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COFFEE AS A LIVELIHOOD SUPPORT
FOR SMALL FARMERS:
A CASE STUDY OF HAMSAPUR VILLAGE IN NEPAL

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KANA AOKI

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**COFFEE AS A LIVELIHOOD SUPPORT FOR SMALL FARMERS:
A CASE STUDY OF HAMSAPUR VILLAGE IN NEPAL**

By

KANA AOKI

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ABSTRACT

COFFEE AS A LIVELIHOOD SUPPORT FOR SMALL FARMERS: A CASE STUDY OF HAMSAPUR VILLAGE IN NEPAL

By

KANA AOKI

Coffee has been produced in many developing countries as a cash crop because of the high return of income. In Nepal, coffee production also has been promoted as an income generating project by the government since the 1980s with the collaboration of international development agencies. The suitable climates and geography for coffee production provide the potential to grow high quality Arabica coffee for export market. With the increase in demand for specialty coffees in the international market, the demand for Nepalese coffee is expected to increase. This research examines the possibilities of organic coffee production as a livelihood support for small-scale farmers in Hamsapur village in Nepal. Using value chain analysis, coffee producers and collectors were interviewed, and semi-structured interviews were conducted with key informants. The study showed the contribution of coffee production as community development and producers' high interest in coffee production as a source of income. However, the income generation promises have not been effective because of lack of transparency in coffee market, lack of market structure because of political instability, and insufficient quality for export market. Further analysis suggests that what is needed is a commitment to collaboration between actors at different stages of coffee value chains in Nepal, and alternative trade relations, which focus more on the benefit to farmers.

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TABLE OF CONTENTS

LIST OF TABLES.....	v
LIST OF FIGURES.....	vi
CHAPTER 1 INTRODUCTION	1
1.1 Global Commodity, Coffee.....	1
1.2 Coffee Production in Nepal and Hamsapur Village.....	2
1.3 Problem Statement.....	3
1.4 Objectives of Research.....	6
1.5 Definition of Terms.....	8
CHAPTER 2 REVIEW OF LITERATURE.....	10
2.1 Chapter Overview	10
2.2 The History and Development of Coffee as a Commodity.....	10
2.3 Rise of Specialty Coffee Market.....	16
2.4 Concept of Value Chain Analysis.....	18
2.5 Value Chain Analysis and its Application in Coffee Sector	21
2.6 Coffee as Alternative Livelihoods Support for Small Farmers in Hamsapur?	22
2.7 Summary.....	25
CHAPTER 3 RESEARCH METHODOLOGY.....	26
3.1 Research Design.....	26
3.2 Instruments Development.....	28
3.3 Data Collection Procedures	30
3.4 Data Analysis Procedures.....	34
3.5 Assumption and Limitations of Study.....	35
CHAPTER 4 DATA ANALYSIS.....	38
4.1 Introduction.....	38
4.2 Survey Findings from Interviews with Coffee Producers.....	38
4.3 Interviews with Key Participants.....	53
4.4 Discussion.....	70
CHAPTER 5 SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS.....	85
5.1 Summary.....	85
5.2 Recommendations.....	88
5.3 Recommendations for Future Research.....	95
APPENDIX	97
REFERENCES.....	115

LIST OF TABLES

Table 1: Producers' Involvement with Coffee Production.....	39
Table 2: Incentives for Coffee Production.....	40
Table 3: Summary of Coffee Production Scale, Practice, Income.....	41
Table 4: t-Test Tables of Irrigation and Scale of Production.....	43
Table 5: Cross Tabulation, Irrigation and the Scale of Production.....	44
Table 6: t-Test Table of Coffee Committee Members and Scale of Production.....	45
Table 7: Cross Tabulation, Coffee Committee Members and Coffee Training.....	45
Table 8: Challenge of Production and Selling.....	48
Table 9: How Did Coffee Production Help the Improvement of Community?	51
Table 10: Coffee Price Comparison.....	72
Table 11: 2009 Coffee Price and Revenues in Local Market.....	73
Table 12: t-Test Tables of Training and Scale of Production.....	77

LIST OF FIGURES

Figure 1: International Coffee Prices.....	15
Figure 2: Area and Production of Coffee in Nepal, 1996 to 2007.....	24
Figure 3: Major Coffee Production Area in Nepal.....	27
Figure 4: Comparison of Production in District Level 2007/2008.....	27
Figure 5: Value Chain Map of Hamsapur Coffee.....	53
Figure 6: Effective Use of Donor Resources.....	92

CHAPTER 1

INTRODUCTION

1.1 Global Commodity, Coffee

Coffee is a global drink. It is a global drink because of its importance in the international market. Coffee is one of the most traded commodities in the international market (Ponte, 2002a). In the year of 2007 to 2008, approximately 95.3 million bags of coffee were exported internationally, and the value of the total export was estimated at US \$15.2 billion (ICO, 2008). It is a global drink also because of its complicated colonial history. More than 90% of coffee is produced in the global South while the majority is exported and consumed in the global North, which provides insights to the colonial relationship between the North and the South. There are about 85 coffee producing countries in Latin America, Asia and Africa, and about 500 million people globally are directly or indirectly involved with coffee as their source of income (Bacon, 2005; ICO, 2010).

Because of its high cash return, coffee has been promoted as an income generating project for developing countries. In particular, coffee was promoted as a cash crop in the 1980s with the increased focus on poverty eradication. However, coffee growers suffered due to an unstable coffee market, and eventually, in the late 1990s, coffee prices dropped below the cost of production. With increased consumer group concern for producers as well as awareness of sustainability issues, the demand for specialty coffee, including fair trade and organic, has been increasing, and this has created a niche market for coffee growers.

1.2 Coffee Production in Nepal and Hamsapur Village

Nepal is one of many countries growing coffee for the international export market. Coffee was first introduced to Nepal in 1938 from Myanmar as curiosity plants (NCTB, 2008). With the support of the Swiss government, it was initially planted to prevent landslides in the Palpa district. Soil erosion had been a serious issue in the region, and coffee plants showed effective results in reducing soil loss, so the production spread to other districts in Nepal. After its high market value and nations' perfect production condition for Arabica coffee were recognized, coffee production gradually expanded in the country with the involvement of international development agencies and support from the Nepalese government. Currently, coffee is cultivated in 40 districts in Nepal including more than 18,000 producers (NCTB, 2008). Coffee is grown mostly in the Western part of Nepal, and only Arabica coffee is produced in the nation (Manandhar et al., 2009; Panthi et al., 2008).

In the village of Hamsapur in the Kaski district, coffee cultivation started in the 1980s as an income generating project with the support of CARE Nepal, a branch of an international non-governmental organization. CARE launched the regional office in the village and for approximately eight years conducted several projects focusing on increasing income opportunities for villagers. CARE's support ranged from providing free coffee seedlings to teaching basic production techniques to the villagers. Coffee production spread gradually from farmer to farmer. Because of the high return of income, farmers continued to grow coffee and to sell at the local market after CARE's project phased out.

In 1997, Indragufa was established as a Hamsapur based non-governmental organization dedicated to improving villagers' livelihoods. Indragufa started projects on value-added agriculture production to increase income opportunities for the villagers. Support for coffee farming was also part of the project. They provided seedlings and training to those who were interested in coffee production for free of charge with the collaboration of the Kaski District Coffee Producers Association (DCPA). Currently, there are about 446 coffee producers in the Hamsapur village, and the number of farmers interested in growing coffee is increasing because of the simple way of farming and the high return of income. Because Hamsapur village is located in one of the most suitable regions for coffee production, 800-1000 meters above sea level, the Kaski district is designated as a special coffee production area.

1.3 Problem Statement

Debate over cash crop promotions have been discussed for over a decade because of its success and failure. The majority of the poor in developing countries rely on agriculture as their primary source of income, so commercialization of agriculture is an effective way to strengthen the economy based on comparative advantages. In particular, export of agriculture and raw commodities has been promoted because of its high return of income. The advantages of cash crop production are not limited to economic development. Jones and T.S. (2003) explain how cash crops provide positive influence on the community through “household-level synergies”, acquisition of resources, and “regional spill-over effects”, economic benefit beyond cash crops because of the investment in the region such as creating infrastructure for public roads and stimulating

other related businesses. For example, in Zambia, cotton farmers were able to access inputs for food production because of the participation of cotton productions; in Mali, cotton production helped to organize the transportation infrastructure in the rural areas (Jones and T.S., 2003). These examples indicate the benefit of cash crops production as a step to further social capital development.

On the other hand, commercialization of agriculture has also been highly criticized. Multiple studies have shown agricultural commercialization has often bypassed the poor and benefitted only a limited number of people (Bergquist, 2007; Braun, 1995; Brown and Kennedy, 2005). The intensification of specific crops in one region has caused environmental and social problems in the past. The causes are complex and vary depending on commodities and regions, but the following could be pointed out as characteristics of failures in agricultural commercialization: 1) burden on farmers for high capital expenditures including machinery and inputs; 2) negative impact on the environment because of mono culture production; and 3) an increase in food insecurity. Some examples indicate that the promotion of cash crops has resulted in widening the gap between the rich and the poor. In addition, some scholars have criticized the commercialization of agriculture because of the nature of agriculture products. Singer (1950) argues that specialization of food and raw commodities in developing countries limits resources which would have been better used for increasing domestic production or manufacturing. The purpose of foreign investment and foreign trade is its social benefit including raising the general level of education, skills, lifestyles, and inventiveness. However, Singer argues that exporting countries can never benefit from primary trade commodity because of the demand elasticity of agriculture as well as a lack of business

practice which include producers in the traditional investment model. Thus, it only contributes to further economic development in industrialized nations. He also argues that this is “a system of economic imperialism and exploitation” (Singer, 1950). An example from the shrimp industry illustrates the complexity of cash crop development.

So-called “blue revolution” or intensification of shrimp farming was introduced in Southeast and South Asian countries as income generation projects in the mid-1980s with the support of the World Bank and the Asian Development Bank (Lebel et al., 2002). High demand and return of income has provided economic benefit to these countries, but the sustainability of production and consumption has been highly criticized because of the following reasons. Firstly, conversion of mangrove forests to shrimp farming ponds has destroyed large areas of mangrove forests. As a result, about 35 % of mangrove forests worldwide were lost in past two decades (Valiela et al., 2001). Mangrove forests offer tremendous ecological benefit to the areas and also provide the protection to the people in coastal areas from natural disasters. Therefore, the impact of mangrove loss is significant (Bergquist, 2007). Additionally, overuse of antibiotics has caused serious water and land pollution threatening the public health (Deb, 1998; Funge-Smith and Briggs, 1998). The rapid increase of demand for shrimp also increased the dependency to one industry and caused vulnerability of the local economy (Goss et al., 2000; Phillips, 2006). Although shrimp farming contributed financially, the question remains whether the welfare of the poor farmers has improved.

These arguments show the possibilities and challenges of the commercialization of agriculture. Therefore, the question is how to establish a sustainable system of commercial agriculture. The necessity of more sustainable production and consumption

of agriculture commodities has been gaining higher attention; however, it is still unclear how to define such practices, or how to even define the term “sustainability.” One of the most commonly used definitions of “sustainability” is: “It meets the need of the present generation without compromising the needs of future generations” (Dunham, 2004).

Serageldin and Steer (1995) also describe the sustainability as the integration of economic, social, and environment as it is often called as “three pillar of sustainability” (Serageldin and Steer, 1995). Thus, combining with these concepts, sustainable cash crop production could be looked as; 1) sustaining economic benefit to producers; 2) protecting and supporting local knowledge and livelihoods; and 3) sustaining the local environment. It is the time to seek for more sustainable production of cash crop which is different from traditional manner.

1.4 Objectives of Research

Nepal remains as one of the poorest countries in South Asia with a GDP per capita of US \$470 (The World Bank, 2009). As in many developing countries, the agriculture sector plays a critical role in the Nepalese economy. Unemployment in the rural areas and migration are critical issues the country faces, so creating employment opportunity within the agriculture sector has the potential to significantly benefit those living in rural areas. Thus, the promotion of coffee is gaining attention from aid agencies and Nepalese government as a source of livelihood support. With these supports, coffee production is expected to increase in Nepal. Thus, the analysis of the current coffee market is critical in order to evaluate the current industry as well as for the future development. The objectives of this study focus on understanding the current state of

coffee production as the following: 1) to analyze the value chain of coffee productions; 2) to study farmers' perspectives on coffee production; and 3) to develop recommendations to value chain participants for the future market.

This study is important for the following reasons. First, there are few studies of coffee production in Nepal because it is a relatively new commodity. Existing studies mainly focus on the production side including soil nutrition and disease management, and socio-economic focused research is limited to the economic impact of coffee production (Poudel et al., 2009). However, even though Nepal provides the ideal production condition for specialty coffee with supports from the government and agencies, Nepalese coffee has not yet established a reputation for specialty coffee in international market. This implies potential obstacles in the value chain, but none of the previous research focused on such an analysis. Thus, more holistic research on the coffee value chain will provide insights into both the obstacles and the potential of expanding Nepalese coffee production. Secondly, as discussed above, it is critical to seek more sustainable production system. I suggest looking into practice based on; 1) sustaining economic benefit to producers; 2) protecting and supporting local knowledge and livelihoods; and 3) sustaining the local environment. The benefit and downside of cash crop promotion has been debated, so now it is critical to explore the frameworks for a more sustainable model. Therefore, the importance of this research also includes providing such a framework. Finally, the study is also significant because integration of these approaches will provide valuable recommendations for Nepalese coffee sectors. Thus, it is vital to conduct this study in the stage of rapid growth and change of coffee production in Nepal.

1.5 Definition of Terms

The following terms are defined here and will be used throughout this paper.

Arabica Coffee: One of the major types of coffee which has been grown commercially.

Arabica coffee is grown at a higher altitude and is considered as superior quality compared with *Robusta* coffee. However, Arabica coffee is more susceptible to disease, such as white stem disease, so economical loss could be larger.

Robusta Coffee: *C. canephora*, also known as Robusta coffee is another variety grown commercially in the world. Robusta coffee is grown at lower elevations, and it was not considered to be worth cultivating until Arabica coffee had significant damage from leaf rust. It contains higher caffeine and is more disease resistant than Arabica coffee. It is usually used for blends because of its harsh flavor.

Pulping: The process of the removal of the pulp by a pulping machine.

Coffee Cherry: Coffee beans turn bright red when they are ripe and ready to be harvested.

Wet-processing: One of the coffee processing methods which is considered to produce better quality coffee. Ripe cherries go through the washer to separate green and red beans, and it goes through the pulping process. After pulping, coffee cherries will be fermented for about 72 hours and will be dried under the sun.

Dry (Natural) processing: Dry or natural processing is another method of processing which dries the whole cherries under the sun or in mechanical dryers. It is often used for the preparation of espresso coffee.

Specialty Coffee: Specialty coffee refers to so-called “gourmet” or “premium” coffee grown in special and ideal climates. It obtains the score of above 80 points on a 100-point scale determined by the Specialty Coffee Association of America (SCAA).

Small Farmer: There are several definitions of small farmers, but one of the definitions is those farmers who cultivate the land of 1-2 hector (FAO, 2009).

Livelihood: According to the elids, “A livelihood comprises the capabilities, assets (including both material and social resources) and activities required for a means of living.” (eldis, 2010)

CHAPTER 2

REVIEW OF LITERATURE

2.1 Chapter Overview

This chapter provides an explanation of concepts and a description of the framework that frame the analysis of the coffee industry in Nepal. The first section briefly explains the history of coffee and how coffee has been developed as a global commodity. The next section focuses on the rise of the specialty coffee market with increasing awareness of sustainability. The third section discusses value chain analysis, a critical concept in regard to sustainability. The fourth section describes the application of the value chain analysis to the analysis of coffee value chain. The fifth section discusses how these frameworks could be used to analyze the coffee value chain in the case of Nepalese coffee.

2.2 The History and Development of Coffee as a Commodity

The origin of coffee beans could be found in Ethiopia around the 6th century. There are several stories regarding the discovery of coffee beans. One such story is that of a farmer who found that his goats showed excited behavior after chewing coffee beans (ICO, 2010). For the first 300 to 400 years after its discovery, coffee production and consumption was limited to Ethiopia. Its main use during this time was for religious rituals, and coffee was thought to be “the tear of the supreme sky god” and a destroyer of cattle, so the process of roasting started as for destroying such evils (Wild, 2005). Around the 12th century, Ethiopia invaded the current region of Yemen, which also contributed to the spread of coffee beans to the Middle East. Coffee cultivation started in the area of the

so-called Fertile Crescent where the modern-day Mediterranean and southern Turkey. Its distinct flavor and stimulating effect attracted many consumers; in particular, it became popular in Islamic countries and was consumed as a substitute for alcohol which was forbidden under Islamic law.

The expansion of coffee after the 16th century parallels the history of colonialism. Coffee found its way to Europe through Turkey, major port between Europe and Middle East. Coffee quickly became a popular drink among European elites because it was both high priced and exotic. This popularity increased demand and led to expanded cultivation in European colonies. During the 16th century, the Dutch East India Company carried coffee seeds to Java and Sumatra in Indonesia, the Philippines, and the current region of Sri Lanka (Crawford, 1852). Unlike the failed cultivation of tea, coffee cultivation and production was successful with the expansion of colonies during this era. Apparently, because of the drink's popularity, Europeans tried coffee cultivation in every possible country. As the production volume increased in European colonies, the price of coffee dropped and by the 17th century, consumption gradually spread to the middle classes across both Europe and the American colonies.

As coffee changed from an elite drink to an ordinary one, production demand simultaneously expanded and millions of slaves were used as labor on coffee plantations (Daviron and Ponte, 2005; Jaffee, 2007). The system of slavery had already been established in Caribbean nations by the 18th century because of its valuable sugar trade. So, when coffee was brought to the region, the coffee plantation system was quickly established. Thus, although the area has high quality soil for coffee production, the rapid increase in production of coffee in Caribbean nations was mainly due to the already

established slavery infrastructure in the region. During this time, coffee production spread quickly from Caribbean nations to the Central and South America.

Today, the history of colonialism remains as a characteristic of this commodity. The majority of the coffee production still occurs in the global South, and most of the coffee is consumed in the global North, just like during the colonial era. Because of its high return of income, the number of coffee producing countries increased significantly in developing countries. In particular, the establishment of the International Coffee Agreement (ICA) in the 1960s and trade liberalization policies in the 1980s contributed to the expansion of coffee production. Because of the importance of coffee in the international market, the ICA was signed in 1963 and set the production and consumption quotas among its members countries with the establishment of International Coffee Organization (ICO). Under the agreement, the price of coffee was determined and export quota were allocated to coffee producing nations (Ponte, 2002b). Additionally, increased concern for poverty in the 1980s led to higher promotion of economic development based on trade liberalization and export-oriented policy. Under such economic development policy, developing countries were advised by international development agencies to export what they have had as comparative advantages, which are mainly primary commodities. The quota system and export-oriented policy provided high prices to producers, and this led to an increase in the number of farmers who rely on coffee production as their main source of income. Thus, coffee has developed as the most traded commodity in the international market and supports the livelihood of millions of farmers.

However, the prices of coffee dramatically dropped in the year 2000. The world coffee price hit the lowest on record and created millions of desperate farmers (Boris,

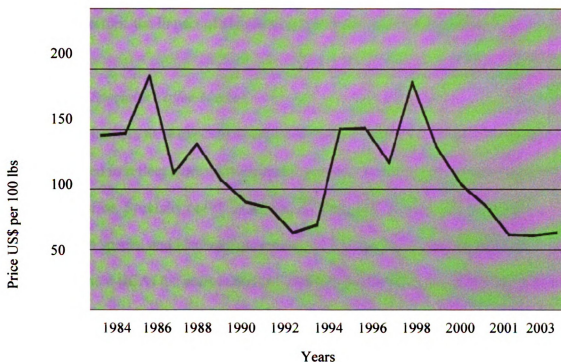
2005; Kilian et al., 2006). There are several causes for the price crisis, but it is mainly because of overproduction of coffee, in particular, the rapid growth of Vietnamese coffee and the disintegration of the ICA. Export-oriented lending policies encouraged countries like Brazil and Indonesia to significantly increase production levels. This resulted in a worldwide overproduction of coffee. During the 1990s, the coffee supply increased by 3 % yearly, while demand only increased by 1% (Jaffee, 2007). In particular, the rapid growth of Vietnamese coffee production significantly impacted the international market. In Vietnam, coffee was promoted by the World Bank and the French government in the late 1980s as one of the economic development projects to recover from the Vietnam War. This support combined with the structured agricultural policy by the Vietnamese government resulted in a production of some 14 million bags. This was a 1130 % increase by 2001 (Boris, 2005). As a result, in 2001, Vietnam became the second-largest producer of coffee in the world, after Brazil. Even though Vietnam mainly produces Robusta coffee, it has been used to blend with Arabica coffee to lower the price affecting the price of both Arabica and Robusta coffee in the international market (Jaffee, 2007).

In addition to overproduction, the disintegration of the ICO also dramatically contributed to the price crisis. The ICA had stabilized coffee prices by using a quota system. When there was over production, the quota was used to tighten the market, and in a year of low production the quota was released. This system was relatively stable because of the cooperation between consuming and producing countries. However, at the same time, this quota system also created issues of free-riding over quota and trade with non-member countries (Daviron and Ponte, 2005). Eventually, the ICA was not renewed in 1989. The disagreement about the quota system was one of the major reasons of

disintegration of the ICA, but also the United States withdrawal from the ICO significantly contributed to the end of the ICA (Bacon, 2005; Boris, 2005; Jaffee, 2007; Tsujimura, 2006). During the Cold War period, it was critical for the United States to stabilize coffee prices because large numbers of farmers were involved with coffee production in the Central and Latin America. The United State was concerned these farmers would join the forces of Communism if they could not provide stable incomes to these farmers. However, with the corruption of the Soviet Union, there was no need for the United States to be a part of the ICO, leading to a drop out of the organization in 1989.

As a result of freeing from international quotas, millions of coffee producers around the world were immediately exposed to the forces of the free market. The price of coffee went as low as 49 cents per pound in 1992, which was below the cost of production (Jaffee, 2007). Figure1 indicates the change of coffee prices between 1984 and 2003 (ICO, 2003), and the graph shows the dramatic price drop after the dissolved of the ICA in 1989. Because of the large numbers of people are involved with coffee as their source of incomes, the impact of price drop was significant. For example, in Ethiopia, they lost US \$165 million of its coffee-export earnings between 1999 and 2004, which accounts for 35 % of its Gross Domestic Product (GDP). In Brazil, the amount of coffee export had increased 18 %, but the income decreased by 8 %. When compared using the US dollar as a currency base, the price of coffee dropped more than 50 % in the late 1980s since the coffee crisis (Boris, 2005).

Figure 1: International Coffee Prices. Source: International Coffee Organization (2003).



Coffee producers were affected the most by this crisis. The promotion of export-oriented economic policy compelled many farmers to rely solely on coffee. The crisis not only created unemployment and large migration of plantation workers but it also increased malnutrition and poverty among producers (Jaffee, 2007). The employment rate in the coffee sector fell by 50 % in Central America, and low coffee prices accelerated the migration of farmers to cities as they sought employment opportunities (IADB, 2000). In 2001, seven Mexican coffee farmers, who left their village and tried to migrate to the United States because of the price drop of coffee, were found dead in the desert of Arizona (Jaffee, 2007). In Columbia, coffee farmers switched their plantation to coca for higher return of incomes, and in India, indebted coffee farmers have committed suicide (Osorio, 2002). Additionally, millions of farmers abandoned and razed their coffee plots

affecting environmental degradation (Bacon, 2005). Since these coffee producers live in one of the most ecologically diverse areas in the world and small-scale coffee producers existed as protectors, the impact of abandoning their coffee plots was severe.

2.3 Rise of the Specialty Coffee Market

Coffee farmers were exposed to price fluctuations based on demand and supply, but also it started to reflect more on consumers' demand, which is the emerging demand on specialty coffee. Specialty coffee is defined as so-called "gourmet" or "premium" coffee grown in special and ideal climates. After the corruption of the International Coffee Agreement (ICA) the coffee market is described as a more "buyer-driven" chain (Gereffi and Korzeniewicz, 1994). The international coffee market did not provide the quota system anymore, so the consumers' demand on specialty coffee was reflected rapidly in the market. In North America, the market size of specialty coffee counts for approximately 15 million pounds with retail values of \$188 million (Giovannucci, 2001; USAID, 2008). The popularity of specialty coffee is also found in emerging countries; specialty coffee sales grew 90 % between 1998 and 2003 in China, and in Russia, the market was expected to grow about 36 % by 2009 (USAID, 2008).

Perhaps, the significant growth of the specialty coffee market is also due to increased consumers' awareness of health, social justice, and environmental issues. Awareness of these attributes has increased as consumers' incomes increased. In addition, the third party certification and labeling have also been playing a critical role in raising consumer awareness of the importance of production conditions, or "attributes". For example, "fair trade" is one of the certification systems of the Fair Trade Labeling

Organization (FLO) to assure the quality of coffee. The labeling of fair trade guarantees fair prices to producers, and quality products and environmentally sound practices to consumers (TransFair, 2010). Fair trade certified coffee charges higher prices to consumers, but the idea is that the extra costs will be delivered to coffee producers as a price premium. Sales of fair trade certified products have increased by approximately 40 % per year worldwide, and totaled US\$1.3 billion in 2005 (Jaffee, 2007). Other certification includes “organic” which does not apply synthetic fertilizers, and “bird friendly” which is produced in a way to protect habitat for birds and other wildlife. There are multiple companies and organizations that monitor and provide these certifications.

As the demand shifts to the specialty coffee market, many coffee-producing nations have transferred their production practices adjusting to new consumer demands for the price premiums. For example, coffee awarded by the Specialty Coffee Association of America provides 25 % to 100 % of price premium compared with the price in New York stock market. Also, fair trade certification provides a two-cent per pound price premium to producers (Rice, 2001). Thus, these price premiums have become incentives for producers to shift away from conventional coffee farming production practices that require the application of synthetic chemical fertilizers. In particular, with the continuous low prices of coffee worldwide, the differentiation of products has become the strategy for surviving within the competitive international coffee market. Because of its increasing trend toward high quality products, specialty coffee will provide the chance to repeat business which secures the market to sellers. Thus, the specialty coffee market is gaining more attention as a potentially high source of economic growth for coffee producing countries.

2.4 Concept of Value Chain Analysis

Value chain analysis refers to a study that examines all firms and organizations involved in producing, processing, wholesaling and retailing a particular final product (ADI, 1992; Bernstein and Staatz, 1992; Haggblade et al., 2002; Mentzer et al., 2001; Shaffer, 1968). Shaffer (1968) introduces value chain studies as an alternative to marketing research. He argued, “The objective would be to understand the sector as a dynamic system, to assess what it is becoming, and most importantly, to understand the consequences of many of the alternative ways of instituting, organizing, and operating various parts of the system in order that more intelligent choices can be made among the alternatives in public and private decisions.” Overall, value chain analysis emphasizes more on understanding the causality between the relationship among different actors (Mentzer et al., 2001). Globalization is leading to rapid change in technology, resources, and institutions, and this necessitates constant restructuring of the value chain globally. Firms search for the best locations for resources, and production and consumption occurs and changes in global scale as a result. Thus, focusing and analyzing the entire value chain of a specific product provides a comprehensive picture of the complex linkages in the value chain. Additionally, the uniqueness of value chain analysis is its interdisciplinary approach encompassing economics, marketing, logistics, and organizational behaviors (Opara, 2003). Traditional economic theory approaches tend to neglect the complicated coordination in each value chain; on the other hand, industry studies assume perfect competition in the relationship between structure and performance of firms (Shaffer, 1973). However, value chain analysis provides a more holistic understanding of a specific product. Careful observation of coordination beyond one

discipline can facilitate a variety of suggestions for adjustment in the value chain when there is inefficiency in the market.

Moreover, the interdisciplinary analysis of value chain analysis also provides a useful tool in regard to sustainability. The effectiveness of value chain analysis also could be looked into based on the three pillars of sustainability: environment, economic, and social. From environmental and economic sustainability standpoints, observation of the entire value chain can increase cost efficiency and evaluate effective use of resources. For example, green value chain management practices are emerging as an important approach in China where imbalance of economic growth and environmental conservation have been discussed as significant challenges (Zhu and Sarkis, 2004). The green value chain management practice approach stimulates economic growth through efficiency while paying more attention to the allocation and use of natural resources including environmental degradations. Furthermore, from a social sustainability point of view, value chain analysis also helps to adjust the value chain in a way that benefits the poor and/or small-enterprises. Value chain analysis could rearrange profit or identifying niches for income growth focusing on women or minority groups (ADI, 1992; Haggblade et al., 2002). The search for such opportunities is called “leverage” which refers to “those that affect a large number of rural households at a single stroke” (Haggblade and Ritchie, 1992). By looking for leverage, value chain analysis can help the poor and financially disadvantaged groups to move to more efficient and profitable business practices. The Thai silk industry is an example of a successful use of value chain analysis.

Silk has been produced in northern Thailand for centuries. Rapid change occurred when Jim Thompson, a retired secret service agent, started business in local silk factories

during the 1950s and 1960s. He identified key designs and improved the quality for tourists and the international export market. As a result, the company grew to include about 140 large and small factories. With high demand and success in the silk industry, the Department of Agriculture Extension (DOAE) in the Thai government invested in producing hybrid silkworms to reduce dependency on imported silk. This led to the invention of doubled yarn yields in each cocoon. After these rapid changes in the silk industry, CARE International began working with poor village silk producers in the same region in the late 1980s. With the support of the U.S. Agency for International Development (USAID), they conducted value chain analysis to examine opportunities for the poor, in particular, for female workers. Through value chain analysis in the silk industry, CARE suggested village women to shift from Channel 1, integrated traditional producers (4 bhat per day), to Channel 2, weft yarn hand reeled from yellow cocoons (15 bhat per day). Although Channel 4-5, subcontract weavers for large factories, is more lucrative for workers (120 bhat per day), because these factories often locate in certain areas, it is challenging for rural women to work in these factories. However, shifting the work to Channel 2 from overwhelming number of workers in Channel 1 could provide the higher income to women with relatively small investment, and this was the leverage point for this value chain, where the farmers can raise the incomes the greatest extent in given limited budget. This example provides the possible utility of using value chain analysis to effectively readjust market systems in the way to efficiently benefit to the poor.

2.5 Value Chain Analysis and its Application in the Coffee Sector

How can value chain analysis apply to a commodity like coffee? Daviron and Ponte (2005) categorize value chain analysis of tropical commodities as the sequences of producers, processors or so-called middle men, exporters, international traders, industrial processors, wholesalers, retailers and consumers. Coffee also traces similar sequences in the supply chain. Talbot (1997) argues that value chain analysis is the most appropriate method to address the question of the division of the surplus in the coffee commodity chain because transparency is often insufficient in profit distribution over time. The middle men are often criticized for exploiting producers in the coffee industry, so value chain analysis helps to clarify the relationship between links in the coffee commodity chain. Thus, value chain analysis will be an effective approach in the case of coffee.

For example, the field report of “Coffee Value Chain Study” in Burundi by USAID applied the value chain study for analysis of the country’s changing coffee industry. Burundi has the highest coffee export dependency in the world (Jaffee, 2007); coffee is about 80 % of the country’s total export and this provides the primary source of income for estimated 800,000 farmers (USAID, 2008). During the process of expansion, the Burundi coffee sector went through drastic changes because of infrastructure expansion between 1980 and 1993. The Burundi government with the cooperation of the World Bank conducted the liberalization of coffee market and the large investment of coffee processing facilities. As a result, the number of coffee trees increased from 90 million to over 220 million, and washing stations, where coffee beans are washed and sorted according to quality, were also strategically expanded. The report indicated that they applied the value chain study in order to identify key constraints and opportunities

for further development. In particular, the value chain study is effective for achieving growth and sustainability.

In conclusion, the study found that there was no actual growth in the volume of coffee through the 1980s despite the extraordinary investment in coffee washing stations and dry mills. This is because the allocation of coffee revenue had been fixed by the Burundi government, and farmers had not been included as beneficiaries of the coffee infrastructure investment. In other words, coffee producers had not received the benefit of the quality investment. The lack of incentives to producers resulted in an overall decline in production. Thus, the study claims the importance of placing coffee washing stations in the hands of producer cooperatives for producers to capture the added values in order to improve the overall quality of coffee. Since the country targets the specialty market, it is critical to focus on the improvement of quality. Therefore, this case study indicates that value chain analysis provides industry specific insights and detailed recommendations for further development.

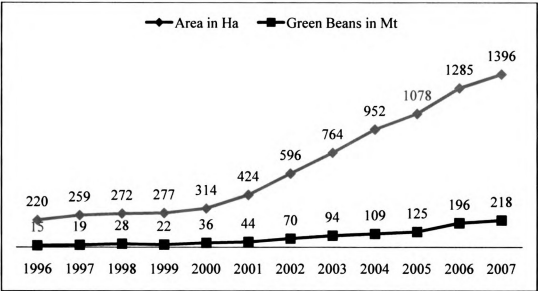
2.6 Coffee as Alternative Livelihood Support for Small Farmers in Nepal?

Coffee has been considered as one of the emerging potential crops in Nepal. The Nepalese government is keen to promote coffee as an export product, and coffee is listed as one of the focused commercial commodities in the Agricultural Perspective Plan (APP, 2006). The coffee industry has been strongly promoted for the following reasons. First of all, Nepal provides optimal production conditions for growing high quality Arabica coffee. This includes suitable altitude, soil structure, temperature, and rainfall (Panthi et al., 2008). Secondly, because Nepalese farmers have traditionally applied fewer chemical

fertilizers and pesticides to their farms, transition to organic production is relatively easy. This provides a strong advantage to meeting the growing demand for organic coffee in the international market (Pokhrel and Pant, 2009).

Moreover, perhaps most significantly, coffee production has high potential to contribute to poverty alleviation. Agriculture contributes extensively to the national economy; 36% of the Gross Domestic Product and two-thirds of national employment, or 26 million people, so coffee production could provide further employment opportunities for these farmers (Pokhrel and Pant, 2009; Shrestha et al., 2007). Poverty is severe in rural remote areas where unemployment rates are high because there are no employment opportunities in these remote regions. Thus, coffee production could be an alternative employment opportunity for these farmers. Combining with the strength of organic production for export market, coffee production offers high potential for Nepalese farmers. Figure 2 shows the change of coffee production in Nepal between the years 1996 and 2007. It indicates the stable growth in both green beans and the areas of production. Currently, the majority of the production has been exported to Japan and South Korea counting 30 metric tons of organic coffee each year (TPC, 2006).

Figure 2: Area and Production of Coffee in Nepal, 1996 to 2007, Source: National Tea and Coffee Development Board (NCTB) (2008).



Although coffee has high potential to provide alternative sources of income, it should be promoted in a sustainable manner as cash crop promotion could negatively impact on community. Nepal is a small country with a richly diverse ecosystem. “Nepal has 2.36 % of the world's flowering plants, 8 % of all birds species, 4 % of known mammals, 184 aquatic fish species, 600 plant families, 500 edible plant species and more than 200 cultivate species”(Shrestha et al., 2007). However, Nepal is also listed as one of the nations-most affected by climate change, even though it has the lowest green house gas emissions in the world (Oxfam, 2009). The shortage of rainfall is severely affecting the majority of the farmers who rely on rain fed agriculture. Therefore, the question is how could coffee production support small farmers in rural areas where people maintain traditional lifestyles but are severely affected by the global warming.

2.7 Summary

Coffee emerged as a global commodity because of its colonial background and remains as a global commodity because of its impact on the international market. Its colonial history is still visible in production and consumption patterns. Millions of farmers in the global South rely on coffee as their main source of income, and the rise of the specialty coffee market is creating niche market to these farmers as an alternative to low-price commodity value chains. Nepal is geographically situated to grow high quality Arabica coffee, and its traditional methods of farming, in other words, less use of chemicals also provides higher attributes as specialty coffee. The related literature and case studies suggested that value chain analysis will be effective because it will facilitate investigation of the entire coffee value chain. By analyzing where the obstacles and the opportunity lie in the value chain, this research will explore the potential of organic coffee production as livelihood support for small-scale farmers in Nepal.

CHAPTER 3

RESEARCH METHODOLOGY

3.1 Research Design

The study was conducted in the village of Hamsapur, Nepal in the Kaski district, which is located in the western part of Nepal where the major coffee production occurs. Figure 3 indicates the major coffee production areas in Nepal, and Figure 4 shows a comparison of production in district levels. The Gulmi district is the largest producer of coffee in Nepal, and it is also the only district that produces certified organic coffee (Poudel et al., 2009). Kavre, Latipur, and Syanja are the next largest producers followed by Gulmi. The study area of Kaski district has a relatively small scale of production compared with other production areas, but there is high potential for production expansion since the district has been chosen as an area of focus by both the government and international development agencies (CoPP, 2008).

Figure 3: Major Coffee Production Area in Nepal, Source: Coffee Promotion Project, Helvetas International (2008).

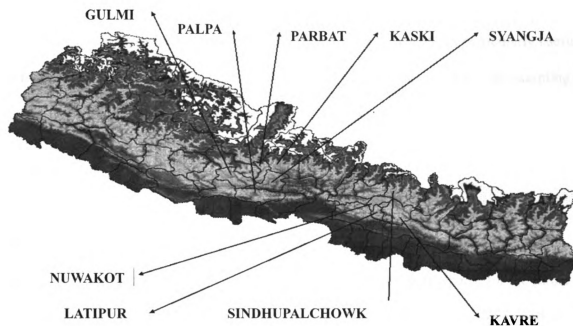
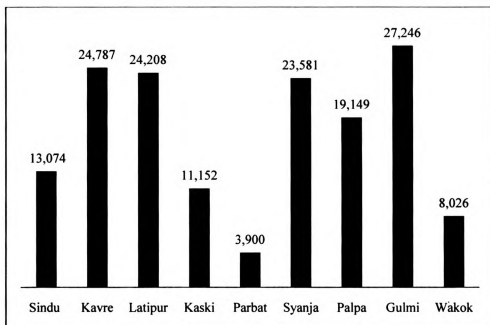


Figure 4: Comparison of Production in District Level 2007/2008, Source: Coffee Promotion Project, Helvetas International (2008).



The research was designed to focus on a description of the coffee value chain in Hamsapur. The coffee producers' sample (n=48) was selected from coffee producers in the village (N=446) by using a snow-ball sampling method, which refers a random sample selection given from a given population. Snow-ball sampling is particularly useful in identifying hard-to-reach populations (Browne, 2005; Goodman, 1961). The sampling for the key informants was also selected using this method.

3.2 Instruments Development

As it has been described in Chapter 1, the goals of this study were: 1) to analyze the value chain of coffee production; 2) to study farmers' perspectives on coffee production; and 3) to develop recommendations to value chain participants for the future market. In order to address these questions, the research instruments were developed as follows. First of all, to analyze the value chain of coffee production, semi-structured face-to-face interviews were conducted with key informants in the coffee value chain. Key participant interviews are useful in situations involving complex subject matter and detailed information (Frechtling *et al.*, 2002), so the instrument was appropriate to understand the value chain of Hamsapur coffee. Additionally, face-to-face interviews were chosen because they provide deeper information and knowledge compared with survey and focus groups (Gubrium and Holstein, 2001). The key informants were selected from among members of the following four groups: coffee collectors, retailers, international development agencies, and the national government officials. The questionnaires for the key participants are included in the end as an appendix.

Secondly, to study farmers' perspectives on coffee production, face-to-face interview and observation study were used. In addition to the benefit of face-to-face

interview explained above, it was also practical and valuable instruments in this case because lists of the coffee producers were not available, and the education level of respondents were expected to be low, and some participants might be illiterate. Thus, face-to-face interview was applied in this research in order to gain detailed information from individual farmers. The questionnaires included both open- and close-ended questions and included questions about demographics. The survey questionnaire for producers is found in an appendix. In addition, observation study was also conducted to engage the broader pictures of coffee production in Hamsapur. Observation study allows me to learn about issues which he or she was not aware of in advance, and it also confirms interview data (Frechtling et al., 2002; Taylor-Powell and Steele, 1996). Additionally, it also may provide conflicting data from interviewing, which contributes to further data analysis. Observation mainly focused on the daily activities of coffee producers and collectors as well as their interactions with each other and coffee organizations.

Finally, the document study was used to strengthen the interview data from the producers and the key informants. These documents included the national and district coffee production volume data from the governmental organization of the National Tea and Coffee Development Board (NTCDB) and the Tea and Coffee Development Project, district and village level coffee production volume data from a retail company, and the program report by the international development agencies, Coffee Promotion Project, Helvetas International and Winrock International.

3.3 Data Collection Procedures

The data collection was conducted between May and July, 2009. I initially contacted key informants in Kathmandu via email prior to the data collection. Thus, the research started from informational interviews with key informants in Kathmandu. The key informants included the National Tea and Coffee Development Board (NTCDB), the governmental organization, Tea and Coffee Development Section, the public extension agencies, and two local coffee shops serving organic Nepalese coffee. These informational interviews helped to identify other key informants as well as to finalize the questionnaires for coffee producers in Hamsapur. I also received translations of the producer and collector questionnaires in Nepali from the government officer. I spent about a week in Kathmandu at this time and then traveled to the city of Pokhara. In Pokhara, I made arrangements with a local assistant/translator for the research in Hamsapur village, and contacted both the president of the Kaski District Coffee Producers Association and the president of Indragufa, a local non-governmental organization based in Hamsapur. These contacts helped to provide more detailed information about the village prior to the interview with producers. I worked on these arrangements in Pokhara for a few days and traveled to the Hamsapur village in early June.

Before going into the data collection procedures in the village, it should be stated that the local assistant made a significant contribution to the study in Hamsapur. Since the local assistant was familiar with Hamsapur village, he provided valuable insights, particularly in the sample selection and gaining the trust of the villagers. While there was no local map available in the village, there are nine districts, or “wards,” in Hamsapur

village, and it was critical to take the samples from each ward because of difference in production system and the consideration for the local caste system. So, the local assistant was able to help to identify the sample because of his familiarity with the village. Moreover, having a local assistant was essential for gaining the trust of the villagers since I am not native Nepali. Thus, the local assistant helped significantly for the validity of this research.

The study in Hamsapur village was conducted using the following procedures. The research started from face-to-face interviews with coffee producers and coffee collectors in Hamsapur village. As previously described snow-ball sampling was used and approximately 12 % of coffee growers were selected from each of 9 wards. In total, 48 coffee producers and 4 coffee collectors were interviewed in Hamsapur. The order of the interview was 1) wards 3 and 4 located in the center of the village; 2) wards 1 and 2 where the majority of coffee production occurs; 3) wards 6 and 7 where less people are involved with coffee production; 4) ward 5 which includes the most remote areas in the village; and 5) wards 8 and 9 where coffee production used to be a major source of income. I paid particular attention to the caste system in the village because of the significance of its cultural influence. In addition, diversity within the sample was critical in order to capture the overall coffee production situation and producers' perspectives. Interviews with producers and collectors were conducted with the help of a Nepali to English and English to Nepali interpreter. I asked the questions in English first, and an interpreter translated into Nepali simultaneously. The farmers answered questions in Nepali, and it was also simultaneously translated into English. This process was repeated during the interview, and the conversations were tape-recorded. Following each interview,

I listened to the recordings numerous times. Responses were entered into a spreadsheet and converted into a SPSS file. Then the answers were coded. When the question was closed ended, no was coded as “0” and yes was coded as “1”. Those questions with multiple answers were categorized and coded based on the answers. In the case of open ended questions, the responses were entered as it was described.

In addition, similar interview procedures were used with the coffee collectors in the village. There are four coffee collecting stations in the village where producers bring coffee after harvesting. These collecting stations are located in wards 1, 4, 5, and 9. The collector processes coffee cherries by using coffee pulping machines to make green beans, and bring green beans to the Kaski District Coffee Producers Associations. The local buyer directly purchases green beans from the Kaski District Coffee Producers Association. Since these collectors play an important role in Hamsapur coffee value chain, all four coffee collectors were interviewed to compare the coffee collecting procedures and to observe the relationship with coffee buyers. The questionnaire for collectors was prepared separately from the one for producers, and included demographic as well as open and closed ended questions. The same local assistant again provided the support as an interpreter. The interview was tape-recorded, and I listened to it after each interview. The responses were entered into the spreadsheet, converted to an SPSS file, and coded. I also took field notes of coffee processing procedures, conversations with village coffee committee members, and other livelihood support projects by international development agencies. I also paid attention to interactions between and small conversations with the villagers in order to get a sense of the overall livelihood in Hamsapur. Three weeks were spent collecting data in Hamsapur village.

After the completion of fieldwork in the village, interviews with key informants were conducted in Kathmandu and Pokhara. The key informants included the president of the Kaski District Coffee Producers Association (DCPA), the president of Indragufa, the representative of the National Tea and Coffee Development Board (NTCDB), the representative of Tea and Coffee Development Section, the project leader of Coffee Promotion Project from Helvetas International, the coffee team from Winrock International, the president of the coffee buyers/processing company, the owner of the local coffee retailers, and the owner of one of the local coffee shops. Except for the interview with the president of the Kaski District Coffee Producers Association (DCPA) and the owner of the local coffee retailers, no assistant was used for interpretation because the key informants spoke English. These interviews were also tape-recorded and I listened to the recorded interviews at least twice for transcription. The interviews were coded by the categories of topics, and I went through the process several times to organize the information. In addition, the following secondary data was obtained from government officials, international development agencies, and the owner of the local retailer: statistical data of national coffee production volume by the National Tea and Coffee Development Board (NTCDB), district level coffee production volume by Coffee Promotion Projects, several feasibility reports prepared by Coffee Promotion Projects and projects reports by Winrock International. These data were useful in the process of organizing the interview data and understanding the Nepalese coffee industry.

3.4 Data Analysis Procedures

The data collected from the above procedures were analyzed to answer the three research questions outlined in Chapter 1. First, in order to address the first question of coffee value chain, value chain analysis was applied to study the coffee value chain in Nepal. The following were identified as the key actors in the Hamsapur coffee value chain; producers, collectors, local non-government organizations, the Kaski District Coffee Producers Association (DCPA), traders/wholesalers, international development agencies, and the national government. The value chain map was developed based on the interviews and observations as shown in Figure 5 in page 53. The creation and analysis of the value chain provided both a comprehensive picture of the coffee industry structure in Hamsapur as well as indications of challenges and obstacles to development of the industry.

Secondly, to study farmers' perspectives on coffee production, SPSS was used for analysis. Descriptive analysis included demographic information of coffee producers, such as occupation and age as well as information gained from other closed ended questions was applied. This procedure provided the description of coffee production scale and a brief history of coffee production in the area including length of time in coffee production and origins of coffee production in the village. Other questions addressed frequency of irrigation, fertilizer use per a year, and producers' interests in coffee production expansions. Additionally, an independent sample t-test was used to test the difference between production situations and the involvement of local coffee committees as well as coffee training. Furthermore, in order to analyze the relationship between scale of production and production practices, cross tabulation was applied. Finally, to develop

recommendations for each value chain for the future market, the qualitative interview data with the key informants were examined and compared with two previous analyses combined with the secondary data analysis. Literatures and studies in other coffee producing countries were also used to develop recommendations for the future market.

3.5 Assumptions and Limitations of the Study

The researcher needs to be aware of any assumptions or limitations that inhibits valuable and credible analysis. I list them below. The first assumption is that the principle of the value chain study is applicable to analyze the coffee value chain in the village of Hamsapur, Nepal. The critical assumption here is that obstacles and challenges in the coffee value chain can be identified through analysis of the value chain. The second assumption is that the reviewed literature will allow an examination of the critical issues to find the challenges and potentials of organic coffee production in Hamsapur. The third assumption is that a representative sample of coffee producers groups and the key informants are chosen in an effective way that can be analyzed critically, not in approachable and convenient ways for the researcher. A fourth assumption is that the analysis of data, particularly, coding of quantitative and qualitative information is applied in a sufficiently analytical fashion.

Limitations of this study include: 1) translation and cultural differences; 2) use of secondary data; and 3) personal insight bias. First of all, since I had the support of an interpreter during the study in the village, this limitation of language barrier should be recognized. Although the translation was done simultaneously in each conversation, since I do not speak Nepali, she relied on the explanation of the questionnaires of the

interpreter. Therefore, it is critical to be aware that interviews might have bias based on the interpretation of a translator. Also, the language barrier relates to the challenge of cultural differences. For example, a couple of producers did not have a concept of income, so when I asked the question, “What percentage of your income comes from coffee?” the respondents needed further explanation. I explained to the respondents what income was, but it should be recognized such cultural differences were recognized as a limitation of the study. In order to overcome the challenge of translation and cultural differences, I attempted to communicate carefully with the translator including explanation and discussion about the background, purpose of research, and the procedures. The conversation and discussions between I and the translator were repeated and carried out before and after each interviews.

Secondly, I collected secondary data from the governmental organization and international development agencies about coffee production quantity and areas, trade areas, and overall benefits and challenges of coffee production. However, written data and documentation can be biased since they are targeted to specific groups and audiences. I hoped to overcome such biases by reviewing the related literatures and case studies in other coffee producing countries. Face-to-face interviews and data from private industries were also utilized to compare and to contrast the reliability of data.

Finally, bias related to personal insights gained from professional experiences should also be recognized. Experiences based on two years of community engagement with local farmers in Ohio as well as promotion of fair trade coffee on campus provided the first experiences and the involvement with the challenges of coffee industry. Additionally, non-profit work in Washington D.C. also shaped my insight and

perspectives about international agriculture development. The experiences included involvement in consumer outreach campaigns and the research on labor rights and commodity trade as well as issues in agriculture and environment. Thus, it should be noted that these experiences developed my perspective.

CHAPTER 4

DATA ANALYSIS

4.1 Introduction

In this chapter, I respond to my research objectives by analyzing and discussing interview data with the producers and the key informants as well as the secondary data. First, analysis with coffee producers was conducted to study farmers' perspectives on coffee production. Also, the analysis with the key informants was studied for the coffee value chain in Hamsapur. Finally, these two interviews were examined and discussed with the secondary data study for further discussion.

4.2 Survey Findings from Interviews with Coffee Producers in Hamsapur

Through analysis of interviews with coffee producers, the following findings emerged: overview of coffee production in Hamsapur, the challenges of production and selling, and farmers' perspectives on coffee production. I discuss each of these below.

Overview of Coffee Production in Hamsapur

The 48 respondents who participated in this survey were 58.3 % male and 41.7 % female. The average age of the respondents was 51 years old. 72.9 % of the respondents' primary occupation was farming followed by 22.9% as teaching, and other for 4.2 %. The study showed that the average number of people in the household was 4.7. There are six coffee committees in each community which provide coffee seedlings and technological support to producers. Findings showed that almost half of the respondents (45.8 %) are members of a coffee committee.

Table 1 indicates how farmers began coffee production in different ward and the average year started to see the different production practices and involvement in each ward. The findings show that producers in ward 1 and 2 have been producing coffee for a longer period of time compared with other wards. In addition, the table also indicates CARE Nepal's significant role in initiating coffee production in Hamsapur. 54.5% in ward 1 and 2 and 75% in ward 5, 6, 7 answered that they started coffee farming because they received free coffee seedlings and technical support by CARE Nepal. Some farmers (8.3%) in ward 3 and 4 were encouraged by Indragufa, a local non-governmental organization. Also, some farmers in ward 8 and 9 received seedlings from "Farmers to Farmers," a farmers' organization supported by Winrock International.

Table 1: Producers' Involvement with Coffee Production

	Ward 1 & 2 (N=11)	Ward 3 & 4 (N=24)	Ward 5, 6, 7 (N=8)	Ward 8 & 9 (N=5)
Average Year Started	1987	1996	1992	1997
Production involvement				
CARE	54.5%	54.2%	75%	40%
By himself/herself	18.2%	20.8%	-	20%
Indragufa	-	8.3%	-	-
Relatives/neighbors	27.3%	16.7%	25%	-
Farmers to Farmers	-	-	-	40%

In addition to support from non-profit organizations, some producers brought seedlings from another village and others were encouraged by relatives or neighbors to start coffee farming. These respondents heard about a high return of incomes from their friends, neighbors, or relatives. Some respondents started reproducing coffee seedlings by

themselves, and they distributed their seedlings to their neighbors and relatives. The

following are comments from a few of the respondents;

"I started coffee farming around 2004, encouraged by my neighbors because they said there will be a good market."

"I heard about coffee from my friend in different ward, and heard coffee is tasty and economically beneficial."

Table 2 summarizes the respondents' incentives for coffee production. 83.3 % of the respondents answered that they started coffee farming because of its economic benefit. Economic incentives of coffee explain to the reason why the farmers to encourage each other to start coffee farming, or some of them were willing to travel to get coffee seedlings to neighboring village. Other motivations included 29.2 % for household consumption, 16.7 % for simpler way of farming compared with other products and 16.7% for utilizes the land which was not being used in the past. One of the respondents said;

"I used to do the traditional farming, and it was less beneficial and difficult. I think coffee is quite beneficial and profitable than other products. Coffee is the simplest and the easiest farming."

Table 2: Incentives for Coffee Production

Incentives	Count*	Percentage
Economic benefits	40	83.3%
Household consumption	14	29.2%
Simple way of farming	8	16.7%
Utilize the land	8	16.7%
Other**	4	8.4%

**Count includes multiple answers.*

***Other includes; employment opportunity, education for children, and taste of coffee.*

Tale 3: Summary of Coffee Production Scale, Practice, Income

Ward		1 & 2 (N=11)	3 & 4 (N=24)	5, 6, 7 (N=8)	8 & 9 (N=5)	Total Average (N=48)
Scale	Average # of plants	131.4	236.6	45.1	107.2	167.1
	fruiting plants	86.4	82.2	21.5	87.2	73.1
	Average per tree (kg)	6.5	9.6	5.3	6	7.8
	Total production (kg)	212.3	104.4	28.5	138.7	120
Practice	Fertilizers					
	Manure	63.6%	62.5%	75%	40%	62%
	Manure +Compost	27.3%	29.2%	-	-	20.8%
	No Fertilizer Used	9.1%	8.4%	25%	60%	14.6%
	Irrigation					
	yes	27.3%	29.2%	25%	40%	29.2%
	no	72.7%	70.8%	75%	60%	70.8%
Income	Total income (Rs)	5355	2293.9	855	3054	2982.2
	% total income	7.9%	7.5%	1.75%	2.5%	6.6%

Table 3 shows the summary of coffee production scale, practice, and income from the study findings. First of all, findings on production scale show that there are significant scale differences in each ward. The numbers of plants are considerably higher in ward 3 and 4, but the total production volume is the largest in ward 1 and 2. Both numbers of trees and production volumes are low in wards 5, 6, 7. This is because, as indicated in Table 1, producers in ward 1 and 2 started coffee production earlier compared with other regions. Also, Indragufa started their support of coffee in ward 3 and 4 in 1997, so the numbers of coffee plants are large but these trees have not reached production stage yet. Considering Tables 1 and 3 together shows how different histories of involvement affected the scale of production gap.

The second column of the table shows the production practices, and identifies different production practices in different wards. The numbers of the respondents who do not provide any fertilizer to coffee plants are higher in ward 5 to 9. These respondents

said they do not provide fertilizer to coffee because vegetables are more important products for them. However, coffee requires the extra nutrition compared with other plants (Moguel and Toledo, 1999), so the lack of fertilizer could also affect the quality of the coffee trees. In particular, coffee plants require the extra fertilizer before the flowering period. Thus, it is critical for producers to be aware of timing use of fertilizer in order to produce better coffee cherries. Moreover, the findings show that many respondents throughout the village (70.8%) do not provide irrigation or water during the dry season. Several producers said:

“Even I know the necessity of water, there is shortage of water so I cannot.”

“It is impossible because there is shortage of drinking water.”

These comments imply the challenges of irrigation for overall agriculture production in Hamsapur village. In particular, there was a delay of monsoon in 2009, so I often heard the concerns about water sources from the respondents. Water plays a very important role in both production and processing of coffee, and a lack of water negatively impacts the quality (Vossen, 2005). Are there any notable characteristics between those who apply irrigation and those who do not? In order to compare the scale of production between these two, an independent sample t-test was conducted (Table 4). Interestingly, the t-test results show that there are no significant differences between the application of irrigation and the scale of production. The number of coffee plants, fruiting plants, average coffee production per tree, and total coffee production was indifferent between those respondents who apply irrigation and those who do not.

Table 4: t-Test Tables of Irrigation and Scale of Production

Statement	Committee Member	N	Mean (Sd)	t-value (df)	Sig. (2-tailed)
Number of coffee plants	yes	14	51.43(51.4)	1.6 (46)	.105
	no	34	214.7(365.5)		
Number of coffee plants fruiting	yes	14	35.36 (42.1)	1.5 (46)	.120
	no	34	89.29(123.8)		
Average coffee production per tree (kg)	yes	14	10.464(15.3)	1.1 (45)	.246
	no	33	6.894 (5.5)		
Total coffee production in 2008/09 (kg)	yes	14	97.79 (96.3)	.62 (44)	.537
	no	32	129.88(181.1)		

In order to analyze further reasons for the result of Table 4, cross tabulation was performed between the application of irrigation and the scale of production. Table 5 indicates the summary of cross tabulation. The results of cross tabulation showed that those who irrigate or apply water during the dry season are mainly the small-scale farmers. The numbers of plants of those who irrigate are less than 100 trees, and also the numbers of fruiting trees are no more than 150. Additionally, the average coffee productions per tree are less than 10 kilograms, and the total coffee production in 2008/2009 was less than 150 kilograms for those who apply irrigation. Therefore, this indicates that small-scale coffee producers apply irrigation more frequently than larger scale coffee producers. Hamsapur has a water shortage during the dry season and farmers have to carry water from community water sources for irrigation. So, it is difficult for larger scale farmers to provide irrigation, while it is relatively easier for small-scale farmers to apply irrigation to coffee plants.

Table 5: Cross Tabulation, Irrigation and the Scale of Production

Statement	Irrigation		Total	
	yes	no		
Number of coffee plants	1-50	7	11	18
	51-100	6	8	14
	101-150	0	4	4
	151-200	1	2	3
	251-300	0	4	4
	301-350	0	1	1
	450 more	0	4	4
Number of fruiting plants	1-50	10	22	32
	51-100	3	5	8
	101-150	1	1	2
	151-200	0	2	2
	251-300	0	2	2
	401-450	0	1	1
	450 more	0	1	1
Average production per tree (kg)	1-5kg	9	18	27
	6-10kg	3	9	12
	11-15kg	0	3	3
	16-20kg	0	1	1
	21-25kg	1	0	1
	26-30kg	0	1	1
	31kg more	1	0	1
Total coffee production (kg)	1-10 kg	2	2	4
	11-50kg	4	11	15
	51-100kg	3	8	11
	101-150kg	2	4	6
	151-200kg	1	1	2
	201-250kg	1	1	2
	251-300kg	0	2	2
	301-350kg	1	0	1
	350kg more	0	3	3

In addition, there is a coffee committee in ward 2, 4, 5, and 8, which provide the support for coffee seedlings and technical support with the charge of 10 rupee as an annual fee. Is there any difference between the members of coffee committee and the non-member? Independent sample t-Test was run to see the difference in scale of production between those who are the members of coffee committee and those who are not. Table 6 shows the result of the t-Test. Number of coffee plants, coffee plants fruiting,

and average coffee production per tree are not statistically significant, but t-Test result shows the statistically significant result in the total coffee production in 2008/2009. This is because coffee trees take about 3 years till harvesting, so the result of the independent sample t-Test shows the significance in only total coffee production.

Table 6: t-Test Table of Coffee Committee Members and Scale of Production

Statement	Committee Member	N	Mean (Sd)	t-value	Sig.(2-tailed)
Number of coffee plants	yes	22	176.3 (190.4)	.18	.855
	no	26	159.3 (397.1)		
Number of coffee plants fruiting	yes	22	87.4 (108.0)	.81	.423
	no	26	61.8 (110.5)		
Average coffee production per tree (kg)	yes	21	9.4 (6.9)	.97	.333
	no	26	6.7 (11.2)		
Total coffee production in 2008/09 (kg)	yes	21	177.3 (207.6)	2.33	.024
	no	25	72.0 (81.1)		

Moreover, Table 7 shows the result of cross tabulation between the coffee training and the membership of coffee committees. This indicates that those who are members of the coffee committee had more training (19 respondents) than those who are not members of the coffee committee (9 respondents). Therefore, the result of Table 5 and Table 6 implies that farmers' participation in coffee committees has contributed to increase both scale of production and participation in coffee training.

Table 7: Cross Tabulation, Coffee Committee Members and Coffee Training

		Coffee Committee		Total
		yes	no	
Coffee training	yes	19	9	28
	no	3	17	20
Total		22	26	48

After asking producers questions about production practices, questions about selling were asked. Total incomes from coffee in 2008/2009 as well as the percentages of income from coffee out of their total income were displayed in Table 3. Farmers receive payment for coffee from the collectors in the village, and the collectors receive payment through the Kaski District Coffee Producers Association (DCPA), which receives payment from the local coffee buyer. The producers receive some of the payment at the beginning of the coffee harvesting season through collectors, and they receive the rest of the payment after the harvest. It should be noted that the minimum price of coffee farmers receive is fixed by the National Tea and Coffee Development Board (NTCDB) every year, and in year of 2008/2009, the minimum price of green beans was set at 27 rupees per kilogram. Almost all (95.8 %) of the respondents said in the year of 2008/2009 they sold their coffee to the market through the coffee collector. The respondents sold an average of 90.5 % of their production to the market, and they consumed the rest of the coffee in their household. The average income from coffee per producer was 2,982 rupees with a maximum of 22,700 rupees and a minimum of 54 rupees. Additionally, the respondents were asked about the percentage of their overall income that came from coffee. However, this question seemed to confuse many respondents because some of the farmers did not know their entire incomes, or they simply did not have the concept of incomes. Based on responses from those who answered this question (32 out of 48), an average of 6.6 % of household income came from coffee production. This indicates that the income from coffee is small percentages of their entire income. The respondents answered that they spend the income from coffee mainly for household expenses (72.9%) and their children's education (20.8%).

The producers were also asked about their information source for the price of coffee. Over half (52 %) of the respondents said they found out about the coffee price through the Kaski DCPA, and two out of five (42 %) answered that they learned from the coffee collectors. Although they heard the official prices through DCPA or the collectors, I often heard farmers' comments that they were confused about the prices of coffee or felt that the prices had not been fair. One of the reasons for their concern was delay of the payment from 2008-2009 production years. None of the producers had received the payment until July 2009 when I was conducting the fieldwork. Also, some of the farmers mentioned the significant price decrease over the past decade. So, the farmers were anxious about how to figure out the situation of the coffee market because they must sell their entire coffee production to one company. One of the respondents said;

"I want to see the list of prices because I do not know the price."

The following section looks into the challenge of coffee production and selling in detail.

Challenges of Production and Selling

Table 8: Challenge of Production and Selling

	Count*	Percentage
Challenges of Production		
Irrigation	38	79.2%
Rats	27	56.3%
Hailstones	17	35.4%
Disease	8	16.7%
Shade management	5	10.4%
Lack of training	4	8.3%
Pesticide	2	4.2%
Labor intensive	2	4.2%
Fertilizer	1	2.1%
Challenges of Selling		
Unfair prices	25	52.1%
Delay of the payment	5	10.4%
Transportation of coffee	5	10.4%
Lack of market	5	10.4%
Other**	8	16.7%

*Count includes multiple answers.

**Other includes high labor and not enough collectors.

Additional questions focusing on the challenges of production and selling were asked to the respondents (Table 8). Regarding production, four out of five (79.2 %) respondents mentioned irrigation as the biggest challenge. As shown in Table 3, 70.8 % of the respondents do not apply water or irrigation to coffee plants during the dry season. Next to irrigation, rats and hailstones were mentioned as other challenges of production. 56.3 % of the respondents said they were concerned about rats. One farmer stated:

“Rats eat about 20 kilograms of the production during the harvest seasons.”

Additionally, farmers said that hailstones caused damage, and sometimes complete destruction of plants. Both rats and hailstones affect not only coffee plants but rather all agricultural products. However, farmers did not have any strategy to prevent rats from eating coffee beans. In addition to these challenges, farmers need to be aware of disease

and shade tree management as these might cause severe issues for the future coffee production in Hamsapur. Literatures suggest that coffee plants, especially Arabica species, grow better in the shade because coffees have been traditionally been grown in tropical forests as part of intercropping (Moguel and Toledo, 1999). Insufficient shade tree management could cause “white-stem disease,” a disease that completely destroyed coffee plants in many coffee producing nations. The case of coffee production in Sri Lanka provides an example of the potential devastation of white-stem disease. In the 15th century, Sri Lanka was one of the major coffee producing nations, but mass production without proper shade tree management caused the outbreak of white-stem disease and completely wiped out the production (Crawford, 1852). Under colonial policy the country shifted to tea production. Therefore, even though only 10.4 % of the respondents in Hamsapur recognized shade tree management as a challenge of production, careful attention must be paid to such issues.

Moreover, questions regarding the challenges of selling were also asked. More than half of the respondents (52.1%) answered that unfair prices have been the major challenges of coffee sales. Many of the respondents said they do not think they are getting fair payment and that the price of coffee has been decreasing. The respondents lamented:

“We are not getting the payment on time, and also not getting fair prices for the products. If farmers are getting higher prices, farmers will be more encouraged.”

“I am not going to pick all fruits anymore from this year because I am not getting fair prices.”

Farmers were also discouraged by the decrease of coffee prices. One of the respondents said:

“I don’t think we are getting fair prices. We used to get 95 rupees per kilogram around 7 years ago and price has been decreasing since then.”

Following low prices, delay of payment was also raised as a challenge of coffee sales (10.4%). One of the respondents said she had not received payment for 8 months and did not know when she could expect it. The respondents said this was the only year the buyer had not paid the producers, but it appeared to discourage many of them. Some of the producers even cut down the coffee trees because of the continuous low prices and the delay of payment. None of the respondents knew why there was a delay in the coffee payment, and there was no explicit explanation from the buyer either.

In addition to these challenges, transportation of coffee and lack of market were also raised as challenges of coffee sales. The farmers have to carry coffee cherries to the collectors’ house which are located in wards 1, 4, 5, and 9, immediately after the harvest. Since these coffee-collecting locations had not been chosen systematically, but were based on the trust and recommendations from villagers, some of the collectors’ houses were located in inconvenient places. So, some of the farmers have to carry heavy loads of coffee cherries every time they harvest. Moreover, a few respondents (10.4%) mentioned that lack of market was a challenge. The respondents said:

“There is a necessity to increase the production quality, but there should be a proper market.”

“There is no market for coffee.”

Farmers thought that there was not enough market for coffee sales, even though they were promised a good market and greater sources of income. How do the respondents see overall coffee production? The next section focuses on the respondents’ perspectives on coffee production.

Farmers' Perspectives on Coffee Production

Initially through the support of CARE Nepal and later continued by Indragufa, coffee was promoted as an income generating project in Hamsapur. But I was curious to know how farmers see the prospect of coffee production in Hamsapur. Do they think it has been beneficial to them as well as to the overall community? Do they want to continue coffee production? Where do they think the most supports are needed? Questions regarding farmers' opinions about coffee production were asked at the end of the interviews with producers.

Table 9: How Did Coffee Production Help the Improvement of Community?

Benefit of coffee production	Count*	Percentage
Economic benefit	32	66.7%
Utilize the land	7	14.6%
Less labor	4	8.3%
Employment opportunity	2	4.2%
Simple way of farming	2	4.2%
Education for children	2	4.2%

**Count includes multiple answers.*

First of all, to the question, “Do you think coffee production has helped the improvement of your community?” an overwhelming number of respondents (97.8 %) answered ‘yes.’ Table 9 shows that a large numbers of respondents believed the coffee production had helped the community. About two thirds (66.7 %) of the respondents indicated that coffee offers economic benefit to households followed by utilization of land and less labor required. Additionally, farmers also recognized the economic benefit of coffee compared with other agricultural products. When the question, “What is the most profitable products you sell?” 29.2 % of the respondents answered “coffee”, 22. 9 % answered “oranges”, and 4.2 % replied “vegetables.”

However, those who responded that coffee had helped the improvement of their community also offered additional comments. They said they did think the coffee helped the household finances significantly, but some said with certain conditions.

“Coffee is the most profitable crop, and does not require much labor. But there should be fair prices and proper market.”

“Of course it will improve the community if the farmers increase the production quality. But people are not active in coffee farming anymore because of unfair prices and payment delay.”

“If there is a good market and can sell to the market, it will help the community.”

Thus, although many farmers responded coffee had improved the community, these comments showed they still thought fair prices and a better market for coffee was necessary. These comments were echoed in responses to another question. Almost three out five respondents (58 %) said they were interested in planting more coffee on their farms, and the rest of the respondents said they do not want to plant more coffee plants. Of those 42% respondents, half of them mentioned the prices and insufficient market as the reasons. Following are some of the comments from respondents:

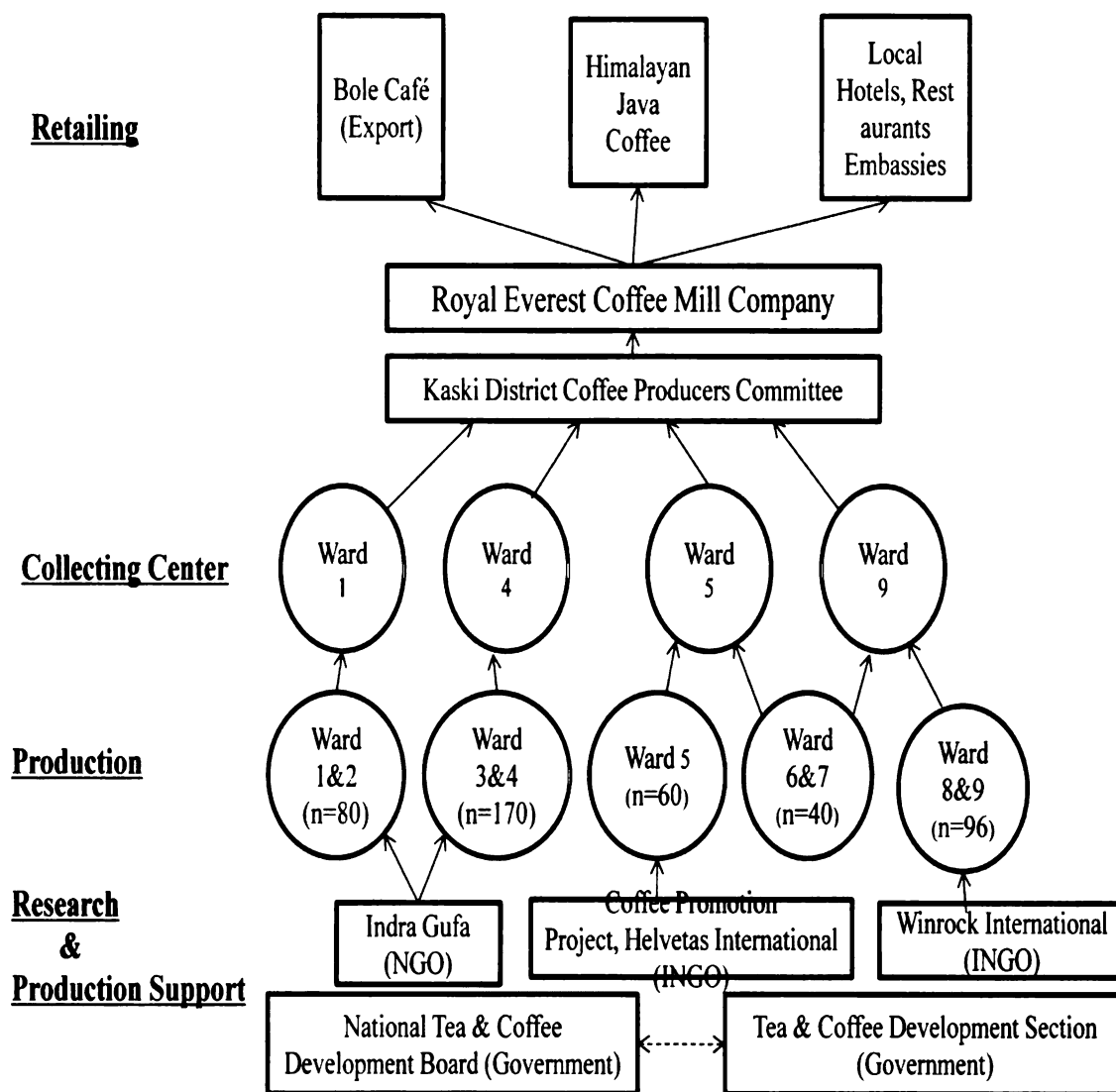
“I do not want to plant any more coffee because I am not getting fair prices at the market.”

“Because I cannot get the payment on time, and there is no market for coffee.”

Therefore, the study showed that the respondents recognize the contribution of coffee production in their community, but farmers also see that fair prices and access to the proper market are insufficient under the current conditions.

4.3 Interview with Key Participants

Figure 5: Value Chain Map of Hamsapur Coffee



Interviews with key participants were conducted in order to assemble the value chain of coffee in Hamsapur. The following key informants were interviewed: four coffee collectors in Hamsapur, the president of the Kaski District Coffee Producers Association (DCPA), the representative of Indragufa, the representative of the National

Tea and Coffee Development Board (NTCDB) and the Tea and Coffee Development Section, the project manager of Coffee Promotion Project (CoPP) by Helvetas Nepal, Winrock International, and from the distribution side, the president of Nepal Organic Coffee Products, Royal Everest Coffee Mill Company, and Himalayan Java Coffee. In addition, in order to study examples of the retail side of agriculture commodities, interviews were also conducted with the president of the Organic Village, an organic retail store in Kathmandu, and the coffee project manager of Alter Trade Japan, a trade retailing company in Tokyo. Figure 5 is the value chain map of Hamsapur coffee, and the map indicates the relationship among these key informants and coffee producers. There are multiple organizations and international development agencies supporting Hamsapur coffee development, but coffee is distributed by only one company, Royal Everest Coffee Mill. Next I explain the role of each organization and company.

The NTCDB and Tea and Coffee Development Section are governmental organizations promoting coffee development in Nepal. In 1993, NTCDB was established as a special commodity board under the Ministry of Agriculture under the Tea and Coffee Development Board Act of 1992. The objective was to strengthen tea and coffee sectors in Nepal. There are 10 officers who specialize in coffee development in the Kathmandu and Pokhara office. Their support activities focus on policy formulation, feasibility studies, capacity building for tea and coffee production, market survey, and quality management. In addition, the Tea and Coffee Development Section is another governmental organization dedicated to the development of tea and coffee in Nepal. While NTCDB focuses more on the policy and organizational development of coffee, the Tea and Coffee Development Section mainly provide the extension services to tea and

coffee producers as a part of the Ministry of Agriculture. Their producers' support includes providing a coffee nursery as well as soil testing at a national laboratory. Coffee producers can reach them through the regional office of the agriculture development offices.

In addition to governmental support, the international development agencies are also playing critical roles in the promotion of coffee sectors in Nepal. Coffee Promotion Project (CoPP) is a non-profit organization promoting Nepalese coffee as part of Helvetas Nepal, the Swiss government supported international development agency. Because Helvetas initiated the promotion of coffee in Nepal, their activities cover a wide range including research, production and marketing support. The involvement of Helvetas Nepal in the coffee sector began in the 1970s. The Palpa district started to plant coffee trees as soil erosion projects under the Swiss Association for Technical Assistance (SATA). After the economic benefit of coffee was recognized, coffee production was promoted by SATA in the late 70s as an income generation project. Thus, Helvetas Nepal took an initiative of coffee promotion to a national scale. Currently, CoPP provides training to resource persons in the District Coffee Producers Association (DCPA). CoPP focuses on Hamsapur village in addition to other areas.

Winrock International is another international development agency that has been supporting the coffee sector in Nepal. The involvement of Winrock International started in 2002 when the project, the Tea and Coffee Global Development Alliance (TCGA) was launched in collaboration with U.S. Agency for International Development (USAID). The project continued as a part of the Small Holders Market Initiative Project (SIMI) in 2007, but the coffee program phased out in September 2009. The initial involvement of

Winrock International focused on the production side. Winrock International implemented a project called “Farmers to Farmers” to help with the distribution of coffee seedlings to those farmers interested in coffee farming. In Hamsapur village, the producers in ward 9 mentioned that they received their coffee seedlings through the “Farmers to Farmers” program. Additionally, in order to implement wet-processing, coffee pulping machines were distributed through collaboration with the Royal Everest Coffee Mill Company. Thus, although some farmers said they received the pulping machines from the Royal Everest Coffee Mill, actually the machines were a direct result of Winrock’s support. Because of Winrock’s international involvement in agriculture, they also invited coffee experts from El Salvador and Indonesia to train Nepalese coffee collectors. Since 2007, they focused on the marketing side, providing subsidies for the U.S. Department of Agriculture (USDA) organic and fair trade certification in the Gulmi district of Nepal.

There are also local level supports for coffee development. Indragufa is a non-governmental organization based in Hamsapur village and dedicated to the development of livelihood support. As Figure 5 indicated, all coffee produced in Hamsapur is collected by the District Coffee Producers Association (DCPA). The Kaski DCPA, consisting of 93 coffee communities in the Kaski district and 13 board members, is partially supported by the government. They charge each member 10 rupees and require each to have over 100 coffee plants. In return, they provide extension services such as technical support and production advice. During the coffee harvest season, they hold a meeting every month to discuss issues and farmers’ requests at the district level. Indragufa relies on the Kaski DCPA as an advisor for coffee production. Additionally, DCPA functions not only as an

extension service but also as a connector between the buyer and producers. Coffee collectors receive payment through the Kaski DCPA as an exchange of charging 2 % of the commission from a buyer as a return.

While the government and the international development agencies focus on production research and support, the coffee market has been developed mainly by private sectors. The Royal Everest Coffee Mill Company purchases coffee beans from the entire Kaski district through the support of the Kaski DCPA. The company, established in 1992, started as a tourism business in Kathmandu, and expanded to the coffee marketing business because of lack of the market for Nepalese coffee despite the increased volume of production. The company is involved with the coffee supply chain at each village production level. They started coffee collecting from the Kabre district and moved to the Kaski and Sindhupalanchok districts and after several years, their coffee collection spread into 8 districts. Currently, they purchase approximately 70 metric tons of green beans from all over Nepal, and they export 75 % to Japan. About 20 % of the coffee beans go to the export market in the United States and the rest, about 5%, is sold in the domestic market. Since the company is aware of the importance of quality for the international export market, they helped to create farmers' groups in every district and also provided training to coffee collectors. In the case of Hamsapur, the Royal Everest Coffee Mill not only helped to create the village coffee committee, but they also provided the coffee pulping machines with the collaboration of Winrock International. In addition, the company also provided the office space for the Kaski DCPA. These imply the deep involvement of the company in the coffee value chain from the production side. DCPA also functions as the mediator between producers and a buyer. The Royal Everest Coffee

Mill gives feedback to the district coffee committee, and the district will give the feedback and technical advice to coffee producer groups. I also conducted an interview with the owner of the Himalayan Java Coffee, the largest coffee shop in Kathmandu, established in 2000. They have a high reputation of serving quality coffee in the city and expanding their business to local department stores and airports. They also purchase 20 % of their coffee beans from the Royal Everest Coffee Mill, and the rest of the coffee beans served at the coffee shop are roasted by Himalayan Java Coffee themselves.

Different questionnaires were used to interview key informants based on their positions and roles. These questionnaires are included in the appendix. During interviews with the key informants, I organized the key informant interviews around challenges facing the coffee sector in Hamsapur. They are: 1) quality management, 2) certification, and 3) organizational issues.

Quality Management

During interviews, key informants frequently commented on challenges related to quality management. The majority of the coffee production is exported to the international market, so quality management is the biggest challenge for coffee production in Nepal. Since Nepal focuses on high quality Arabica coffee, quality management is essential. All the key informants are highly aware of the importance of quality, perhaps more than coffee producers. The representative of the Royal Everest Coffee Mill Company said that the company was established in order to increase the quality of coffee at the farm level. The company began exporting coffee to Japan, where the majority of Nepalese coffee is currently exported. The exporter asserts the importance of quality to the company. He said,

"Japanese coffee buyer told us that Japanese are very conscious about the quality, so we should control the quality at the farm level, not just factory level. That is why we established our own company, and we made farmers' group in every district and gave them training." (Royal Everest Coffee Mill)

However, as the finding from the farmers' interviews showed, quality management has not reached the farm level in Hamsapur. Thus, although Nepal provides an excellent growing condition for Arabica coffee, the quality is not properly managed. The project manager of CoPP said,

"Even production standard is not there. Some farmers started coffee in monsoon, and not enough compost is made. This orchard management has to be improved as well as brewing. So that is one way to improve the quality of coffee. When it comes to harvest, if you go to the pulping center, farmers mix green and fresh cherries and over ripe ones. All these things are the areas for improving." (Coffee Promotion Project)

Based on interviews with the key informants, the following are the major challenges affecting the quality of coffee: 1) lack of water and shade tree management; 2) scattered and small scale of production; and 3) insufficient numbers of coffee educators or farmer advisors. First of all, as 79.2 % of the coffee producers indicated irrigation is a challenge of production, the key informants were also aware of the challenges of insufficient water. Water plays a critical role not only for irrigation but also in wet-processing which produces higher quality coffee (Moguel and Toledo, 1999; Vossen, 2005; Winston et al., 2005). After the harvesting, farmers bring coffee cherries to one of the four coffee collectors in the village where they process coffee cherries by using pulping machines. Coffee cherries will be soaked in water for the fermentation process for 24 to 36 hours. This requires large amounts of water. However, since the coffee harvesting occurs during the dry season in the village, i.e., October to March, it is challenging for coffee collectors to apply such a process. Because of lack of water for the

fermentation process, Nepalese coffee contains less acidity and has a mild flavor compared with coffee produced in Central and South American countries. Retailers made the following comments:

“We have lack of water in remote area, so that is one challenging part of quality control because after pulping, we ferment for 24 hours, and we should wash for 3 times, and we do not have the water for washing. Then, after washing also, we need to put the beans 24 hours again into the water, but we do not have enough water, and that is why our Nepali coffee is less acidic.” (Royal Everest Coffee Mill)

“We don’t have sufficient water to wash the beans, and that is the big problem. People even don’t have enough water to drink. So how you can manage to wash actual beans?” (Himalayan Java)

In addition to water scarcity, the lack of shade tree management for coffee plants was also raised as the concern for quality management by the key informants. Although only 10.4 % of farmers mentioned shade management as a challenge of their production, it is important to plant coffee in the shade because otherwise plants may be affected by “white-stem” disease as in the case of Sri Lanka had been explained above. Many of the key informants were concerned of the potential devastating impact of this disease.

“One of the problems we have in cultivation is white-stem disease. We have no idea how to control this insect. One thing we can control by giving them shade, but we do not know. Maybe in the future, coffee can be destroyed by this insect like what happened in Sri Lanka” (Royal Everest Coffee Mill)

“Those who do not have shade will be the victim of white stem disease. I have seen many plants which are affected by white stem in Gulmi district. Those plants which are under the shade are quite healthy, but 7 % of shaded coffee also gets white stem disease. However, white stem disease in non-shaded area goes up to 25 %.” (Tea and Coffee Development Section)

Secondly, inconsistency of coffee beans due to the scattered and small scale of production is also a challenge to quality management. Because the village is located at mid hill region and farmers produce their coffee on their own farms, coffee plants have been planted randomly in Hamsapur. In addition to production, the collection of coffee is

also not efficient. Those four collectors in the village were selected not by location, but by availability and trust. The collectors were chosen based on social contacts and rapport with the local farmers, and water accessibility was not a criterion at the time of the distribution of pulping machines. Thus, some of the collectors are far from water sources making wet-processing harder. The project manager in CoPP also pointed this out. He said:

“Main problem is this pulping center (collecting station) is not scientifically selected areas. Somebody got the pulper, and he started the pulping center. You will not see well functioning pulping centerso reallocation of pulping center can also increase the quality of coffee, and that way we can reduce the cost of dry parchment.” (Coffee Promotion Project)

Scattered small-scale production is a problem both because of the quality issues it creates and because of inefficiency due to low volumes. This also creates another challenge to quality management. The following are some of the comments from the key informants:

“It is very difficult to give the service to small and scattered production because cost of production will be very high.” (Tea and Coffee Development Section)

“We go to the district coffee, and coffee production is scattered all over the district. You go to one district, and there is one group with 25 members, and maybe 500 plants in that village. In such a scattered production, we cannot increase the production and the quality.” (Coffee Promotion Project)

“...when you actually buy coffee in such small quantity from different farmers, there is no way we can control the quality of coffee” (Himalayan Java)

Finally, and perhaps most importantly, there is a lack of coffee experts in Nepal. Although there are multiple organizations involved with coffee promotion, some of the key informants mentioned that only a few people actually have coffee expertise because most of them are political appointments. The key informants commented as the followings;

“.....still we are facing lack of coffee expert. We do not have coffee experts in Nepal.” (Royal Everest Coffee Mill)

“.....because the problem is in coffee there are not many people who knows coffee, it's not like fruits or vegetables you can find trained people.” (Coffee Promotion Project)

In order to fill in such a gap and to educate more coffee experts, the National Tea and Coffee Development Board initiated the local technician development program in collaboration with the Ministry of Education as part of the Center for Technological and Education Program. They selected those farmers who are interested in becoming a resource person and provided training on coffee production. As a result, currently, there are 29 certified local technicians who are available in all potential coffee growing districts in Nepal. Such grass roots coffee experts are critical to promote coffee at the community level.

Challenges of Certification

Third party certification such as organic and fair trade contributed significantly to the promotion of niche markets. Many consumers use labeling as a signal for supporting certain production practices when they purchase coffee. Because of the strong demand of such labeling for coffee, the certification has become a requirement to enter the global coffee market. One of the retailers said,

“....during the marketing, many customers ask organic and fair trade labeling. So, in the future, after organic certified, we are also going to apply for fair trade labeling because we need that type of labeling in long-term market. Without that labeling, we cannot do long term business in international market.” (Royal Everest Coffee Mill)

However, the third party certification system has also been criticized as it is causing further challenges to producers because of its high certification costs and high quality

standard (Bacon, 2005; Jaffee, 2007). Because it requires more effort on input and production management, price premium of certification does not necessarily mean economic improvement for producers (Kilian et al., 2006). The certification has been criticized as becoming a passport to enter the international market rather than playing roles for livelihood support for small-scale farmers (Kattela et al., 2009). The Nepalese coffee sector is also facing the challenges of certification as the majority of the coffee is exported to the international market (Bhat, 2009). These concerns regarding certification challenges were raised by many of the key informants during the interview. The representative of the National Tea and Coffee Development Board said,

“.....the world consumer is asking for quality coffee, and quality assurance is done through organic certification. And another part is certification process has made so difficult and expensive, which Nepalese farmer cannot afford. Unless they go to group certification, that process is not possible for Nepalese farmers. So, how can we make it farmer friendly is another issue.” (National Tea and Coffee Development Board)

Another challenge to producing countries of certification is that each country and each region sets different rules and standards of organic and fair trade. So, traders are forced to focus on a specific country because of its long certification process and high cost. This limits the potential to export to other nations when the focused nation has a lower demand. The representative of Winrock International commented on this point:

“The problem of this certification is different countries have own standard.” (Winrock International)

Also, the president of the Organic Village, an organic retail company, said,

“If farmers do not have to pay for the certification cost, it is fine. But the certification cost is so high, so it is killing farmers. If big farmers, certification cost comes up like 1 %, which is fine. But if it is less volume, certification cost will come up like 12 %, and it will make the real consumer prices very high and we cannot compete at the market.” (The Organic Village)

Moreover, another concern is that introduction of the certification system might also marginalize small-scale farmers in the future. The standardized high quality coffee requires larger scales of production, which will be challenging to small-scale farmers like those in Hamsapur. The majority of small-scale farmers are not planting coffee in a systematic way, and it will force them to give up on the production because they will not be able to meet such a high standard. The representative of the Royal Everest Coffee Mill said:

“In the process of quality control, the numbers of small farmers will be reduced because we need large area of production for quality control. If they are small scale, we may refuse to buy their products. It means big farmers for commercial coffee producers only left in the future. So maybe that will be the easy way to certify the fair trade and organic.” (Royal Everest Coffee Mill)

Therefore, if the current certification system is continued, it may undermine one of the initial purposes of coffee production: poverty alleviation for small-scale farmers.

However, as discussed above, the small-scale production has been an obstacle for quality control. Thus, the challenge remains as to how small-scale producers in a poor country like Nepal truly benefit from the international niche market.

In order to overcome these challenges of certification, the government is promoting an organic certification program called “certification alliance” (CertAll). It is a group certification alliance established in collaboration between China, Thailand, Italy, Sri Lanka, Laos, Indonesia, Malaysia, Vietnam, and Nepal. This group certification system allows low cost organic certification to small-scale producers. Since more than 70 % of agriculture trade occurs in Asia, CertAll is cost effective for both producing and consuming countries. According to CertAll:

“Being part of Certification Alliance allows organic sector organizations in emerging markets to develop competency and offer an internationally accredited inspection and certification service to local operators, at a reasonable cost.” (CertAll)

Additionally, governments and international development agencies are promoting “Internal Control System” (ICS) or “Participatory Guaranteed System” (PGS), which refer to the practice of monitoring organic production within the community (Khosla, 2006; Luttikholt, 2007). PGS is an alternative certification system which has been suggested by the International Federation of Organic Agriculture Movements (IFOAM), an international non-governmental organization dedicated to organic agriculture development worldwide. It is a process of certification witnessed by local community groups and the government to guarantee that production has been done organically. Unlike the United States and European based third party certification systems, PGS requires less paperwork, costs less, and certified adjusting with the local socio- and ecological environment (Khosla, 2006; Luttikholt, 2007). Thus, PGS could be used as an alternative organic certification for marketing. According to the project manager of Helvetas,

“The requirement of organic coffee is not there in Nepal yet. But when we do internal control system (ICS), we do that training, what is the organic requirement for organic production of coffee, how to avoid contamination and water fermentation or all these things.” (Helvetas)

Thus, alternative certification systems such as organic certification alliance, internal control system, and participatory guaranteed system will make it easier and more affordable for producers to be certified and to gain higher market values for their coffee.

Organizational Challenge

The key informants also discussed organizational challenges. While quality management and certification challenges are at the production level, organizational challenges are more challenging and more important because they include issues at the political level. Limited number of traders in the district and inadequate support from the government were raised as the major organizational challenges. First, one company, Royal Everest Coffee Mill, purchases coffee from both Hamsapur village and the entire Kaski district. According to the representative of Coffee Promotion Project, specific coffee buyers dominate each district in Nepal:

“Traders had identified their district. Ok this district is for that trader, that type of arrangement was there. So it was very difficult to break that, and still certain district they cannot sell the coffee to another traders....we try to bring different traders to different district, but we were not able to do that in all the districts. Even this market facility committee, we were not able to establish in all the district committee because they didn't want that because of the trader. They don't have the option.” (Coffee Promotion Project)

Because of the community level involvement of these companies, it is difficult for other buyers to enter the district, thereby preventing competition among buyers. In the case of Hamsapur, Royal Everest Coffee Mill has been involved with the coffee growers since the beginning of the coffee production, and they had developed a network including monitoring and collecting systems within the community. Although the company significantly contributed to the development of coffee production in the village, monopoly of the market has also created a lack of transparency including a lack of information about coffee prices and delay of payments. Many of the farmers commented that they feel they are not getting fair prices, and some of the respondents even said they feel exploited by the trader. If there were another buyer in the village, farmers would

have been able to access the information about prevailing coffee prices and they could choose a buyer offering them better prices. However, the current sales system makes it impossible for other buyers or companies to intervene. Additionally, there was a delay of the payment for the 2007-2008 harvest, and farmers were not given an adequate explanation as to why it occurred. Those farmers who were discouraged by payment delay even cut down coffee trees. The trader's explanation was simply "due to the world economic crisis" which for producers was very unclear. Thus, the monopoly of the buyer is creating such a lack of transparency, particularly in terms of information about coffee prices and the market. A representative of the Coffee Promotion Project said:

"We want to diversify the market. We don't want a trader who wants to buy in the bulk because we don't have that capacity. So, little amount, good price, and good quality, that is what we want." (Coffee Promotion Project)

Key informants also noted that political instability contributed to both insufficient supports from the government and distrust of the government. First of all, despite the government's priority of coffee promotion, the support from the government to the coffee sector is insufficient (Blaikie et al., 2002; Brown and Kennedy, 2005; Shrestha et al., 2007). Although, there are multiple organizations supporting coffee promotion, there are a few organizations dedicated to coffee development support. For example, the National Tea and Coffee Development Board (NTCDB) focus primarily on tea sectors. Their leadership and influence on the coffee sector is not significant. Although they provide extension services to each district, the scale is small and its influence is questionable. Because of the lack of support from the government, the private sector had contributed significantly to Nepalese coffee industries on both the production side and the marketing side. However, in order to shift coffee production to more farmer-oriented production, further research

and investment by the public sector is critical. The project manager of Coffee Promotion Project, the only international development organization focusing on coffee development in Nepal, said:

“We want this National Tea and Coffee Development Board to be strong enough to implement some activities and the government funded research. There are not many programs on coffee, and the government must have some coffee production program. So, we are asking for a separate coffee board because there will be no seriousness without it. But what the board is saying is the production is very low, and so there is no need for separate board. Some people are saying to increase the production; there is the need for the separate board.”

Thus, the diversification of the coffee market is essential to increase the competition at the market, and for farmers to be able to choose the buyers.

Additionally, political instability affects the lack of government leadership in agriculture development. Increased grass roots activities of the Communist Party of Nepal (Maoist) led to the violent Nepal Civil War from 1996 to 2001. The murder of a member of the royal family in 2001 led to a political shift in power. The conflict between the democracy movement and activities of the Maoist party has contributed to the instability of the government in Nepal. Because of such political confusion, public sectors do not function as intended. Criticism of the government was often heard from the private sector, particularly because the private companies rather than the government had been the driving force of the development of the coffee industry. One of the local coffee shop owners made an interesting comment:

“If you think Nepali coffee is good, then why this is not in all over the world? Everyone is looking for good thing, but we do have (government) restrictions so that is why we cannot produce the quality products.” (Himalayan Java)

The support for private companies growth in Nepal is not adequate making business growth difficult or sometimes even impossible (Aryal, 2003). The following are comments from the private sectors:

“.....it is very difficult to do everything in Nepal when nothing happens. One thing is you need the backup for everything in this country.....still the bottom line is politics. Private industry cannot basically grow because we have so many issues we cannot grow. We would like to invest more into our business, but we have a restriction everywhere. Everything, we are boxed out. In Nepal, any kind of business, there are so many things you have to consider, labor crisis, electricity crisis, water crisis, food crisis, fuel crisis...” (Himalayan Java)

“We have a lot of problem that is the government. First time I try to ship my coffee, I had to order a container from Singapore. So I told them our government does not have the container? And they said no. We have no containers in Nepal. If the government has some kind of containers, we can ship cheaper.” (Royal Everest Coffee Mill)

These comments from the private sector show frustrations with the government.

Government leadership is necessary for further expansion in the private sector. In addition to the lack of infrastructure, agriculture research by the public sector, including research on coffee, is also not sufficient (Kattela et al., 2009). Shrestha et al. (2007) discuss this lack of agriculture research investment in Nepal. They write, “Present investment is less than 0.20 % of Agricultural Gross Domestic Product (AGDP) which is below the international norm of providing at least 1 percent of AGDP for agricultural research.” Several studies have shown the importance of research on growth in agriculture (Thirtle et al., 2003). This is also an indicator of the lack of leadership in the government. Many key informants mention Nepal’s high potential to grow high quality coffee. However, the unstable political situation is preventing the coffee industry from expansion.

4.4 Discussion

The interview with coffee producers followed by the interview with the key informants showed a gap between the grassroots and retail side and the government side of the coffee value chain. Farmers hold different views from the key informants, and also there are disagreement among the key informants. Below I present a detailed discussion of the Hamsapur value chains and examining the findings from the interviews with producers and the key informants as well as the secondary data.

Coffee Market and Price

First, while 10.4% of the farmers raised “lack of market” as a challenge of coffee sales, both coffee suppliers and the government mentioned that Nepalese coffee has high international demand. Looking across producer and key informant interviews highlights differing perspectives and seemingly incompatible comments. The coffee producers mentioned,

“There is no market for coffee.”

“Coffee is the most profitable crops, but there should be fair prices and proper market.”

On the other hand, one of the traders even mentioned that the supply of Nepalese coffee has not met the international demand. The owner of the Himalayan Java coffee shop said,

“Although we have a market and we have a buyer, we are not even meeting the demand. We have the market and the buyer, but the supply is not there.”
(Himalayan Java)

The disagreement about the coffee market between coffee producers and suppliers was based on the different view of the coffee price in Nepal. As the farmers’ interview indicated, 52 % of the respondents thought the price of coffee was unfair and brought this

up as one of the biggest challenges of selling. Also, the decreasing price of coffee and the delay of the payment influenced producers' view of coffee prices. One farmer said,

"The price of coffee has been the same while other producer prices have increased."

In addition to the decline of prices, the delay of the payment negatively affected the motivation of the producers. None of the producers had received payment even a few months after the end of the harvest season. According to the Kaski District Coffee Producers Association, this is the first year the Royal Everest Coffee delayed the payment. However, many of the farmers were particularly frustrated about the delay of payment because they received no explicit explanation for the delay. Those farmers who were especially discouraged by low prices had cut down their coffee trees. Many respondents asked me to find out the official price of coffee because they felt they were not well-informed, and some of the farmers even said they felt they were exploited by the trader. The following are comments from the respondents.

"I want higher prices of coffee, and I want to see the list of prices because I do not know the price. I also want the good market for coffee. I am quite upset because I have not received the payment on time."

The delay of the payment had developed as distrust to the trader, and the project manager of the Coffee Promotion Project also recognizes this. He said,

"There is a rumor that a trader is selling coffee in 15 dollars, and farmers are getting only 27 rupees. That is also de-motivating pattern, I think." (Coffee Promotion Project)

On the other hand, the key informants thought that Nepalese farmers were paid higher prices compared with other coffee producing nations. Some of the key informants said Nepalese coffee producers received more than fair prices, so there should be enough incentive for the producers. The owner of Himalayan Java Coffee said,

“(What Nepalese coffee producers are getting is) more than the fair price, so we do not need the big fair price logo or anything. It is already fair price.” (Himalayan Java)

Also, the representative of CoPP said,

“The official price is now 27 rupees per kilogram, and that is very good price. I think even if you compare with India or Africa, Nepalese price of coffee is very high. I do not see there should not be any motivation issue for farmers to plant coffee to get that price because coffee can compete with any crops except vegetables.” (Coffee Promotion Project)

The comparisons of the comments from the producers’ side and the key informants’ side show the need for further investigation. In order to see the comparison with other coffee producing countries, Table 10 shows the list of coffee prices among Asian coffee producing countries. It indicates the producer price of green beans, which means the price the collector receives after pulping. According to this data, producers in Sri Lanka receive significantly higher prices compared with producers in Nepal. However, Nepalese producers receive higher prices than those in Indonesia, the fourth largest coffee producing country in the world. Thus, the comparison with other coffee producing nations does not provide a conclusive answer whether Nepalese coffee producers’ prices are fair.

Table 10: Coffee Price Comparison (2007) Source; FAOSTAT
(<http://faostat.fao.org/>)

Country	Producer price (kg)
Nepal	\$1.36
India	\$1.54
Sri Lanka	\$2.09
Indonesia	\$1.20

Table 11: 2009 Coffee Price and Revenues in Local Market

Producers 27Rs (US\$0.34)/kg	• Grow coffee trees, harvest fresh cherries and bring to collectors
Collectors 155Rs (US\$2.04)/kg	• Washing, pulping, fermentation, drying, and bring to DCPA (4.25kg fresh cherry=1kg dry parchment)
District Coffee Committee 3Rs (US\$0.04)/kg	• Collect coffee from entire district, takes 2% commission
Royal Everest Coffee 800Rs (US\$10.4)/kg	• Roasting, packaging, marketing(international export)

For further analysis of coffee prices, Table 11 indicates the distribution of coffee revenues. Producers receive 27 rupees per kilogram for fresh cherries, and collectors get 155 rupees per kilogram after processing. Collectors bring coffee parchment to the Kaski DCPA, and they take 2 % commission from these collectors. Then, Royal Everest Coffee visits the Kaski DCPA to receive coffee parchment from the entire district. The company sells the final product for 800 rupees per kilogram in the domestic market. This is approximately 30 times higher than the price farmers receive. However, the cost of production and processing should also be taken into consideration. The representative of the CoPP points out that coffee producers do not realize that they are getting good prices compared with their investment in coffee.

“We did the cost of production estimation. It was around 18 rupees per kilogram of fresh cherry, just discussing within the group. 18 rupees per a kilogram, this is higher part of cost of production, actually. But if you going to the farmers who are not investing in coffee, it will be lower than that. They are getting 27 rupees per kilogram, so it is already good profit for the farmers.” (Coffee Promotion Project)

Additionally, he points out that farmers do not realized how much processing is required for coffee to be able to sell the final product. He said:

“What farmers have to understand is how much investment they have been doing in coffee, and how much income they are getting. We have to convince these farmers, compared with other crops, and what is the cost benefit ratio from coffee. What farmers do not know is after buying cherries at 27 rupees, how much traders have to invest to prepare one kilo of green beans? And these rumors, all trader are not selling high prices, so traders should tell the farmers, ok this is what I am doing, and this is what my cost and I am giving you very good price. Then I think that will be some type of motivation. Otherwise, 27 rupees, every year, they demand the increase prices of coffee, and that is not possible to increase the price every year.”
(Coffee Promotion Project)

As the project manager said, producers do not know how much investment is required for coffee processing. And they do not realize how much they are getting for the amount they are investing. However, the issue here appears to be the lack of transparency on the retail side. Producers must be informed about coffee price including how much the retailer is selling to the market and how much it costs for them to produce the final product. Such lack of transparency and communication is creating disincentives for the producers, and it will eventually affect the quality of products because producers feel they are exploited by the retailers. Thus, the retailer must be aware of the importance of transparency for not only building better relationships with producers but also in order to improve the overall quality of coffee in Nepal.

Coffee as a New Commodity

Coffee is also increasing the demand in the domestic market in Nepal (NCTB, 2008). However, because of the prevalence of tea in Nepalese culture, filtered coffee remains a “foreign drink.” The commonly known coffee is called “milk coffee” which is an instant coffee mixed with milk and sugar. There are only a few restaurants that serve filtered coffee. The owner of the Himalayan Java Coffee commented:

“For people in Nepal, coffee was Nescafé, instant coffee. You add water, and that is the only coffee we had. No one knew even coffee actually comes from fruits. So, I think the biggest challenge is education, knowledge about coffee to consumers. A lot of people do not know how to drink coffee. They still do not know what coffee is.”
(Himalayan Java)

In Nepal, coffee was initially planted primarily to prevent soil erosion. In addition, it was promoted as an income generating commodity rather than for consumption. Some of the key informants mentioned the cultural challenges of coffee production in Nepal. Even though a buyer tells producers that they would guarantee the price of coffee, the key informants feel that farmers are not convinced because of their unfamiliarity with the product. The following are comments from the representative of the Royal Everest Coffee Mill and the project manager of the CoPP.

“Coffee is very new commodity to Nepali farmers. If we do not buy their products, they cannot use in the other way. They have no options, and other thing is they have no support from the government sector.” (Royal Everest Coffee Mill)

“Many farmers get scared to start coffee because if they cannot sell at the market they cannot consume. If commodity is something like rice, farmers can consume by themselves, even they cannot sell at the market.” (Coffee Promotion Project)

The president of the Kaski DCPA said that some farmers who receive loans for coffee production do not actually apply the funds to support coffee but instead use it for other purposes. Perhaps, this is because farmers are not convinced of the return on investment compared with other agricultural commodities.

Moreover, it should be pointed out that people in Hamsapur are accustomed to being “given” tools for community development, and coffee seemed to be one such a project. In the beginning of coffee production, farmers gained the seedlings for free from CARE Nepal as a soil conservation project. After CARE Nepal left, the local non-governmental organization, Indragufa, continued to support them. Initially, Indragufa distributed seedlings to all households in ward 3 and 4, but many farmers did not plant

the coffee seedlings. Then, Indragufa changed the policy to sell the seedlings to only those producers interested in planting coffee with a discounted price to recover the actual cost. The president of the Kaski DCPA said,

“I am interested in doing all the things, but one thing I object to is that farmers are not interested in investing in coffee production.”

This also explains the case of the coffee committee in the village. There are six coffee committees in Hamsapur village in ward 1, 2, 4, 5, 8, and 9. These committees were created with the support of the Royal Everest Coffee Mill because the company knew that farm level management is critical for better coffee production. CARE Nepal also helped in the beginning. Thus, these coffee committees were created not because of coffee producers’ requests but rather because of suggestions from outside organizations. For example, there is no coffee committee in ward 3 and some producers complained about this. However, when I asked a producer in ward 3 if they were interested in creating one two of them gave the following responses:

“People did not ask me to be a member of coffee committee.”

“Nobody told us to create a coffee committee.”

These comments suggest that the villagers are used to more explicit guidance or detailed instruction. Because coffee was introduced as an income generating “project,” it has not yet developed as a product “for the producers.” Thus, another challenge is how to apply agriculture development in a way that empowers farmers.

Necessity for Collaborations

The coffee value chain map of Hamsapur (Figure 5) shows the involvement of multiple organizations. Several agencies are providing extension services to coffee

producers in Nepal including NTCDB, Tea and Coffee Development Section, CoPP by Helvetas Nepal, Winrock International. In addition, in Hamsapur village, the Kaski DCPA and Indragufa assist. Although multiple organizations are involved with coffee, only the CoPP dedicated their main work on coffee. Also, it seems that all of the organizations are working on extension services, but the effectiveness was questionable. Table 12 shows the result of independent sample t-Test based on the coffee training and the scale of production. The result shows that there are no significant differences on scale of production between those who had coffee training and those who did not. This implies potential ineffectiveness of the training program. The role of each organization should be clarified, and also further collaboration should be promoted to implement more efficient training services. For example, the CoPP has provided coffee production training in ward 5 in Hamsapur, but they did not know the involvement of the local non-governmental organization, Indragufa, until I mentioned its name. The collaboration of these two organizations will provide significant mutual benefit including better service to the coffee producers.

Table 12: t-Test Tables of Training and Scale of Production

Statement	Coffee Training	N	Mean (Sd)	t-value (df)	Sig. (2-tailed)
Number of coffee plants	yes	28	169.46 (192.6)	.06 (46)	.95
	no	20	163.85 (441.7)		
Number of coffee plants fruiting	yes	28	79.11 (100.1)	.41 (46)	.68
	no	20	65.80 (122.5)		
Average coffee production per tree (kg)	yes	28	8.536 (6.43)	.49 (45)	.62
	no	19	7.105 (13.0)		
Total coffee production in 2008/09 (kg)	yes	27	141.04 (178.3)	1.06 (44)	.29
	no	19	90.37 (127.3)		

The collaboration between the public and private sectors is also essential in order to increase the access to the market (Henson et al., 2008; Miehlbradt and McVay, 2005).

However, the current value chain system indicated the insufficient collaboration between the public and private sectors. The importance of collaboration is articulated by the representative of the National Tea and Coffee Development Board (NTCDB):

“Development can be boosted up by the involvement of public and private sector. Without their involvement, there cannot be flourished. Coffee sector has gone because of their involvement like the Royal Everest Coffee. They started planting coffee in different parts. The government sector is only running one extension center with little and small volume of support, so I think private and public sector has to be strengthened and support to maintain the flowerishment.” (National Tea and Coffee Development Board)

Interestingly, although the government side thought that they had a good relationship with the private sector, the private sector did not think they wanted to work on the further collaboration with the government. This is because of instability and corruption within the government as explained above. In addition, there had been no support to develop the small businesses from the government despite the important roles of the private sector in the coffee industry. The owner of the Himalayan Java said,

“As I said, we are not into production, we are not into farming, but we encourage farmers to produce better quality coffee, and we go out to places like the United States and promote their products. That is what we do.” (Himalayan Java)

Although a company like Himalayan Java mentioned that they do not work for the production side, it is obvious that there are needs for further quality improvement in order for Nepalese coffee to be able to compete in the international market. This means the private sectors need further collaboration with the public sector as well as international development agencies. Therefore, it is critical to clarify supply chain roles for each organization and to build strong collaborations. Since the private sector has been playing a critical role in the development of the coffee industry, the government should recognize

their role and suggest ways to promote their business practices. However, as discussed at the beginning of this study, it is also critical to promote development with an awareness of sustainability. As it has been discussed in Chapter 1, sustainable agriculture development could look into: 1) sustains an economic benefit to producers; 2) protects and supports local knowledge and livelihoods; and 3) sustains the local environment.

How is this concept actually implemented in a business model? I had an opportunity to talk to two companies which practice sustainable agriculture development. One company, Tokyo-based “Alter Trade Japan,” serves as a wholesaler of agriculture commodities to Japanese retailers. “The Organic Village” based in Kathmandu, Nepal, is a retailer of organic agriculture products in Kathmandu. The following paragraphs are based on interviews with these two companies.

Agriculture Development and Alternative Business Model

Alter Trade Japan (ATJ) is a unique trade distributing company which promotes “alternative” agriculture trade. It handles products such as bananas, shrimp, tea, cocoa, and coffee which have historically been traded as cash crops and promoted for poverty alleviation. However, instead of promoting their work as a development “project,” ATJ has implemented as a business by connecting with Japanese market. The company, in collaboration with local and international non-governmental organizations, directly purchases agricultural products from producing countries and sells to cooperative retailing stores in Japan. Another unique character of this company is that it does not use any certification systems on its products such as fair trade or organic. This is also reflected in the company name: “alternative trade company” rather than “fair trade company.” Instead of certification, quality assurance is conducted in each step of the

production process, and ATJ staff members test the quality and the taste before selling. Under ATJ's philosophy, traceability means that they are able to trace back commodities from consumers to producers. It seems such quality control system is loose, but the success of the quality assurance is shown from one of the comments during the interview:

"Consumers recognize the quality of our products, and they often do not know the background of products."

This indicates that the company has been successfully providing quality products satisfying customers as well as supporting farmers in developing countries. During the interview, one of the representatives of the ATJ said,

"We think products are intermediary of the relationship between producers and consumers. So, in a way, our products are the result of the relationship."

ATJ is a private company, but the company also made it possible to exist as a non-profit organization at the same time. When the question about the goal as a company was asked, she answered:

"Our president often says that it is ideal a company like Alter Trade Japan will disappear in the end. It is ideal that Alter Trade Japan does not have to sell coffee. We are hoping the market system will be created that is different from the current economic structure. Until then, Alter Trade Japan will be a sandwich between consumers and producers."

ATJ has successfully been in business for over 20 years, and the company is often cited in news magazines and books in Japan as a successful social enterprise.

The Organic Village is another unique retailing company that sells organic agriculture products. The founder, Mr. Samir Newa, worked for the United Nations Development Program (UNDP) as a project officer in the Global Environmental Facility Small Grants Program. With 5 years of work experiences at UNDP/GEF/SGP, he always felt the lack of a market for the products supported by these projects. Although a large

amount of funding was spent on training and skill development, people were often left out with skills when projects phased out. So, he decided to dedicate himself to marketing development. He knew that it was important to fulfill the community people's demand to work for conservation or climate change projects. These projects do not work without extra income for people's pockets.

“(Those income generating project) looked good in terms of a report. But personally, if people are not making good money, even the report is very good, I do not care that. Then, my realization was every single Nepali people have a little of land, and some skill of farming. By geographical, political, most of the areas are still not influences by chemical.”

With the support of UNDP funding, in 2003 he started “The Organic Village.” Mr. Newa walked from one village to another to negotiate with farmers if they were interested in selling/marketing agriculture products to his company.

“If you go as a donor, NGO, it is very difficult to work (because) how much you spend, that much you get. If you are not able to spend, nobody will listen. But as a business, as a profit sharing, if you talk, people will listen. We are not talking environment, we are talking how to make money.”

The business did not come out easily in the beginning, but after struggling for several years, the company started to increase the reputation as an organic store. The Organic Village implemented the PGS system making the certification process more accessible to farmers in rural areas. As of 2008, the Organic Village had more than 7 million rupees as shareholders with 44 share holders and 4000 farmers as producers.

These two examples provide the possibilities for private companies to support farmers in developing countries. Both Alter Trade Japan and the Organic Village are private companies, but they provide market opportunities for farmers in developing countries. This means that farmers do not have to rely on funding based project constantly because market provides opportunities to repeat the business. Traditional

project based cash crop promotion tends to lack sustainability compared with these alternative business models because the market is not always guaranteed after a project phases out. Both companies mentioned that they always face the potential of a lack of market for farmers, even if there are products to sell. Thus, it is questionable that project based cash crop development can sustain long term community development. Of course, capital investment by the public sector is still very important, but market-oriented approaches will also enhance the efficiency of traditional international development projects. Thus, a new business model with social mission is gaining more attention as one possible path for sustainable development (Miehlbradt and McVay, 2005). The United Nations Global Compact, a branch of the United Nations, provides a strategic policy initiative for businesses that are committed to aligning their operations and strategies with universally accepted principles in the areas of human rights, labor, environment and anti-corruption. One of the statements in sustainable supply chain pointed out the following:

“Corporate buying practices can impact suppliers’ ability to improve their business conduct. Downward pressure on cost and efficiency can force suppliers to contravene some of their own ESG (environment, social and governance) standards in order to meet their buyers’ commercial requirements. At the opposite end of the scale, companies can use their purchasing power to help instill good ESG practices in small and medium-sized companies across the developing world.

Today, successful supply chain managers must increasingly think beyond short-term financial considerations to building relationships that can deliver long-term value along the entire supply chain. This includes incorporating sustainability issues into the company’s sourcing and purchasing practices. In fact, companies that do engage with their suppliers around these issues constitute one of the most important drivers for spreading corporate citizenship principles around the world.” (UN Global Compact)

These alternative business examples show the possibility to maintain private business in a way to benefit to producers, not to exploit them. The study have shown the current

challenges of Hamsapur coffee value chain, which are mainly monopoly of the market, lack of the government support and collaboration, and the weakness of project based agriculture development. The example of Alter Trade Japan and the Organic Village have shown the use of market forces in away to adjust these inefficiency in value chain. Such a business model is particularly effective to poverty eradication in a country with the political instability. Thus, perhaps, such progressive business models supporting producers as business partners, not as aid recipients is the future path to more sustainable agriculture development.

This chapter focused on the findings from the study and included further discussion and exploration of alternative business models that can contribute to the poor. Multinational corporations such as Starbucks (Starbucks, 2005; Starbucks, 2010) have also shown the effort for more sustainable value chain; however, it is critical to create monitoring and evaluation systems in private and public collaborations in order for the poor to truly benefit from these alternative business models. This study showed that the current coffee value chain is not working in a way that enables coffee farmers to sustain their production. The majority of the coffee revenue is distributed to the retailer side, dismissing the initial purpose of income generating projects for small-scale farmers. The current coffee market in Nepal is driven mainly by the private sectors, and stronger leadership by the government is insufficient. Coffee production/marketing must be promoted under the proper government support with transparency in the market. The government can support the market through formulation of laws and appropriate policies that provide further incentives (Aryal, 2003). Furthermore, collaboration between the government, international development agencies, and the private sector is essential to

development of market infrastructure (McMillan, 2002). Efforts to collaborate with transparency will enhance the coffee industry which truly benefits the poor.

CHAPTER 5

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Summary

This study attempted to provide an analysis of the current situation of the coffee industry in Nepal using Hamsapur village as a case study. In order to investigate the industry, the value chain analysis framework was applied. In particular, the study examined the following research objectives: 1) to analyze the value chain of coffee production; 2) to study farmers' perspectives on coffee production; and 3) to develop recommendations to value chain participants for the future market. A summary of the study's findings is given below.

The value chain of Nepalese coffee production was analyzed by assembling interviews with coffee producers and key informants. Figure 5 summarizes the value chain map of Hamsapur coffee. There are approximately 446 coffee producers in Hamsapur village, and there are four collecting stations where coffee cherries are processed for green beans. Coffee green beans are delivered to the Kaski District Coffee Producers Association, coffee producers' association in the district level, and coffee is sold to the buyer through the DCPA. Royal Everest Coffee Mill Company is the only buyer in the Kaski district. There are multiple government and non-governmental organizations supporting Hamsapur coffee producers including the Coffee Promotion Project, Indragufa, and Winrock International. Royal Everest Coffee Mill Company sells the majority of the production (75%) to Japan, and the rest are either exported to the United States or sold to the domestic market. The company supported producers from the beginning of coffee production through creating coffee committees and providing pulping

machines, and it is involved with coffee production in the village production level. This is resulting in the monopolization of the coffee market in Hamsapur, making it difficult for other buyers to enter the local market.

Additionally, the study indicated that the key informants shared views of the challenges facing the Nepalese coffee industry. Quality management is one of the biggest challenges the key informants raised because Nepal focuses on the market niche of high quality Arabica coffee. The challenges of quality management are mainly because of: 1) lack of water and shade tree management; 2) scattered and small scale of production; and 3) insufficient numbers of coffee educators and farmer advisors. Moreover, even though there is high demand in the international market for certified organic and fair trade coffee, certification is another challenge because of its high cost and stringent standards. Organizational challenges, in particular, the monopoly of the local coffee market and the instability of the government has been discussed is a challenging factor in the coffee value chain.

Secondly, the second objective of the study, to study farmers' perspectives on coffee production, was ascertained through face-to-face interviews with 48 coffee producers, and four coffee collectors in the village. CARE Nepal initiated coffee production in Hamsapur in the late 1980s, and Indragufa continued the support to the producers. The production scale and conditions differ across wards because of the geography as well as the number of years involved in coffee production. However, irrigation (79.2%) and unfair prices (52.1%) are commonly raised as the biggest challenges of production and selling according to the respondents. Irrigation is a challenge to agriculture in general in Hamsapur, so wet-processing, which requires a high

volume of water, is creating further challenges in a community where water is already scarce. On the sales side, lack of transparency about coffee prices discouraged farmers. In particular, delay of coffee payments was a major concern of coffee sales. Moreover, rats and hailstones were another challenge for coffee production. Transportation of coffee and lack of market were raised as challenges of selling (Table 8). However, despite concern over the price of coffee and production, almost all respondents (97.8%) thought coffee productions had helped improve their community because of the economic benefit (66.7%), the opportunity to use the land (14.6%), and the requirement of less labor in production (8.3%). Those respondents who commented on the benefit of coffee also mentioned the necessity of a secure market and fair prices.

Further analysis was conducted by comparing interviews with key informants, interviews with producers, and analysis of the secondary data. The findings revealed the information gap that exists between the producers and the key informants, which have developed as obstacles to the coffee market in Hamsapur. In particular, there was a large gap of information between producers and key informants regarding the coffee market and price. The secondary data of price comparison among coffee producing nations in South and Southeast Asia indicated that Nepalese coffee producers' price is midrange (Table 10). However, comparisons of coffee revenue among value chains revealed the large income differences between producers and the buyer. Producers receive 27 rupees (US\$0.34) per kilogram, while Royal Everest Coffee sells for 800 rupees (US\$10.4) per kilogram as a final product (Figure 11). Investment on roasting, packaging, and marketing should be taken into consideration when analyzing the revenue difference, but higher prices for producers and transparency of the market should be promoted. Also, the

importance of empowerment of farmers was recognized as coffee is a newly introduced product. Furthermore, collaboration should be promoted by making the role of each organization clear. The study showed the involvement of multiple organizations but a lack of collaboration. Interviews with Alter Trade Japan and the Organic Village were also discussed as examples of alternative business models to support small-scale farmers and to put agriculture development into a business framework. Finally, the third study objective, recommendations to value chain participants for the future market, will be discussed in the next section with exploring the potential for more sustainable cash crop production.

5.2 Recommendations

This study showed high potential for the organic coffee industry in Nepal. However, it also revealed that the promise of coffee as an alternative source of income to producers has not been met under the current conditions. In order to create a coffee industry to further benefit the poor, the following recommendations are offered below. In particular, it is discussed based on the sustainable cash crop production framework laid out in Chapter 1: 1) sustains economic benefit to producers; 2) protects and supports local knowledge and livelihoods; and 3) sustains the local environment.

Sustain Economic Benefit to Producers

Low prices as well as the lack of transparency on coffee price have been discouraging farmers. In order for producers to gain economic benefit sustainably, diversification of coffee buyers and further marketing effort should be promoted.

Diversify Coffee Buyers

The challenges to the coffee industry in Hamsapur appeared to be strongly affected by the monopoly of the market. If there were other buyers in the region, it would create competition and farmers could choose a buyer based on better price and service quality. The company would be forced to offer transparency of the coffee price to producers, which is lacking in the current market. As previously discussed, a monopoly of the market also happens in the other regions in Nepal. Because of the strong involvement of private companies at the village production level, specific companies have dominance over certain districts. This is causing the lack of transparency including delay of the payment. The interview with the key informants revealed that some of the coffee producers in other districts have not received the payment over a year, and untimely payment discourages producers. There are few buyers in the current coffee market in Nepal compared with the numbers of producers; thus, diversification of buyers is critical in order to provide stable incomes to producers. Additional buyers should be capable of redistributing higher revenue to producers. As discussed above, companies like Alter Trade Japan and the Organic Village are creating alternative business practices which provide higher incomes as well as transparency on the distribution of revenues at each level of the value chain. Perhaps, international development agencies with the collaboration of the government could play this role to keep the transparency in order to ensure the economic benefit to producers.

Marketing Effort

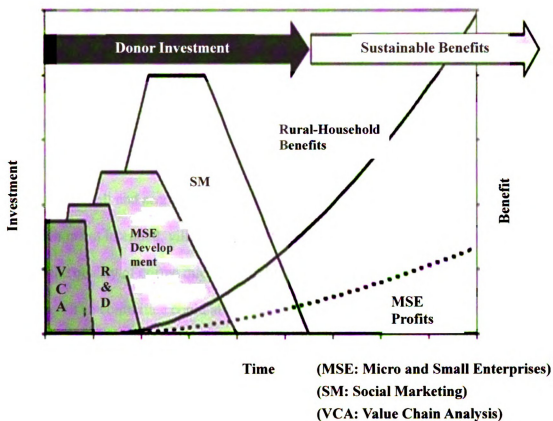
Although Nepal produces high quality Arabica coffee, Nepalese coffee has not established a good reputation in the international market. Thus, the creation of a coffee marketing strategy is critical to develop the market for Nepalese coffee. This includes creating a brand name and collaborating with the local tourism organizations. The creation of a special image is a critical part of the marketing strategy. There are varieties of organic and fair trade coffee in the international market, so it is important to develop the image besides these attributes. For instance, Rwanda has successfully developed a unique image and brand name as a coffee producing country. Producers were introduced as “coffee widows” who were trying to rebuild their lives and communities following the tragedy of the 1994 genocide. Being introduced by multiple media sources including TIME Magazine, the New York Times, and USA Today, Rwanda coffee established a strong brand name (Loveridge et al., 2002). In the case of Nepalese coffee, developing the product’s image through calling attention to ecological diversity in Nepal and the threat of global warming might be one effective strategy. Nepal is one of the most ecologically diverse countries in the world. A land scale of Nepal is less than 0.1 % of the earth, but Nepal has 2.36 % of the world's flowering plants, 8 % of all bird species, 4 % of known mammals, 184 aquatic fish species, 600 plant families, 500 edible plant species and more than 200 cultivated species (Shrestha et al., 2007). However, at the same time, Nepal is one of the areas most affected by global warming. As the study showed, severe water shortages in Hamsapur village suggest that global warming is already having a strong impact. Some research has shown that 35% of the current Himalayan glaciers might disappear by 2050 (Oxfam, 2009). In addition, Nepal is one of the poorest

countries in South Asia, and because of the political instability, economic development has reached those who need it the most. So, combining these factors, ecological diversity, global warming, and poverty eradication, Nepalese coffee can establish its own coffee brand. Perhaps, hiring women to package and process the coffee could be a form of empowerment that might also create further attributes to the product. Local people are the ones who protect local ecological diversity, and action for environmental protection cannot be taken without improvement of their livelihood. Thus, it is critical to make these connections of the marketing effort.

In addition, Nepalese coffee should be promoted with the collaboration of local tourism. The Himalayan Mountains attract many tourists from all over the world for trekking, and Nepalese coffee can be promoted as souvenirs for these tourists. Coffee can be sold at the local coffee shops, restaurants, and even at the guest houses, and this could be implemented through collaboration with local tourist businesses. Coffee should be packaged so that travelers can take in their suitcases; also, smaller packaging will provide a higher profit. “Special coffee from Nepal; coffee protects the Himalayan mountains and empowers people,” could be a marketing catch phrase used on coffee labels.

Figure 6 suggests the effective use of donor resources in social entrepreneurship. The figure suggests that the donor funds should not be used to subsidize services like traditional aid based projects but to establish the foundation for demand-driven and self-financing market systems. Such use of aid support will create sustainable development because it offers the ability to continue even after the funding runs out. Therefore, the government and international development agencies should work together to support initial investments for a sustainable coffee market.

Figure 6: Effective Use of Donor Resources. Source: IDE Cambodia.



Protects and Supports Local Knowledge and Livelihoods

The question of what types of coffee value chain could protect and support local knowledge and livelihoods should be answered by the local people because there are no standardized measurements for these variables. In order to do so, producers should be more integrated in the coffee value chain. As the study found, creating coffee committees and coffee producers' cooperatives will create this opportunity.

Coffee Committees and Producers Cooperatives

First, producers' coffee committees should be promoted at the village level. The study showed that the half of the respondents (45.8%) is currently members of the coffee committee, but the other half are not. As the result of the t-test on coffee committee members and scale of production showed (Table 4), there is a significant difference in total coffee production in 2008/2009 between those who are members of the coffee committee and those who are not. One of the challenges of coffee production in Hamsapur is small and scattered scales of production. So, even though the large scale production is not intended, village level coffee committees should be promoted to improve the quality of coffee through timely irrigation and proper post harvesting procedures. The committee could also play an important role in the marketing of coffee for higher prices. Also, as the result of cross tabulation between the coffee training and the membership of coffee committees (Table 5), farmers' participation in coffee committees will help increase both scale of production and participation in coffee training, membership should be promoted at the village level.

Additionally, there is currently no coffee producer cooperative in Hamsapur or the Kaski district. However, other coffee production districts such as Lalitpur and Gulmi have created coffee producers cooperatives, and because of this effort, producers are getting higher prices compared with producers in Kaski. In the year of 2007-2008, the producers in Latipur and Gulumli received 33 rupees per kilogram, while the producers in Kaski district received 26 rupees per kilogram. This difference in price that the coffee producers corporative should be promoted in the Kaski district in order to increase the producers' prices which will provide further incentives for coffee production. Both coffee

committees and coffee cooperatives require efforts from the producers, so the government and international development agencies should support the creation of coffee committees and producers' cooperatives.

Sustains the Local Environment

“Nepalese coffee is not about quantity, it is about quality.” I often heard this comment during interviews of the key informants. Targeting the niche market of organic high quality coffee is the goal for Nepalese coffee, and if this is promoted properly, the local environment would also be protected. Jaffee (2007) argues that small-scale coffee farmers also offer environmental protection. He said, “...these small growers are quite effective by other measures, such as their ability to sustain vital local communities and ecosystems. As long as coffee remains as economic supplement, rather than the mainstay, of peasant families, it offers protection in the form of diversification.” Therefore, focus should be on quality management which also provides environmental protection in the community.

Systematic Production

As the research indicated, more systematic production should be promoted to improve the quality of coffee. In particular, scattered coffee collecting locations are inconvenient for washing and processing. Thus, the number of coffee collections should be increased and selected systematically. Coffee collecting stations should be located in each ward. One of the suggestions is to create the coffee collecting station in ward 9, located close to Kurlung Khola with a year round supply of clean water. All coffee collectors can bring the harvested coffee to ward 9, and the washing process can be

implemented at one place. Discharged water from processing should be collected in one location to prevent pollution. The organization of collection stations will not only provide enough water for wet-processing, but also increase the consistency of processing coffee beans. During the processing, only ripe coffee should be taken for wet processing, which will also increase the quality of coffee. These farm level efforts will be critical to quality management, and supporting organizations should encourage farmers to work in this direction.

5.3 Recommendations for Future Research

Overall, research on Nepalese coffee is insufficient, so further research should focus on both agronomic and socio-economic aspects of coffee production. In regard to agronomic aspects, research could be conducted on plant spacing, compost and managing practice, timing for plant irrigation, height management, and proper methods of harvesting. On the socio-economic side, studies that address value chain analysis in other coffee growing districts, comparisons of each district, and government policy for coffee development should be examined.

A recent government policy announcement shows signs of change in the coffee industry in Nepal. The Nepalese government recently announced “Coffee Policy Implementation Guidelines,” offering further incentives to coffee producers and exporters including tax rebates and export incentives. Under these new guidelines, coffee traders can export coffee green beans without government permission up to \$30,000, stimulating Nepalese coffee exports to the international market. Additionally, all stakeholders are required to register with the National Tea and Coffee Development Board (NTCDB) so

that they can receive subsidized loans for coffee farming, equipment, and training opportunities. The government also announced to encourage open competition with the minimum price. This provides incentives for the diversification of the coffee market, and if the quality of coffee is reflected in the price farmers receive, producers will be further encouraged. Then, the day the coffee industry will truly become an alternative livelihood support for small-scale farmers in Nepal will not be too far away.

APPENDIX: INTERVIEW QUESTIONNAIRES

Interview Schedule and Questionnaires: Producers

I. Opening

A. **(Establish Report):** [Bow] My name is Kana Aoki and I am a graduate student at Michigan State University. I am conducting this interview for my master's thesis research.

B. **(Purpose):** I would like to ask you some questions about coffee production in order to answer the question "What is the coffee supply chain of Hamsapur coffee?"

(Motivation): I hope that the data I collect provide useful information for the development of coffee production in Hamsapur.

C. **(Time Line):** The interview should take around 20 minutes. Are you available to respond to some questions at this time?

(Transition): Let me begin by asking you some questions about how you started coffee farming)

II. Body

A. **(Topic):** How they started coffee farming

Q1. How did you get into coffee farming?

Q2. From whom, did you hear about the coffee farming?

Q3. Who provided you the seedlings?

Q4. Why did you decide to start coffee farming?

Q5. What year did you start coffee farming?

Q6. The year you adopted coffee farming, was that a financially bad year or good year in your family?

- Bad year
Good year ☐
Same as usual ☐
I don't remember
☐

Q7. Do you want to plant more coffee plants on your farm?

- Yes ☐
No ☐

If yes, please answer the following questions;

Q7a. How many plants would you like to grow in your farm?

Q7b. How much are you willing to pay for them?

Q7c. Where is your preferred source of seedlings?

(**Transition:** Next, let me ask you some questions about coffee farming practice.)

B. (Topic): Coffee farming practice

Q8. How many coffee plants do you have?

Q9. How many are fruiting this season?

Q10. On an average, how much coffee do you get per tree?

Q11. When do you start harvesting coffee?

Q12. When do you complete harvesting?

Q13. What was the total coffee production in the last growing season (2008/2009)?

Q14. Who picks the coffee in family (main person)?

Q15. Do you hire labor for picking?

Yes ☐

No ☐

Q15a. If yes, who do you hire?

Q16. How do you harvest coffee?

Q17. Is coffee consumed within the family?

Yes ☐

No ☐

Q17a. If yes, approximately what percentages of your production do you consume within the household?

Q18. Do you grow coffee plants in the land you own?

Yes ☐

No ☐

Q19. Do you lease the land?

Yes ☐

No ☐

Q20. What kind of fertilizers do you use?

Q21. How often do you fertilize?

Q22. Do you irrigate or apply water to your coffee plants during the dry season?

Yes ☐

No ☐

Q22a. If yes, how frequently do you irrigate the coffee plants?

(Transition: Next, let me ask you some questions about coffee prices and challenges of coffee production.)

C. (Topic): Coffee Price

Q23. Who do you sell your coffee to?

Q24. How long have you know the person you are selling the coffee beans for?

Q25. How much do you trust them?

(1 = very little, 2 = little, 3 = some, 4 = much, 5 = very much): 1 2 3 4 5

Q26. Did you sell coffee cherries to the coffee collector or local market last year?

Yes

☐

No

☐

Q26a. If so, how much did you make from coffee?

Q27. How do you find out about coffee prices?

Q28. What percentages of coffee production you sell?

Q29. How much did you earn/kg?

Q30. What percentages of income come from coffee?

Q31. How do you use the income you get from selling coffee?

Q32. Do you think coffee production has helped the improvement of your community?

Yes

☐

No

☐

Q32a. Why or why not?

Q33. What kinds of challenges are you facing in productions?

Q34. What kind of challenges are you facing in inputs (seedlings and fertilizers?

Q35. What kind of challenges are you facing in selling?

(Transition: Next, let me ask you some questions about demographics.)

D. (Topic): Demographics

Q36. Number of people in household

Q37. Education level

Q38. Age

Q39. What is your primary occupation?

III. Closing

A. Maintain Rapport: I appreciate the time you took for this interview. Is there anything else you think would be helpful for me to know so that I can understand the coffee supply chain?

B. Action to be taken: I should have all the information I need. Would it be ok to contact with you if I have any more questions? Thank you very much.

Interview Schedule and Questionnaires: Collectors

I. Opening

A. **(Establish Report):** [Bow] My name is Kana Aoki and I am a graduate student at Michigan State University. I am conducting this interview for my master's thesis research.

B. **(Purpose):** I would like to ask you some questions about the process of coffee beans collection in order to answer the question "What is the coffee supply chain of Hamsapur coffee?"

(Motivation): I hope that the data I collect provide useful information for the development of coffee production in Hamsapur.

C. **(Time Line):** The interview should take around 20 minutes. Are you available to respond to some questions at this time?

(Transition: Let me begin by asking you some questions about how you started collecting coffee)

II. Body

A. **(Topic):** How they started coffee collectors

Q1. How did you get into coffee collecting?

Q2. From whom, did you hear about the coffee collecting?

Q3. Who provided you the equipment?

Q4. Why did you decide to become a coffee collector?

Q5. What year did you start collecting coffee?

Q6. The year you started coffee collecting, was that a financially bad year or good year in your family?

Bad year ☐

Good year ☐

Same as usual ☐

I don't remember

☐

(**Transition:** Next, let me ask you some questions about coffee collecting and challenges.)

A. (Topic): Coffee Collecting and challenges

Q7. Do you think coffee production have helped the improvement of community?

Yes ☐

No ☐

Q7a. Why or why not?

Q8. Do you want to continue working as a coffee collector?

Yes ☐

No ☐

Q8a. Why or why not?

Q9. What kind of challenges are you facing in coffee collecting?

Q10. Do farmers bring coffee cherries or do you go to collect them?

Q11. Do you also process coffee cherry?

Yes ☐

No ☐

Q11a. If yes, how do you process them?

Q11b. If no, where do you process them?

Q12. What is the coffee collection season?

Q12a. When does it start?

Q12b. When does it end?

Q13. How many kilograms of cherry did you collect last season?

Q14. How many kilograms of coffee beans did you sell to the dealer last growing season?

Q15. What was the average price you sold to the market last year?

Q16. Who do you sell coffee cherries/beans to?

Q17. How long have you know the person you are selling the coffee beans for?

Q18. How much do you trust them?

(1 = very little, 2 = little, 3 = some, 4 = much, 5 = very much): 1 2 3 4 5

(Transition: Next, let me ask you some questions about demographics.)

B. (Topic): Demographics

Q19. Number of people in household

Q20. Education level

Q21. Age

Q22. What is your primary occupation?

III. Closing

A. Maintain Rapport: I appreciate the time you took for this interview. Is there anything else you think would be helpful for me to know so that I can understand the coffee supply chain?

B. Action to be taken: I should have all the information I need. Would it be ok to contact with you if I have any more questions? Thank you very much.

Interview Schedule and Questionnaires: Distributors

I. Opening

A. **(Establish Report):** [Bow] My name is Kana Aoki and I am a graduate student at Michigan State University. I am conducting this interview for my master's thesis research.

B. **(Purpose):** I would like to ask you some questions about coffee distribution in order to answer the question "What is the coffee supply chain of Nepal coffee especially from Western part of Nepal like Hamsapur area of Pokhara?"

(Motivation): I hope that the data I collect provide useful information for the development of coffee production in Hamsapur.

C. **(Time Line):** The interview should take around 30 minutes. Are you available to respond to some questions at this time?

(Transition: Let me begin by asking you some questions about coffee distribution process.)

II. Body

A. **(Topic):** Coffee distribution

Q1. How did you become a coffee distributor?

Q2. How long have your company been working as a coffee distributor?

Q3. Why did you become a coffee distributor?

Q4. How many staff members do you have in your company? How does it operate?

Q5. Do you provide any incentives to producers to sell to you?

Yes ☐

No ☐

Q5a. If yes, what kind of incentives do you provide?

Q6. Do you see a future in working as a coffee distributor?

Yes ☐

No ☐

Q6a. Why or why not?

Q7. Do you also process coffee beans?

Yes ☐

No ☐

Q7a. If yes, how do you process them?

Q8. How do you separate coffee beans for quality?

Q9. Where do you sell coffee beans?

Q10. How do you ensure the coffee quality?

Q11. Do you use grading system for coffee quality?

Yes ☐

No ☐

Q11a. If yes, how do you grade them?

Q12. Do you have any labeling on your coffee?

Yes ☐

No ☐

Q12a. If yes, how do you label them?

Q12b. Do you also have any prevention system of cheating for the labeling?

Q13. What was the average price you sold to the market in the last coffee crop season?

Q14. Do you provide the price premium to farmers for quality?

Yes ☐

No ☐

Q14a. If yes, how does it work?

(**Transition:** Next, let me ask you some questions about coffee market.)

B. (Topic): Coffee market

Q15. Do you sell coffee to domestic or international market?

Q15a. Who do you sell?

Q16. How did you establish the partnership with the buyers?

Q17. What kind of challenges are you facing in coffee distribution?

Q18. What do you think about coffee market in Nepal?

Q19. Do you think coffee could be source of foreign income in Nepal?

Yes ☐

No ☐

Q19a. Why or why not?

(**Transition to the next topic:** Next, let me ask you some questions about demographics.)

C. (Topic): Demographics

Q20. Distributor name/company

Q21. Education level

III. Closing

A. Maintain Rapport: I appreciate the time you took for this interview. Is there anything else you think would be helpful for me to know so that I can understand the coffee supply chain?

B. Action to be taken: I should have all the information I need. Would it be ok to contact with you if I have any more questions? Thank you very much.

**Interview Schedule and Questionnaires:
Government officials and non government organizations**

I. Opening

A. (**Establish Report**): [Bow] My name is Kana Aoki and I am a graduate student at Michigan State University. I am conducting this interview for my master's thesis research.

B. (**Purpose**): I would like to ask you some questions about policy of coffee production in order to answer the question "What is the coffee supply chain of Hamsapur coffee?" and "What kind of challenges Hamsapur coffee production might face when they enter the market?"

(**Motivation**): I hope that the data I collect provide useful information for the development of coffee production in hill districts of Nepal.

C. (**Time Line**): The interview should take around an hour. Are you available to respond to some questions at this time?

(**Transition**: Let me begin by asking you some questions about coffee production policy in Nepal.)

II. Body

A. (Topic): Coffee production

Q1. Would you tell me about your organization and what do you do?

Q2. How many staff members do you have in your organizations?

Q3. What is your main work in this office?

Q4. What role does your organization play within Nepali coffee sector?

Q5. What kind of roles Nepali government play in coffee production in Nepal?

Q6. What is the current situation of Nepali coffee?

Q7. Do you see the potential of coffee market in current sector?

Yes ☐
No ☐

Q7a. Why or why not?

Q8. What kind of challenges coffee sectors in Nepal are facing?

Q9. What kind of public/ private investment do you think coffee sectors need in Nepal?

Q10. Is there role for organic standard?

Yes ☐
No ☐

Q10a. Why or why not?

Q11. Is there third party certification work within coffee sector?

Yes ☐
No ☐

Q11a. If yes, how does it work?

(**Transition:** Next, let me ask you some questions about demographics.)

B. (Topic): Demographics

Q12. Name of organization

Q13. How long have you been working for your organizations?

III. Closing

A. Maintain Rapport: I appreciate the time you took for this interview. Is there anything else you think would be helpful for me to know so that I can understand the coffee supply chain?

B. Action to be taken: I should have all the information I need. Would it be ok to contact with you if I have any more questions? Thank you very much.

Interview Schedule and Questionnaires: International Development Agencies

I. Opening

A. **(Establish Report):** [Bow] My name is Kana Aoki and I am a graduate student at Michigan State University. I am conducting this interview for my master's thesis research.

B. **(Purpose):** I would like to ask you some questions about the work of coffee production in order to answer the question "What is the coffee supply chain of Hamsapur coffee?" and "What kind of challenges Hamsapur coffee production might face when they enter the market?"

(Motivation): I hope that the data I collect provide useful information for the development of coffee production in hill districts of Nepal.

C. **(Time Line):** The interview should take around an hour. Are you available to respond to some questions at this time?

(Transition: Let me begin by asking you some questions about development work in Nepal.)

II. Body

A. **(Topic):** Development work

Q1. Would you tell me about your organization and what do you do?

Q2. What is your organization's current focus in rural development in Nepal?

Q3. How do you describe the need of development work in Nepal?

Q4. What do you think about agriculture development in Nepal?

Q5. What kind of challenges do you think Nepal have the most?

(Transition): Next, let me ask you some questions about coffee production in Nepal.

B. (Topic): Nepal coffee

Q6. What is your organization's relation with coffee sector in Nepal?

Q7. How do you see the potential of Nepal coffee sector?

Q8. What kind of challenges do you think producers might face when they enter the global coffee market?

Q9. Is there role for organic standard?

Yes ☐

No ☐

Q9a. Why or why not?

Q10. Is there the third party certification work within coffee sector?

Yes ☐

No ☐

Q10a. If yes, how does it work?

Q11. What kind of private/public investment you think needs in Nepal's coffee development?

(Transition to the next topic: Next, let me ask you some questions about demographics.)

C. (Topic): Demographics

Q12. Name of International Organization

Q13. How long have you been working in Katmandu?

Q14. What is your main work in this office?

Q15. How many staff members do you have in Katmandu?

III. Closing

- A. Maintain Rapport: I appreciate the time you took for this interview. Is there anything else you think would be helpful for me to know so that I can understand the coffee supply chain?
- B. Action to be taken: I should have all the information I need. Would it be ok to contact with you if I have any more questions? Thank you very much.

**Interview Schedule and Questionnaires:
International coffee trade company: Alter Trade Japan**

I. Opening

A. **(Establish Report):** [Bow] My name is Kana Aoki and I am a graduate student at Michigan State University. I am conducting this interview for my master's thesis research.

B. **(Purpose):** I would like to ask you some questions about the policy of Alter Trade Japan in order to answer the question "What is the coffee supply chain of Hamsapur coffee?" and "What kind of challenges Hamsapur coffee production might face when they enter the market?"

(Motivation): I hope that the data I collect provide useful information for the development of coffee production.

C. **(Time Line):** The interview should take around an hour. Are you available to respond to some questions at this time?

(Transition): Let me begin by asking you some questions about coffee production)

II. Body

A. (Topic) Alternative Coffee

Q1. Which countries and communities do you buy coffee from?

Q2. How did ATJ establish the trade with these communities?

Q3. Would you describe the process of becoming a trade partner?

Q4. What is your organization's quality certification process?

Q5. What is the transportation process of coffee?

Q6. Where do you sell coffee?

(Transition: Next, let me ask you some questions about ATJ's vision.)

B. (Topic) Vision as a company

Q7. What are the most popular products in ATJ?

Q8. How are the consumers' reactions to value-added commodity?

Q9. Does ATJ conduct any consumer education programs?

Yes ☐

No ☐

Q9a. What kind of and how?

Q10. What do you think the source of success of ATJ?

Q11. I am aware that ATJ use "alternative" trade instead of "fair" trade.

How does the ATJ define the difference between "alternative" and "fair"?

Q12. What is the long-term goal of ATJ as a company?

(Transition: Next, let me ask you some questions about demographics.)

C. (Topic): Demographics

Q13. Would you briefly describe your background?

Q14. What is your main work in ATJ?

Q15. How many staff members do you have in ATJ?

Q16. How staff members are organized? Any teams?

Q17. Would you briefly describe about products ATJ sell?

III. Closing

A. Maintain Rapport: I appreciate the time you took for this interview. Is there anything else you think would be helpful for me to know so that I can understand the coffee supply chain?

B. Action to be taken: I should have all the information I need. Would it be ok to contact with you if I have any more questions? Thank you very much.

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