresh cherry)

Value chains	Producers	Local roasters	Pulper operators	Traders			Domestic Market		International Market
	FC	GC	DP	GB	RB	GC	RB	GC	GB
First	27.00	52.06	-		-	-	-	-	-
Second	-	-	38.34	36.61	50.06	57.62	53.08	71.9	-
Third	-	-	-		-	-	-	-	45.09

Note: FC denotes Fresh cherry, DP denotes Dry parchment, GB denotes Green beans, RB denotes roasted beans and GC denotes ground coffee.

4.9 Market Shares

To calculate the marketing margin and value shares of producer's, secondary data from Bastola, 2007 and CoPP (processing and marketing cost) were used because traders were reluctant to reveal the price of the green beans they exported. It was difficult to get the price information and cost of processing from traders and processors.

About 7 kg of fresh cherries were used to produce 1 kg of ground coffee. The average processing cost to make ground coffee from fresh cherry was Rs 74 per kg, the packaging cost Rs 12 per kg and marketing and overhead cost Rs 11 per kg. This became Rs 97 per kg for processing and marketing cost. There was great variation of price among different brands of ground coffee. The price of ground coffee ranged from Rs. 500 to Rs. 1000 per kg. On simply averaging, the price of ground coffee in domestic market is Rs. 600 per kg. The total retailer price for 1 kg of ground coffee thus, became Rs 600 and purchased price for 7 kg fresh cherry is Rs 189 and processing and marketing cost became Rs 97. Processing cost became Rs 14 per kg of fresh cherry. Hence the final retail price per kg fresh cherry was Rs 86 per kg without subtracting processing and marketing cost, while subtracting processing cost it became Rs 72 per kg of fresh cherry. Then the marketing margin per kg fresh cherry was Rs 45. Producers share became 38 percent by subtracting the processing and packaging cost and 31 percent without subtracting the processing cost and packaging cost. The details of calculation works are presented in annex 3.

Table 4.4: Marketing margin and producers' share on ground coffee

Particulars	Ground Coffee
Marketing Margin (Rs)	44.90
Producer's share subtracting processing and marketing cost, %	37.55
Producer's share without subtracting processing and marketing cost, %	31.50

Source: own field study, 2009

In the above table the value shares of producer are calculated with processing and marketing cost and without processing and marketing cost. The value shares of different chain actors are calculated in table 4.5. To calculate the value shares in export chain of coffee, the retail price or consumer price was not available therefore only domestic chains value share is calculated.

Table 4.5: Value shares of different actors in domestic coffee value chain

Chain actor	Variable costs	Revenue Selling price	Gross income Revenue - cost	Added value Revenue – Previous actors revenue	Gross margin Gross income x 100 / Revenue	Value share Added value x 100 / Retail price
Farmers	17.00	27.00	10.00	27.00	37.04	31.50
Pulpers	28.73	40.07	11.34	13.07	28.30	15.25
Traders /huller	42.92	51.86	8.94	11.79	17.24	13.75
Roaster	56.95	60.57	3.62	8.71	5.98	10.17
Grinder	65.67	71.43	5.76	10.86	8.07	12.67
Retailers	72.96	85.71	12.75	14.29	14.88	16.67

Source: own field study, 2009

The percentage of value shares of different chain actors; producers or farmers group, pulpers, traders, roasters and retailers are shown in figure.

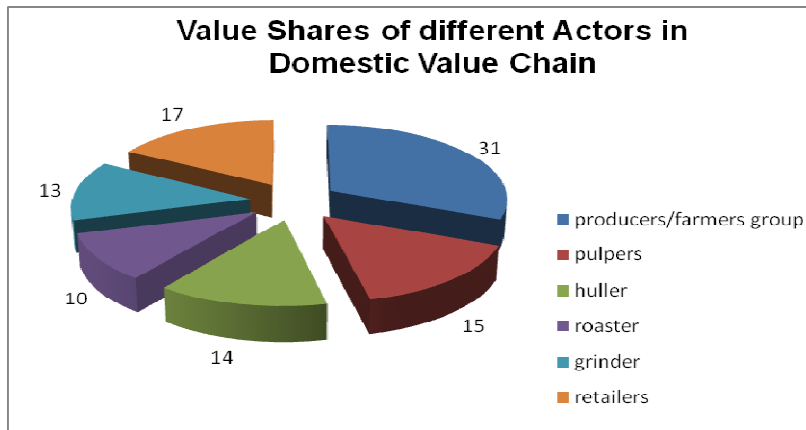


Fig.4.6- Value shares of actors in chain in %
Source: own field study, 2009

The highest share in domestic coffee chain is producers share 31% and the second is retailers share 17% and the lowest is the roasters share 10%.

The value share of producers in the local roasters' value chain is shown in the table 4.6.

Table 4.6: Value shares of producers on coffee value chain of local roasters' chain

Chain actor	Variable costs	Revenue Selling price	Gross income Revenue -cost	Added value Revenue – Previous actors revenue	Gross margin Gross income x 100 /Revenue	Value share Added value x 100 / Retail price
Farmers	17	27	10	27	37.04	37.8
Roaster/retailers	46.37	71.43	25.06	44.43	35.08	62.2

Source: own field study, 2009

In local the roasters' value chain sometimes all the processing activities were done by producers. But in most of the cases dust coffee was prepared by the local coffee pulper. The retail price of dust coffee in the local market is about Rs. 450- 550. The processing cost to prepare dust coffee is Rs135.61 or 19.37 per kg of fresh cherry.

In above value chain the producers share is only 31% but in that chain the producers share is about 38%. According to Chauhan, 1998, the price received by the farmers declined with the increase in the number of intermediaries or long marketing channels are the reasons for increased marketing cost.

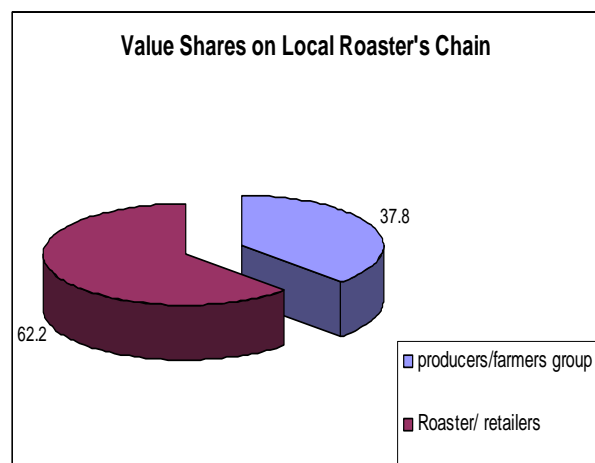


Fig.4.7 value shares on local roasters' chain

4.10 production, Processing and Marketing constraints in coffee

There was not severe production problem in the study area. There is a lack of irrigation facilities, during a long drought in the time of flowering; the production of fresh cherries will be low.

The coffee business in Nepal is facing many problems. Some problems are entirely related to producers, some to processors, traders and institutions, and others to all of the stakeholders of the coffee industry, directly or indirectly. The pulper operators had problems of drying after pulping cherries. They did not have wire bed for sun drying. Farmers and pulper operators did not have storage facilities. In processing, the processing cost was high

due low volume. To identify the major constraints faced by the producers, they were asked to mention and rank all the problems as they perceive before collective marketing.

Table 4.7: Indexing of coffee marketing problems

Problems in Marketing of Coffee	Index	Rank
Low volume	5.4	I
Transport	4.8	II
Pay back	4.7	III
Non uniform quality	4.1	IV
Information of market	3.6	V
Processing & storage facility	2.9	VI
Low productivity	2.3	VII

Note: Respondents were asked to tell problems in scales ranging from high to low by assigning 7 level scales. The scale values considered were 7 for high and 1 for low level problem.

According to the respondents the topmost constraint was the low production volume. This is followed by a lack of transportation facilities and high transportation cost due to low volume and the third one was payment ensure. Shrestha and Singh, 2007; stated that major constraints affect the domestic and international market negatively, these are, scattered and smallholder resources poor farmers with limited area under coffee and producing in marginal land under rain fed conditions.

4.11 Emergence of collective marketing

12 out of 15 (80%) respondents had coffee before group formation. They knew coffee is a very productive crop with a minimum input. At previously all the farmers planted in marginal or sloppy land at the boundaries of main land. They were interested in growing coffee but there was not a reliable and sustainable market. Some years traders did not come there and some year they came and took but did not pay in time. At that time all the farmers had to sell their product at price that was offered. They had only small amounts of coffee if they wanted to sell to the near market they had to pay more labour cost and transportation cost. One of the respondents told that, "Once the trader calls me, how much amount of coffee do you have? And I tell near about 120 kg of dry cherries. Do you know about your neighbor? I do not know. He tells only that small amount, I cannot come there."

They were looking for a sustainable market for their coffee, because there was no any guarantee of traders or markets. Therefore they were feeling group for coffee production and marketing. Due to the potential of coffee production in Sindhupalchok, different developmental organizations like the Coffee Proportion Project entered to the district for the development of coffee. That organization helped the local organization like SAHEC-Sindhu. The coffee farmers from the district formed a District Coffee Producers association. All these organizations helped the farmers to form groups. Both groups were formed by the assistance of the development organization SAHEC-Sindhu.

The purposes of group formation were lack of reliable market, individual has small scale of produce and scattered, low price, long payback interval and lack of market information.

4.12 Collective marketing for other crops

All the respondents told that there was no any collective marketing for other crops. In the study area other crops are grown only for home consumption. There were no any other crops grown for market, therefore they did not sell large amounts. Some of the respondents sold food crops like rice, maize and millet to the neighbor.

4.13 Advantages of collective marketing

All the respondents told that collective marketing is very good for them because now they do not have a problem of market. Before the group there was no reliable market. The advantages are described below:

Bargaining power

It has been discussed in coffee marketing 4.6.1 price determination part. Previously the market prices were determined by the intermediaries or traders and the helpless farmers were mere spectators force to accept, whatever was offered to them. They did not discuss more with trader due to lack of market. But nowadays they have bargained for and have achieved better prices for their coffee. If one trader did not give reasonable price they quit them and contacted with other traders. Now they could choice over traders. According to cooperative marketing in India, (http://www.world-agriculture.com/agricultural_marketing/cooperative-marketing.php), if the farmers join hands for a cooperative, naturally they will be less prone to exploitation and mismanagement. Instead of marketing they produce separately, they will market it together through one agency, which help to them strong bargaining with traders.

Increase profit

The co-operative can easily arrange for bulk purchase of agricultural inputs, like seeds, manures fertilizers etc. and consumer goods at relatively lower price and can then distribute them to the members. According to the respondents, all the things were done in group, they bought all the equipments and input together, which save the transportation cost. Only few people could do lots of things for whole groups, due to this they saved their time. In the time of marketing also all the members did not need to discuss with traders. Due to the accumulated volume of coffee from whole group, they have now economy of scale, which helped to increase the profit by lowering transportation cost, labour cost, storage cost.

Quality control

In group all the members bought input, training on cultivation practices and harvesting from same sources. They followed more or less same practices and produced also the more or less same quality of coffee. In the time of processing, all the farmers applied the same tool and techniques, therefore same quality of coffee could find from the group.

Payment ensure

After collective marketing they had large volume sold to the same traders in group. If the traders will not pay back on time all the group members gave pressure to the traders. Before group marketing only one farmer told trader about pay back but trader delayed due to less pressure. After the formation of group all the respondents told pay back was ensure and on time. Sometime they got payment recently and sometime after 2-3 weeks.

Sustainability of business

Before group marketing there were no specific traders and all the farmers could sell their products to everyone. At that time there were no reliable traders and market. After forming groups, all the group members sold their product fresh cherries or dry parchments together. Now most of the traders want to buy from group but groups now select them. Due to this nowadays there was sustainable market for coffee.

Initiation of Processing

The processing of coffee was started after establishment of a group. They got a pulping machine in group which provided the chance of processing. It is impossible to buy a pulping machine by an individual smallholder farmer because it is expensive and small holder farmer did not have large amount of coffee.

Information of market

All the respondents told that after group marketing, the information about market price, demand was easily available. The developmental organization provided the information to the groups. They also communicated to the other groups about market prices.

Time saving

In group all the members did not spend their time for marketing of coffee. They discussed and decided lots of things in meeting. Therefore they did not need a long time to search traders and market. Traders searched the group for coffee due to that farmers can save their time. One women farmer said, *"Before group marketing, I had near about 80 kg of dry cherries, that year trader did not come to village, I took that coffee to the next district, it took 5 hrs and trader did not give the whole payment on that time. I went again to take the payment. But now I sell the fresh cherries to the pulper operator in my village and I get payment also from him immediately or after few days, it doesn't take long time."*

Social harmony

They had regular meeting on every months. Sometimes they had training on group together. They collected fund on group and invested among group members. Members harvested fresh coffee cherry and took it to process or sell to the pulpers in village. Because of these things there were regular contacts among group members. That created social harmony and helpfulness among group members. Groups have also increased power; they could influence the local government. Last year due to the group pressure local government (Village Development Committee) allocated 20,000 Rs. for agriculture developments works.

Group saving and credit

In both group, there were regular meeting among group members. They discussed about coffee production and marketing in the meetings. They also discussed about problems they faced on coffee. They shared about information about market, prices of coffee in meeting. Before group, there was problem to get money for input; they have to pay high interest rate for loan to local money lender because there was a limited facility of bank. Now, they regularly collected fund in group also. In the Abiral Bagdacha Indrawati coffee producers group, there are 33 members and they collected about 150,000 Rs. They collected 50 Rs. per months. In Kalleri Danda coffee producers group, they collected 60,000 Rs. They collected 25 Rs. per month. These collected funds were invested among groups at low interest rate. Due to that they can solve the problems in the time of input buying. One member of group said, *"When we did not have group, we have to take loan from village money lender with high interest rate (36% per year) but after group we have collected fund in group, we get credit at cheap interest (10% per year)."*

Social advantages

After the formation of groups, all the respondents told that, the government and developmental organizations provided more training and extension services than previous. It is very easy and effective to provide training to the groups. Organizations help groups rather than individuals. They provided some kinds of equipments like pulping machine, grinder to the groups. In study area group got one pulping machine from CoPP and District Agriculture Development office offered 50% subsidy in coffee saplings to the group members.

In addition to all these advantages, the collective marketing system arouses the spirit of self-confidence on group members.

According to Robbins et al. 2004, the benefits of collective marketing are smallholders improve the economics of scale by collecting the produce together, lower the transaction costs, increase the quality control, more access to credits, incentives to increase production, obtain communal equipments and services and social advantages.

The advantages of collective marketing are better access to markets, technologies and inputs at affordable prices, better prices for produce, and development of business skills. (Reddy et al.2007). The finding of study is similar to the literature review. In group marketing producers have opportunity to process and market their crops, maximize income, cost-saving or reduce the transaction costs,

To identify the rank of advantages of collective marketing, farmers were asked to rank the advantages on hierarchically. They were informed, gave the higher mark to the most important advantages and lowest to the less preferable one. The result is shown in table. The structured question was prepared before going to the respondents with the help of literature, therefore only 5 advantages were asked.

Table 4.8: Indexing of Advantages of collective marketing

Advantages of collective marketing	Index	Rank
Bargaining power	4.2	I
Pay back ensure	3.8	II
Increased profit	2.9	III
sustainable market	2.1	IV
Time saving	1.9	V

Note: Respondents were asked to tell advantages in scales ranging from high to low by assigning 5 level scales. The scale values considered were 5 for high and 1 for low level advantages.

From the above table, the most important advantages of collective marketing according to the respondents is increase in bargaining power to the producers, followed by pay back ensure.

4.14 Producers' position after collective marketing

In the coffee chain the position of smallholder farmers were just producers before collective marketing. There was no any provision of pulping before collective marketing, farmers picked fresh cherry and put in sacks and sold dry cherry which fetch low price comparison to pulped cherry. That is due to the lack of pulping machine before collective marketing there was no any pulping machine. They had little amount of coffee individually and traders came to them and bought coffee on trader's price. There was no bargaining for price and traders did not pay on time.

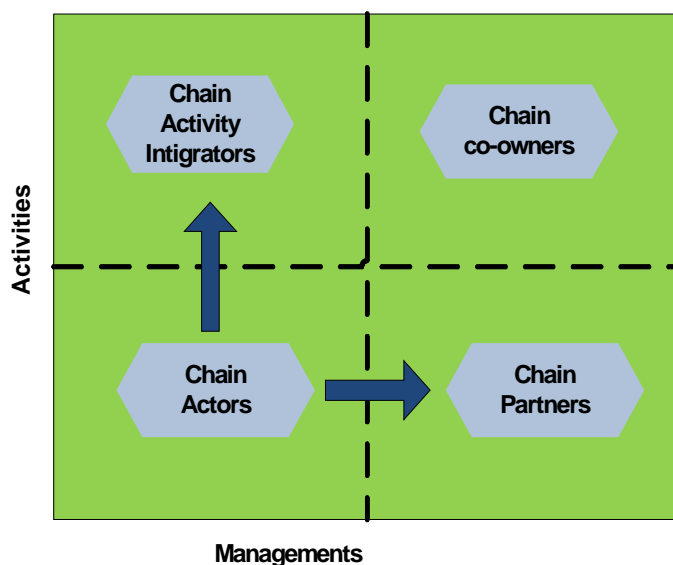


Fig. 4.8: Farmers position in chain

Farmers formed the groups, which is integration of chain partners. Groups have pulping machine farmer themselves or pulper operators pulped and prepared dry parchment. They sold dry parchment which fetches higher prices. Now they have bargaining power due to group and also economics of scale, therefore producers bargain with traders for prices of coffee. In chain after collective marketing there was both horizontal and vertical integration because farmers were organized in group and increased the area and also processed (pulped) the coffee. They are now processor also. That is the chain activity integration.

One pulper operator said, "Before the group formation I was only producer, we did not have pulping machine and methods and techniques of preparing ground /dust coffee in home, but

now I process the fresh cherry to dry parchment and I prepared around 10 kg of dust coffee in home for home consumption and local market. Now I am not only producer also processor.”

4.15 Constraints of collective marketing

All the respondents told that there were not long term disadvantages in collective marketing. But some of the producers had a low quality of coffee and that had also to be sold. Traders can say to the whole groups you have low quality of coffee despite most of the farmer had high quality of coffee. For sustainable they made a contract with trader, they could not to others. One farmer said,

“Two years ago a Chinese trader came to the village and gave a higher price than Nepalese traders, but we did not sell to him because of the contract and sustainability of market. If we sold to the Chinese traders he would not come next year and Nepalese traders also would not come to buy their coffee.”

Therefore farmers do not want to break the relationship with local traders which could create severe problem in marketing and trust. They could not sell their coffee at higher price due to collective marketing.

Sometime there was a lack of commitment with the group members, taking more time in decision making and a lack of trust among group members.

4.16 Coffee processing

The initiation of coffee processing was after formation of the group and all the coffee was processed at village level. Both groups have coffee pulping machine. All the coffee has processed by wet processing method. In Kalleri Danda coffee producers group, all the members pulped fresh cherry personally and dried to make dry parchment. But in Abiral Bagdacha Indrawati coffee producers group, all the members sold fresh cherry and pulper processed to make dry parchment.

In Abiral Bagdacha Indrawati coffee producers group, the pulper operator prepared filter coffee for home consumption and some amount for local market. He prepared annually 10-11 kg of filter coffee. But in Kalleri Danda coffee producers group, most of the respondent prepared filter coffee for home consumption. They prepared 3-4 kg of coffee dust only for home consumption. In that group the pulper operator also prepared the filter (Dust) coffee for local market. Last year he prepared 12 kg of dust coffee. The price of dust coffee was Rs.450-500/kg in local market.

4.16.1 Pulping instrument

In both group they have a drum pulper, in Abiral Bagdacha Indrawati coffee producers group, the pulper was provided by Coffee promotion projects. Now it is the property of group. But in other group Kalleri Danda coffee producers group, the coffee pulping machine was bought by group money. Both coffee machines are the property of group.

4.16.2 Operation and maintenance of machine

Till the date both coffee machine were operated by coffee pulper. In Abiral Bagdacha Indrawati coffee producers group, the pulping machine was totally operated by pulper because all the group members sold fresh cherry to the coffee pulper and coffee pulper processed fresh cherry to dry parchment. He took all the responsibility of coffee pulping machine if there is something problem in pulping machine, the pulper will repair by him or he called technicians to repair it, he paid the technicians personally.

In Kalleri Danda coffee producers group, all the members of group brought their coffee to the pulping centre and they processed personally. If there is something minor problem in

machine, the pulper operator take the responsibility but in case of heavy problem, groups is responsible for repair and maintain the pulping machine.

4.16.3 Coffee pulper operator

The two pulpers were interviewed for information about processing and coffee pulping. Each group has established a pulping centre with one pulping machine. They were not only pulper operator but also coffee farmers. In both groups the pulping machines were owned by groups not by the pulper but maintenance was the responsibility of pulpers. Pulpers not only processed the fresh cherry of group members, they bought fresh cherry from other coffee farmers who are not in group and also from other groups who have not pulping machines. It is a profitable business, because they do not give whole time to pulping, they could work in farm in leisure time. They worked in pulping machine only in season. Both pulpers were farmers, pulpers (processors) and also traders. They processed dry parchment and stored it till the sale. They sold it to the coffee trading organization. From last year they sold dry parchment to Gulmi cooperative, because they have got more price and that cooperative will buy for long time and help group to internal control system(ICS) for certification which is helpful to certify the product from international certifying agency.

4.16.4 Advantages of processing

Farmers and pulper operator added value on the coffee and got a higher price. They used leisure time for coffee pulping and sun drying. Previously they had to sell the dry cherry fetching low price. But now all the farmers from the Kalleri Danda coffee producer group produced dry parchment in home. They could store that dry parchment for long time. They got a good price by selling dry parchment. In the pulper operator centers, they made compost manure from the skin or pericarp of cherries.

Table 4.9: Indexing of advantages of coffee processing

Advantages of Coffee processing	Index	Rank
Better price	2.33	I
Job opportunity	2	II
Longer storage life	1.73	III

Note: Respondents were asked to tell advantages in scales ranging from high to low by assigning 3 level scales. The scale values considered were 3 for high and 1 for low level advantages.

From the above table, respondents told that after processing they got better price. And secondly it also helps to job opportunity.

4.17 SWOT Analysis:

Collective marketing is well establishing among smallholder farmers. Coffee producer and marketing groups are increased.

Strength	Opportunity
<ol style="list-style-type: none"> 1. Easy to sell due to economic of scale in group. 2. Group power strengthening and strong networking in marketing. 3. Easy to sell (each group member collected their coffee in collection center and they sell in bulk form through pulper operator after making parchment 4. Easy for market management and coordination due to coordination with other key stakeholders' (like DCPA, cooperative, company and exporters) - saving time and marketing costs (due to group approach). 5. Strong network of the farmers, framers coffee production and marketing groups. 6. Ensure of payback and payback on time. 	<ol style="list-style-type: none"> 1. Traders prefer to buy coffee from groups. 2. Easy to add value on coffee. 3. Pulper operator can establish enterprises of coffee processing. 4. Easy to follow the internal control system of coffee certification due to group. 5. Easy to get trainings and extension services from GOs and NGOs.
Weakness	Threats
<ol style="list-style-type: none"> 1. Poor quality of coffee because of mixing from different sources. 2. Pulping centers in each group, large number of pulping center creates variation in processing and quality of coffee. 3. Lack of common mission among group members 4. Barriers to entry into and exit from the group. 5. Long time for group decision making 	<ol style="list-style-type: none"> 1. Numbers of large scale farmer are increasing. 2. Traders need good and uniform quality of coffee.

5. CONCLUSIONS AND RECOMMENDATIONS

5.1 Conclusion

The Sindhupalchok district has a potential for the coffee business. The numbers of farmers groups are increasing and old farmers are increasing the area under coffee cultivation each year and consequently, the numbers of pulping centers are also increasing.

From the descriptive analysis of the study the average land holding size is 0.58 ha. The average no of coffee plant has increased from 8 in 2003 to 179 in 2009 and the production area and production amount have also increased from 33 m² and 41 kg to 774m² and 729 kg respectively. The area of coffee is increasing at a decreasing rate due to the fact that some have farmers finished their land for coffee planting.

The purposes of group formation were a lack of the reliable markets; an individual has a small scale of produce and scattered, low price, long payback interval and lack of market information. The collective marketing is fruitful for coffee producers. Due to the collective marketing, group farmers have a strong bargaining power on coffee price determination, increase in profit from coffee, easy and increased quality of coffee, saving of time, payback ensure and on time, sustainable market, increased social harmony and establishment group saving and credit. Collective marketing ensures the market and price of coffee because of this group famers are increasing the area of coffee by converting the other crops land.

In collective marketing farmers are organized in group, the developmental organizations, governmental organizations assist group rather than individuals. After formation of group they got more trainings and equipments like pulping machine.

After collecting marketing, farmers are not only coffee producers; they are also involved in pulping of coffee. They prepared dry parchment. Before group marketing, they produced only dry cherry. They did not add any value on coffee. In the present situation all the farmers from Kalleri Danda Coffee Producers Group produced dust coffee for home consumption. The pulper operator prepared dust coffee also for local market. In the Abiral Bagdacha Indrawati Coffee Producers Group, only the pulper operator prepared dust coffee for home consumption and local market. There is no any collective marketing system for other crops because other crops are not grown commercially and the amount that sold is very small.

There are basically 3 types of marketing channel. First value chain is Input market, Coffee Producers Local roaster Local market and second is producers to traders and domestic market, Which comprise 32% by volume in 2008 and the third chain is from traders to international market , comprises 68%.

The value share of producers is high in the first chain, where share is 38% and in the second chain the producer's share is 32%. The producers share decrease with the increase of intermediaries.

The main constraint in coffee marketing is low volume of production per producer. The second constraint is lack of transportation facilities and high transportation costs.

From the study, only the wet method of coffee processing was used and before group they did not process coffee. They have a drum pulper owned by the group. The pulper operator has the responsibility for the maintenance of the pulping machine. The advantages of processing are better prices for dry parchment then fresh cherry, utilization of time (job opportunity) and better storage life.

5.2 Recommendations

Based on the findings of this study, the following recommendations are made which might prove significant for policy implications for the development of coffee industry in Nepal.

Since coffee can be successfully grown in marginal sloppy hills, Government can design programs to expand coffee area in the community forests of hilly regions of Nepal through group approach.

Provide loan a facility to group in subsidized interest rates, for coffee production and processing, as group collateral.

Conduct adequate research and extension services in coffee production, processing and marketing.

Develop public infrastructures like transportation, communication, etc. in coffee growing areas.

Develop storage facilities in the group.

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7. ANNEX

7.1 Annex 1: Checklist for Interview

**This is a checklist for to assess the effect of collective processing and marketing.
Checklist for interview with farmers**

1. Name of Respondent ... Date..... Location..... Sex of respondent ...
2. How many plant of coffee do you have?
3. Do you have group for coffee production and marketing? If you have group, why do you form group and when? How much quantity does the group bring together?
4. Do you form group in your initiation or facilitation of others?
5. If in facilitation who facilitate to form group?
6. If your own initiation, how?
7. What is your role in group? How do you participate in group? What is the structure of your group (organization)?
8. Before group, did you sale your product? If sale which market outlet and quantity of produce? Traders come in your places or you went there?
9. How much quantity do you sell now?
10. How much price did you get before collective marketing? And how much price are you getting now?
11. What do you do in collective marketing?
12. What are the advantages of collective processing and marketing?
13. What are the disadvantages of collective processing and marketing?
14. Do you have any problem in collective marketing? If yes, what are these? And how can group improve these problems?
15. Are there any special marketing arrangements between the market intermediaries and the farmer?
16. Do you process coffee cherry? If process which method and instrument do you use?
17. Does your group own the coffee processing instrument? If you have, who provides you, how it is operated and maintained?
18. Do you have advantages of processing? If advantages what are the advantages?
19. Do you store coffee? If yes, where and why?
20. Which market outlet do you prefer and why?
21. How and when do you get paid?
22. How do you get market information?
23. What are the farm inputs for coffee production? What are your production costs (inputs, labor, equipments, others) quantified?
24. How do you get farm input?
25. How is the logistics organized?
26. How do you bargain for price and who decides on the price?
27. How the price is determined?
28. What are supporting organizations and in what way do they support?
29. What challenges do you face in the production and marketing of coffee?

Structured questionnaire for farmers

1. What are the main marketing constraints in coffee? List in order of constraint (most problematic-7 and least problematic-1)
 i) low volume_ ii) Non uniform quality_ iii) Transport_ iv) Information_ v) Payback_ vi) low productivity_ vii) processing and storing facility_
2. What are the advantages of collective marketing? Give the mark-5 for most important advantages and 1 for least one.
 i) Bargaining power_ ii) Increased profit_ iii) Time saving_ iv) Pay back ensure_ v) Sustainability_
3. What are the advantages of coffee processing?
 i) Better price_ ii) job opportunity_ iii) processed coffee has longer storage time_

Checklist for interview with Traders

1. Name of Respondent Location..... Sex of respondent
2. How long have you been in this business?
3. Whom do you buy from? And how do you choose?
4. Do you buy from group or from individual producer? If from group, how is it?
5. Before group, how did you buy and how was that?
6. How do you see the quality and quantity?
7. At what price do you buy and who determines the price?
8. At what prices do you sale?
9. What is payment mechanism among trader? (immediate/ time back)
10. Do you add on value in marketing? (packaging, processing, storage)
11. What are the marketing channel cost (transportation, labour, commission, time, packaging)
12. How do you gather information about product and market?
13. How is your opinion about the price and how do you maintain the price before and after collective marketing?
14. Where do you sell coffee and how do you determine the choice of the channel?
15. What is your relation with other seller and buyer (immediate)?
16. What challenges do you face in buying and selling process?
17. What are the pros and cons of existing marketing channel?

Checklist for district coffee producers' association and district agriculture development officers

1. Name and office of participants Location.....
2. Do you provide any kinds of supports to coffee producers? If yes, what types of supports?
3. How these services are delivered to the farmers?
4. Do you have program related to collective marketing of coffee?
5. How and what types of programs do you provide related to coffee marketing?
6. What are the pros and cons of collective marketing system?
7. What challenges do farmers face in the production and marketing of their crops?

7.2 Annex 2: Name of respondents

s. no	Name of respondents	Name of group	sex	Post in group
1	Bindhe majhi*	Abiral Bagdachha Indrawati	M	President
2	Subba Majhi	Abiral Bagdachha Indrawati	M	Member
3	Bal Bahadur Majhi	Abiral Bagdachha Indrawati	M	Member
4	Hari Majhi	Abiral Bagdachha Indrawati	M	Member
5	Ramesh Majhi	Abiral Bagdachha Indrawati	M	Member
6	Bharat Khadka*	Kalleri Danda	M	President
7	Phatta Bahadur Khadka	Kalleri Danda	M	Member
8	Nir Kumari Khadka	Kalleri Danda	F	Member
9	Ambika Sapota	Kalleri Danda	F	Member
10	Apsara K.C.	Kalleri Danda	F	Member
11	Champa Khatri	Kalleri Danda	F	Member
12	Rameshwor Pathak	Kalleri Danda	M	Member
13	Suntali K.C.	Kalleri Danda	F	Member
14	Bishnu Kumari Pathak	Kalleri Danda	F	Member
15	Ganesh Bahadur Khadka	Kalleri Danda	M	Member

*Note: * indicate the coffee pulper operator.*

7.3 Annex 3: Value chain analysis of coffee sub-sector

Market participants	Producers	Local roasters	Pulper	Exporter	Central level processors			Retailers	
Product forms	FC	GC	DP	GB	GB	RB	GC	RB	GC
Equivalents (A), Kg	7.00	1.00	1.65	1.32	1.32	1.06	1.00	1.06	1.00
Processing cost (B)	-	127.88	5.00	20.08	20.08	48.72	73.67	48.72	73.67
Packaging cost (C)	-	2.35	0.35	5.45	5.45	9.97	12.25	9.97	12.25
Marketing cost (D)	-	5.38	2.00	55.35	55.35	10.75	10.75	10.75	10.75
Total cost (E = B+C+D), Rs	-	135.61	7.35	80.88	80.88	69.44	96.67	69.44	96.67
Total retail price (F)	27	500	170	320	275	400	500	420	600
Price of fresh cherry (G)	-	27.00	27.00	27.00	27.00	27.00	27.00	27.00	27.00
Cost of FC (H = 7.00x G/A)	-	189.00	114.55	143.18	143.18	178.30	189.00	178.30	189.00
Total cost / kg FC (J= E/A)	-	19.37	1.73	15.25	15.25	10.52	13.81	10.52	13.81
Final retail price/kg FC w/o subtracting J, (L = F/A)	-	71.43	40.07	60.34	51.86	60.57	71.43	63.60	85.71
Final retail price subtracting J, (M = L – J)	-	52.06	38.34	45.09	36.61	50.06	57.62	53.08	71.90
Marketing margin (N =J-G)	-	-	-	-	-	-	-	26.08	44.90
Price spread	27.00	52.06	38.34	45.09	36.61	50.06	57.62	53.08	71.90
Producer's share without subtracting J, (P=G/L, %)	-	37.80	67.38	44.74	52.07	44.58	37.80	42.45	31.50
Producer's share subtracting J, (Q=G/M, %)	-	51.87	70.42	59.88	73.76	53.94	46.86	50.86	37.55

Source: own field study 2009 and Processing cost, Packaging cost, Marketing cost is from Bastola 2007.

7.4 Annex 4: Cost benefits analysis of coffee production in Nepal.

Year	Cost (Rs.)	Return @ Rs. 60/ kg DC & Rs. 27/ kg FC	Benefit/year /ropani	Benefit / plant
1	7512.7	0	-7,512.7	-75
2	3144	0	-3,144	-31
3	3726.33	3,000	-726.33	-7
4	3233	6,000	2,767	28
5	3276	9,000	5,724	57
6	3560.3	12,000	8,439.7	84
7	4185	15,000	10,815	108
8	4731.7	18,000	13,268	133
9	4826	18,000	13,174	132
10	4857.7	18,000	13,142	131
11	4875	18,000	13,125	131
12	4874.3	18,000	13,125.7	131
13	4875.7	18,000	13,124	131
Total	57,678.67	1,53,000	95,321.33	953
Average	4437	11769	7332	73
FC* total	54,525	170,213	115,687	-
FC* average	4,194	14,148	9,954	99

* After deducting the cost incurred in forming dry cherry from fresh cherry. The price is Rs. 27/kg fresh cherry.
 Source: CoPP, Helvetas Nepal (2004).

Cost for coffee production.

Fixed costs -cost of seedlings of coffee and shade trees

Variable costs

Cost for labor used in different intercultural operations like plantation, manuring, training, pruning, weeding, mulching, harvesting, grading.

7.5 Annex 5: Photos



Photo 1: Nursery of coffee



Photo 2: Board of coffee producers group



Photo 3: Fruiting coffee plant



Photo 4: Coffee Pulping by Drum pulper



Photo 5: Winnowing after hulling the dry parchment



Photo 6: packaging of dry parchment in jute sacs and storing in room



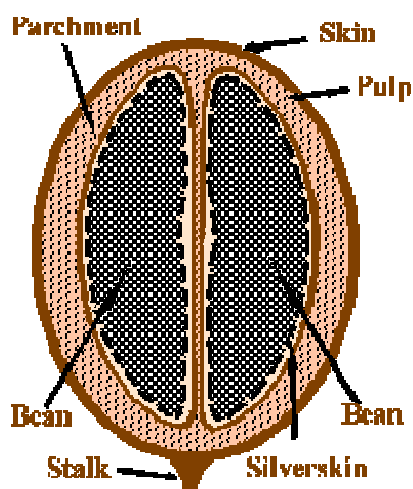
Photo 7: Board of organic coffee shop in Sangachok



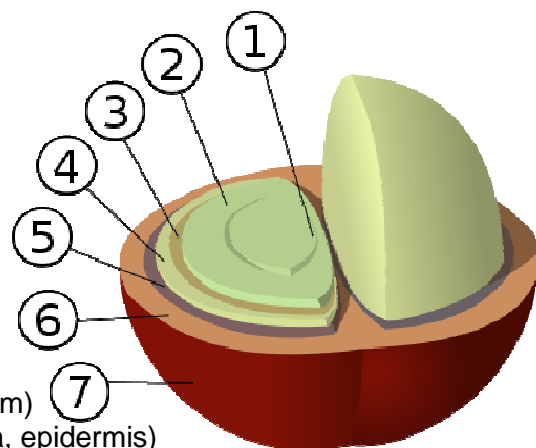
Photo 8: Interview with smallholder producer



Photo 9: Interview with DADO officer



- 1: center cut
- 2: bean (endosperm)
- 3: silver skin (testa, epidermis)
- 4: parchment (hull, endocarp)
- 5: pectin layer
- 6: pulp (mesocarp)
- 7: outer skin (pericarp, exocarp)



Source: Wikipedia, GNU license

Photo 9: Structure of coffee cherry/beans