

## The Coffee Production and Change, and the Implications in Dak Lak, Vietnam

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### 베트남 닥락 지방의 커피 생산과 변화, 그리고 의미

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**Abstract** : The objective of this research is to provide an understanding of how coffee production has been taking place since the coffee industry in Vietnam came out in the global market after Doi Moi. Current research tries to understand how the local households of coffee production adjusts to their production process according to internal and external influences. In order to explore coffee production in the level of local and household units, the structure of coffee production in Dak Lak is first explored in terms of production and sales with the cases from two communes. The examination reveals that general characteristics of coffee crops that would reflect coffee production structure. Further, this study interrogates farmers' response to reflect some direct and indirect influences in recent years. That shows how the elements of coffee production in global market induce a change of coffee production in the study area. Those aspects are analyzed in relation to yearly coffee price fluctuation and diversification. Also, this research explores some of farmers' responses toward the environmental friendly coffee production.

**Key Words** : coffee production, Dak Lak, price fluctuation, diversification, global market

**요약** : 본 연구는 베트남의 도이모이 정책 이후 국제시장에서 베트남의 커피 산업이 중요한 역할을 하게 되면서, 그 지역의 커피 생산 과정이 어떻게 진행되어왔는지를 파악하고자 한다. 본 연구의 초점은 어떠한 내부 및 외부적인 영향 하에서 커피 재배 농가주 측면에서 커피 생산이 이루어지고 있는지를 조사한다. 베트남의 주요 커피 산지인 닥락(Dak Lak)지역에서 커피 생산을 둘러싼 주요 관계성이 생산 및 판매에 어떻게 작동되고 있는지를 사례지역의 현장 답사에 의해 조사되었다. 먼저 닥락 지역의 커피 생산의 일반적인 현황을 중심으로 커피 생산 과정의 주요 특징이 파악된다. 나아가 본 연구에서는 최근에 이 지역의 커피 생산에 직접 또는 간접적인 영향에 대한 커피 재배 농민의 반응이 조사되었다. 연구 결과는 이 지역에서 커피 생산은 시장 지향적 및 외부적인 영향 하에서 커피 생산의 변화가 있다는 것이 커피 가격의 변화 및 작물 다변화를 모색하는 과정에서 나타나며, 아울러 환경 친화적인 커피 생산의 흐름을 규명하였다.

**주요어** : 커피 생산, 닥락, 가격 변동, 다변화, 국제 시장

## 1. Introduction

Coffee was introduced to Vietnam in 1857 for the first time. The coffee area remained less than 10,000 ha until the late 1970s. From the late 1970s to the early 1980s Vietnam increased the coffee production and began trading with other communist block countries. After reunification of Vietnam in 1975, Vietnam began to rebuild its economy along the communist collective models common to other countries during that era. Coffee was used as an exchange commodity to other countries. A gradual liberalization of the communist collective policies brought some notable results in the agricultural sector (D'Haeze, 2004). Among the agricultural sectors, coffee exports helped place Vietnam as the world's second largest coffee exporter, and it became the largest export country for Robusta beans, accounting for 60 percent of the world's total for a relatively short period of time, mostly during the 1990s. Dak Lak which is located in the Central Highlands in Vietnam has played important roles for its share of 55% of Vietnamese coffee production. This rapid increase was attributed to the boom of coffee prices in the 1990s. Although a collapse in coffee prices in the late 1990s lowered the expansion of coffee cultivation, the amount of coffee production has steadily increased throughout the region (de Fontenay and Leung, 2002).

In this paper we explore the importance of coffee production to the region and how it shaped this region and importance in order to capture the characteristics and changes of coffee farmers in the frontier region. The understanding of coffee production in households level will shed the light on how farmers perform their individual coffee-related activities

rather than aggregated agricultural practices. Those understandings of farmers' activities are sought by examining the coffee production and sales, in relation to some coffee farmers' livelihood in two communes in Dak Lak. After several visits, discussions and preliminary survey with local academics, organizations, and local farmers, two communes were carefully chosen to reveal some sorts of representative characteristics of coffee production households.

Just before the coffee boom period in Vietnam, the changes and concerns in the world's coffee industry were mainly centered around the issue of the lowering coffee price in the 1990s. Such a change was mainly associated with the discard of a quota system for the coffee imports and exports (Greenfield, 2002). However, more geopolitical concerns were also involved in the change of the industry. Also, we noticed the emergence of multi-national companies which have brought up the world's rising coffee demands. Before those companies came to lead to the relationship between demand and supply, it was the individual merchants that connected with consumption and supply countries for coffee (Malucci, 2005, and Talbor, 1996). As the multi-national corporations not only play a role in buying coffee from the coffee production countries, but also extend their role in distributing within the coffee consumption countries, they have become a power force in the coffee industry. In particular, since some multi-national companies exclusively processed and distributed an instant coffee sector, they have boosted the demand of Robusta coffee to bring up in the world coffee market (Lim, 2005).

First, in order to understand why the coffee production in Dak Lak has played such an influential role in Vietnam, this research analyze some important aspects of coffee production in Dak Lak.

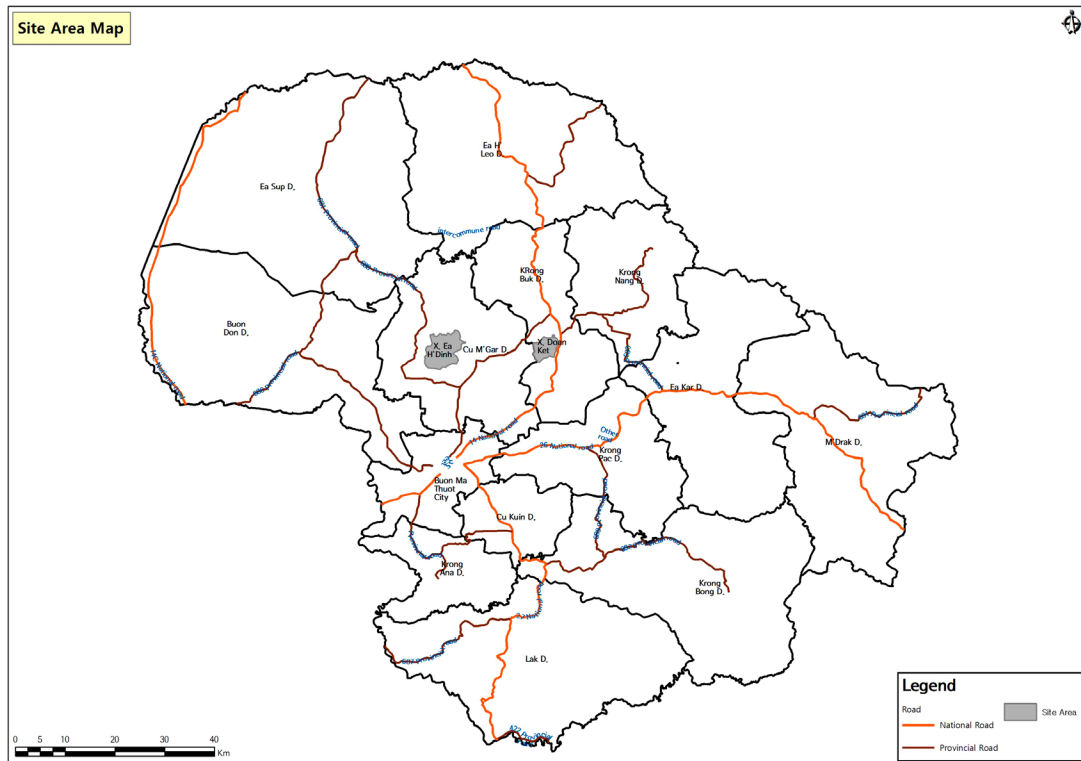


Figure 1. Study Area in Dak Lak

Secondly, this study explores the current situations of coffee production in the households level such as labor structure and sales. The examination aims to provide more clear pictures on the livelihood of smallholders in coffee production. Further, we try to figure out recent changes and their implications on the coffee production. Those aspects are emphasized to unfold how coffee farmers respond to the issues of price variability and environmental concerns surrounding coffee production in recent years.

## 2. Dak Lak as the Main Coffee Production Region; two commune cases

Coffee was largely developed in Vietnam with a favorable natural condition, especially its highlands suitable for coffee plantations in the Central Highland of Vietnam. The Central Highlands occupy a large area of fertile upland plateau. There are three major beneficial natural conditions. Soils on the Central Highlands are productive and well suited for Robusta coffee. Dak Lak has two main types of soils. These are deep, weathered soils derived from Basalt origins. Water resources have been essential

for the high yields of coffee production. The basaltic soils of the Central Highlands have provided the region with their large stores of underground water which are replenished annually by the monsoon rains. Climate in the Central Highlands is standard for Robusta production. The area has a warm tropical climate, influenced by the South Asian monsoon with distinct dry and rainy seasons. The average daily temperature in the Robusta areas fluctuates between 18°C in December and 25°C in April. The maximum day temperature is 30°C in April and the minimum day temperature is 15°C in December (Coffee Annual, 2012).

Dak Lak has 174,000 ha coffee land, 34%, out of the entire coffee area and the production of 330,700 ton making up 43.1% of the total production in the country (Table 1). Together with the increase in area of coffee plantation, the application of new production techniques such as variety selection, fertilizer, irrigation, and canopy creation, have made a rapid increase in production. The average productivity was 0.8–0.9 ton/ha in 1990 but 1.85 tons/ha in 1994 and 2.5–2.8 ton/ha nowadays. Especially, the productivity in some places reached 3.5–5 tons/ha. Coffee is regarded as the important tree of Dak Lak province. In 2010, the total turnover of the province was 620 millions USD, 85% of which was created by coffee plantation and equal to 40% of the turnover generated by coffee plantations over the

country. Coffee plantation contributed over 60% of the province's total income, providing jobs for 300,000 direct labors and 100,000 indirect labors. The coffee export of the province has contributed to keeping coffee belonging to the group of products creating the turnover of more than 1 billion USD per year in the country. The Dak Lak coffee has been exported to nearly 80 countries (MARD, 2012).

Many farmers in our survey responded similarly as to the major reasons for coffee cultivation. They indicated the main reasons as both the suitability of soil and the high chance of improving their household income. A small number of them responded that they just followed their neighborhood or neighbor villagers' practices. Also, a small percentage of the farmers responded they inherited their coffee farm from their parents. Some farmers pointed out that the coffee trees required relatively minimal investment.

Nowadays, the total area over the country are around 500,000 ha and production is over 2 tons/ha on average. Coffee plantation is mostly distributed in the Central Highlands, including Dak Lak province accounting for 70%, and the remaining is in the southeastern country and some other places. 90% of the production is exported, whereas 10% is domestically consumed.

The expansion of coffee plantation in Dak Lak

Table 1. Acreage and production of main industrial crops in Dak Lak province

Unit: Area 1000 ha; production 1000 tons

Tên tỉnh	Coffee		Rubber		Paper		Cashew	
	Area	Production	Area	Production	Area	Production	Area	Production
Dak Lak	170,4	330,7	22,8	20,1	3,6	5,0	35,5	8,4
Country	491,1	767,4	480,2	468,6	49,1	77,0	328,0	232,0

Source: National and Dak Lak statistic year book in 2009

took place during the latter half of the 1990s. This general production expansion trend is found in the Ea Hding commune of Cum'gar district as well. The years of coffee cultivation was largely begun after early settlers moved to Ea Hding. Almost 54% of households in our survey already moved to Ea Hding before the rapid increase of coffee cultivation. This is contrasted with the Doan Ket commune of Krong Buk district, where almost all households are the Kinh settlers. The first settlers in Doan Ket arrived there around 1960 when they moved to this village backed by the Southern Vietnam government. The earlier coffee production was due to domestic market and some exports to Communist countries. A second wave of the settlement occurred between 1984 and 1993. Coffee farming started around the early 1980s after initial coffee plantation. During the early 1990s, as coffee production became profitable, a third wave of migrants arrived. After 2000, some farmers relocated to this area but they were rather new farmers who bought the coffee cultivation developed already in the village. Before we explore coffee production in households level, we need to describe the background of the two communes. These two communes belong to the Gum'gar and the Krong

Buk districts, respectively. With the concentration on coffee during the 1990s, in many ways the two districts experienced the rapid changes in environmental and social conditions that occurred in Dak Lak province as a whole. We chose the two communes to examine their main coffee activities and the changes in recent years because the benefits and risks facing the small farmers growing a commodity for the global market are assumed to be representative in the districts.

First, the overall trends of coffee production in Dak Lak can be summed up as the expansion of the 1990s, the collapse of coffee prices in early 2000s, and the yearly fluctuations of coffee prices and a slightly steady and modest status of coffee production in recent years, as shown in the Table 2.

Some brief background descriptions of the two communes are presented as follows. The Ea Hding commune mostly consists of mixed people with Ede and Kinh, and other small minorities. As Kinh people moved to the commune, they settled down with the acquisition of lands from Ede. The extent to the mix of Kinh in the Ea Hding varies from each village. Perhaps the Ede naively sold their better lands to the Kinh and retreated to less fertile areas as the Kinh came to the commune. Some vil-

Table 2. Area, productivity and yields of coffee in Dak Lak

Year	Total area (hectare)	Product area (hectare)	Average productivity (kg/hectare)	Yields (tons)
2005	170,403	166.087	1550	257,481
2006	174,740	168.809	2577	435,025
2007	178,903	173.791	1872	325,344
2008	182,434	173.233	2398	415,494
2009	181,960	171.977	2212	380,373
2010	190,765	177.890	2200	399,098
2011	200,193	183.220	2321	487,747

Sources; Coffee Annual, 2012

lages still show the majority of Ede, whilst others does not. However, in our survey of the Ea Hding, there were 58 Kinh households, 33 Ede, and other small minority ethnicities, including 4 Nung, 1 Hoa, and 1 Kmer people. On the other hand, Doan Ket case was dominantly homogeneous with 98 Kinh, and only one Tay household.

The broad influence of in-migration and transition to coffee cultivation vary somewhat among villages within the communes according to differences in the villages' history and their residents. The relevant differences between these villages in the communes include the wealth of the communities, the composition of ethnic people, and the length of time that the villages has been established, the size of plots for cultivation, and the level of investment in water resources. Many other aspects of livelihoods affected by the coffee production in the two villages are overall similar. Therefore, in order to explore the dynamics of coffee production in Dak Lak, we have focused on the overall activities centering on coffee production in the household levels.

some villages in the province can trace their history back for generations but the majority are less than 30 years old. In general, the districts of Dak Lak Province can be divided into three categories: highly favourable for coffee growing; moderately favourable for coffee growing; and unfavourable for coffee growing (Agergaard, Fold, and Gough, 2009).

The fieldwork took place from November 2012 to May 2013. During the period, interviews were held with key informants at a range of levels from the provincial, through to the district and commune, and down to the village level. A household questionnaire survey was conducted in the selected two communes. With the overall coffee farmers' characteristics from the previous researches, we checked the results from the survey and compared them with the two commune cases. Following a preliminary analysis, in-depth interviews were held for some farmers, who were selected for detailing the information. From the selected two communes, the years that started the first coffee plant are first compared to examine the expansion of coffee pro-

Table 3. Characteristics of Coffee Farms, Dak Lak Province

	Kinh Farms	Ede Farms	All Farms
Household size(number)	5.3	7.1	5.9
Age of household head(year)	45.4	44.7	45.2
Education of household head(year)	8.0	4.8	6.98
Farm size(ha)	1.38	1.97	1.56
Area planted to coffee(ha)	1.09	1.74	1.29
Age of coffee trees(yrs)	11.4	12.0	11.6
Coffee yield(kg/ha)	3045	2044	2734
Income per capita(1,000 D)	10,015	5,735	8,684
Share of income from coffee	0.76	0.86	0.79
Family labor(days)	153.2	184.8	163.0
Hired labor(days)	71.5	36.6	60.7

Source: Coffee Annual, 2012

duction. The village of Doan Ket was relatively established earlier and also began the coffee cultivation early, when compared to other districts. The largest number of coffee production generally took place along with the beginning of Vietnam's Doi Moi policy.

The coffee production in Ea Hiding was not even introduced yet until 1990 as shown in Table 4. Most coffee production began after 1990. In particular, the late 1990s was the peak years of coffee production, reflecting the coffee boom period in Vietnam.

However, Doan Ket commune was not the earliest coffee producers in Dak Lak, but some farmers surrounding the commune already knew the profitability of coffee production, and the peak of production years was the period of 1985 to 1989, the next peak was recognized in the period of 1990 to 1994. Compared to Ea Hding commune, the farmers in the commune were likely to be the early adopters in the coffee agricultural landscape of the whole region.

Although the cases of farmers who were involved in coffee cultivation before 1980 are only one and three cases from the survey for the respective communes, the earliest coffee farmer in Ea Hding and Doan Ket started the coffee production in 1955, and 1972, respectively. This means the coffee was already recognized as a suitable crop for this region. Reflecting the early re-settlement of the Kinh in Doan Ket, the age composition between the two

communes are different in that the age groups of 40s and 50s take up the largest proportion, 38% and 23% each, in Ea Hding, while the highest group of age in Doan Ket is 50s, 39% among all age groups of coffee householders and the second group is 40s, 34%.

The in-depth interviews in Eihiding village have revealed some important traits of coffee farmers. "Phung soh, at age of 73, moved to this commune in 1994 from Dak Nong where his profession was a teacher. The main reason was his poor economic conditions in his previous hometown. When he arrived, he bought 1.4 ha coffee land. He learned his coffee cultivation from the neighboring farmers. When coffee price dropped, he did not change his coffee production pattern. He slightly reduced fertilizer use. Another farmer, Yhin Nie, who is an Ede farmer, started planting coffee trees in 1977. At that time, he also grew other crops such as rice, bean, and corn. Last year, his production for coffee was 4.5 tons in his 1.5 ha land."

On the other hand, the village of Doan Ket which has a relatively better accessibility due to transportation route saw migrants settling down earlier than other villages. The village was established about the time when a few Kinh people from the North Vietnam came down. The second migration wave from the Central Vietnam occurred by the initiation of the Southern Vietnam's government policy. Then, free migration followed until 1975. However, coffee production was not the main

Table 4. Coffee Production Years

	before 1980	1980-1984	1985-1989	1990-1994	1995-1999	2000s
Ea Hding	1	-	2	18	59	18
Doan Ket	3	10	38	28	13	7

Source: author's questionnaire survey, 2013

Table 5. The comparison of coffee cultivation size

	Ea hding	(Kinh)	(Ede and other minorities)	Doan Ket
under 0.7ha	28	(17)	(11)	10
under 1.5ha	36	(23)	(13)	42
under 3.0ha	28	(16)	(12)	31
over 3.0ha	4	(2)	(2)	13
Average	1.27ha	(1.16)ha	(1.44)ha	1.67ha

Source: author's questionnaire survey, 2013

agricultural activity in this village until 1982. One of farmers who settled in this village in our survey was born right after the village was just established. His memory traced back in the old days of his father's being a household, from when he witnessed many changes of land related reclamation. The year of his coffee cultivation began in 1982. Since then, he gradually increased his coffee cultivation size from 3 in 1982 to 8 sao<sup>1)</sup> unit.

These two communes are compared in their size of coffee production in terms of hectare. The majority of coffee farms are small-scale farmers. Some previous research showed that approximately 85% of all coffee farms are smaller than two hectares. Although there are other crops increasingly planted in recent years, many small farmers managed exclusively a single crop of coffee. The average coffee cultivation land size of Ea Hding is 1.27 ha, which is smaller than the size in Doan Ket (Table 5). The average size in Ea Hding is almost the same as the average size of small coffee farmers in the whole region, DaK Lak. When comparing the size of coffee land between ethnicities in Ea Hding, mostly Ede, including 6 cases of other minorities (Nung, Hoa, Ma, and Kmer), has a slightly larger coffee land than the Kinh. The small land size in Ea Hding has an implication that this commune is almost fully being utilized for coffee cultivation.

Even though the sizes of coffee cultivation vary insignificantly between Kinh and Ede people, there are several points to a lower productivity for Ede people when they are compared with the Kinh in terms of a relatively lower productivity. That is, Ede people less capital to invest their agricultural activities, especially in growing coffee. Therefore, they are short of money to run hulling machines, costing 7 million VND. Also they lack the machine, which costs around 10 to 20 million VND, to water in their coffee field. Their basic lack of knowledge is also attributed to a relatively short period of formal education.

Three main types of labour arrangement found in the survey are household labour, exchange labour, and wage labour. Household labour is the dominant type for coffee production. In particular, the family labour is the fundamental component of labors for agricultural activities in this region. Exchange labour is a reciprocal arrangement whereby if one household has worked for another, but this type of labor was not notably observed because coffee seasons simultaneously correspond with each farmer. The most popular type of labor was to hire labour to gain access to additional labour force. In Vietnam, fresh coffee cherries are generally processed on-farm using the dry method. Although this method does not require much capital invest-



ment at all, it demands the cultivator’s personal attention. During the non-harvesting season, the coffee cherries are laid on the bare ground to dry in the sun. When the external layer turns darkish and the beans rattle inside the shell when shaken, the dried coffee cherries are packed into used fertilizer bags. During the main harvest, the peasants will have to harvest a large quantity of ripe coffee cherries within a relatively short period of about eight weeks so that the coffee cherries do not become over-ripe. It is not certain, however, whether the peasants harvest only the red coffee cherries during the main harvesting season due to the amount they are dealing with, since they may not be under close supervision over the harvesting process(Tan, 2000).

Coffee production requires a large amount of labour, as much as 240-250 persons-days/ha. Especially during the harvesting season, a local labor shortage is clearly noted with regard to coffee production activities. In our survey, the structure of labors in coffee production requires all year-round labor, but the harvesting season needs the most laborers to pick out green coffee beans. Usually, the majority of farmers, 65%, harvest coffee twice per

year season, 20% harvest three times per year, and only 15% harvest once a year. Even though coffee harvesting season per year runs mostly November and December, the maturity of green bean coffee is not always the same even from the same coffee tree. In our survey, coffee harvesting season runs almost three months of October, November and December, including the preparation for the actual harvest.

The skills of labors are crucial because some incorrect techniques such as plucking fruits and breaking branches lead to affecting the growth and development in the next year. Many households want to ensure the quality of harvesting coffee, but when they contract with labors, they tend to care about the quantity of coffee. Thus they tend to hire more experienced labors who already worked in the coffee field. The Ede people have considerably larger families (7.1 members) than the Kinh (5.3 members), thus probably indicating a higher dependency on the household labour. The Kinh may hire labor because their family is small and thus short on labor to manage production; contracted labor would bring better skills and work commitments. Family

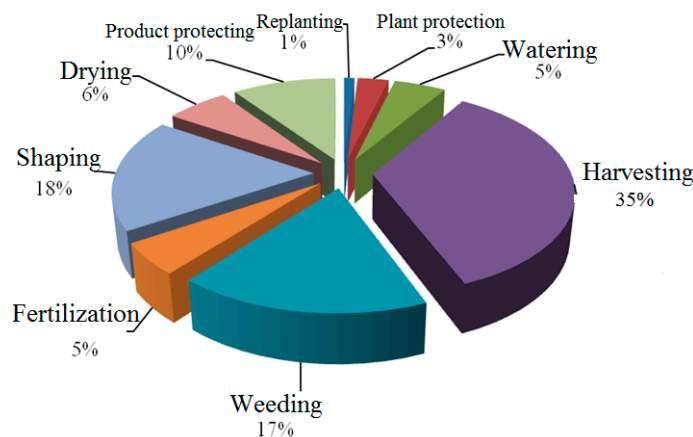


Figure 2. Structure of labors in coffee production

labor, in contrast, could be unpaid work with less education, technical know-how and productive skills (Geisler and Shively, 2008).

One of households in the survey who is cultivating coffee with 1.6 coffee land hired three migrant laborers from the mid-August to the end of November last year. In the other seasons he and his wife themselves engage in the other coffee production activities. The labors from other provinces come to this commune and reside in temporary houses provided by the owners. The farmer pays labors monthly salary, which is about 3 million VND per month for each labor. Also, the labors receive traveling costs and cooking items, such as rice and cooking utensils, and some clothing as well. Another purpose for their staying in the temporary house is to prevent the crop from being stolen. Other farmers also responded similarly, depending on how many labors they can take advantage of within their own families.

For the average size coffee land cultivator, they tend to choose either large labors in a short period or smaller laborers for a long period. In our Ea Hding survey, most people responded that they hired labors from either the Kinh from other provinces or other ethnic people from other communes or provinces. Although some responded their temporary labors coming from the same village for harvesting tasks, the laborers are usually other ethnic people. It means that other ethnic people play an important role in supplying labor force. However, the pattern of hiring temporary labors in Doan Ket is overall consistent in that they bring in large number of people of 100 to 200 people for a short period of days 1 to 3 days.

Overall process of harvesting coffee is that the whole cherries are spread on the ground and the

sun dries to reduce the moisture content (Giesler and Shively, 2006). Usually, the drying takes place on the farm but this is problematic in regions with high humidity or frequent showers. The bean quality depends primarily on the drying process because insufficiently dried beans are highly prone to attack by fungi and bacteria while over-dried beans become brittle and break easily in the subsequent processing stages. After drying, which may take several weeks depending on the weather, the beans are treated in hulling machines to remove the remaining dry pulp and parchment-like covering that surrounds beans. This also takes place on the farm or in local traders' facilities. The final stages involve the sorting (removal of black and broken beans), polishing and grading into different sizes of the beans. These processes usually take place in warehouses owned by larger trading companies, but this varies depending on the competence and capacity of local companies and the organizational preferences of the larger trading companies. The low quality of coffee produced by traditional harvesting methods was found to hold farmers back in that both ripe and unripe beans that were mixed together. Drying beans in the sun often add to the deteriorating state of coffee products.

### 3. Coffee Transactions in Local Scale

Once cherry is picked at each farm, it is dried to 12 percent and then can be hulled to produce green bean or stored as dried cherry. Farmers can sell or store the dry cherry or ungraded green bean as either product can be stored for up to 6 months

while farmers awaits a market opportunity. There is generally a range of buyers for the farmer to choose from. Typical intermediate traders purchase coffee from farmers and then sell to large processing factories. There is a range of formal and informal options for farmers to forward contract their crop, enabling access to credit to finance their farming operations. Robusta is a very flexible crop that allows farmers to speculate on prices. As coffee is stored as dry cherry or as green bean, the crop does not damage easily and transport is also simple (Marsh, 2007).

The government's policies only allowed foreign companies to invest in coffee growing, processing, preservation for export, and the transfer of advanced technology. They were not permitted to use their networks to buy coffee. However, about 10 foreign businesses have set up agencies to purchase coffee directly from farmers in Dak Lak, Dak Nong, Lam Dong and Gia Lai in the Central Highlands. In Dak Lak, nearly all coffee-growing households sell their produce to the local private middlemen. Access to market information, although widely available in the favorable coffee growing areas, is guarded by traders in poorer and remote areas. Producers in these areas seem to receive a relatively smaller proportion of the export price. Only 10-15 percent of coffee-growing households produce coffee under a contract with state, farm, or state-owned enterprises such as Vinacaf (The World Bank Agriculture and Rural Development, 2004). They usually receive a certain amount of in-kind support such as fertilizer, seedlings, and irrigation. Except for households contracted to state farms, almost all coffee-producing households sell their produce to local private middlemen. These households get no support from the government. They are not obliged to sell their coffee to process-

ing and exporting companies. However, they have a trust-based relationship with the middlemen or big coffee buying agents nearby. In our survey, the two communes showed that all farmers other than two households of Ea Hding sold their coffee to collectors. One of farmers residing in Ea Hiding, where there are 7 buying stations, told us he has been selling three middlemen, considering the distance from his house to buying station and an accumulated trust between himself and the middlemen for his experience of the suggested coffee price and the evaluation of his coffee quality from the middlemen. The situation is almost the same in the case of Doan Ket where there are two buying stations. One of the farmers we interviewed said that he has been selling his coffee to the closest located middleman who has a buying station in an adjacent commune.

The transport cost is agreed between the buyers and the farmers. The farmers are informed on the coffee market price by different channels, so that the coffee price in the commune and district differ insignificantly. The buyers usually pay attention to the following quality standards of the raw material coffee, namely foreign matter, black, diseased, mouldy beans, strange smell, and moisture. The other criteria, such as bean size and bean colors, are applied in the big buying stations in order to evaluate coffee sold by farmers. The current coffee price that the farmers are able to receive remained almost at the same level from two years ago. The price we surveyed ranges 34,000 to 45,000 VND. The prices that farmers get are determined in the buying stations, which are also regulated by foreign companies as to the quality and price. At the buying stations, farmers buy a necessary fertilizer, and sometimes they could be granted private loans from the buying stations.

Table 6. The Coffee Selling Months in the two communes

	Mar.	Apr.	May	Jun.	Jul.	Aug.
Ea Hding		3	1			2
Doan Ket						
	Sept.	oct.	Nov.	Dec.	Jan.	Feb.
Ea Hding			1	66	32	31
Doan Ket			17	63	76	32

Source: author's questionnaire survey, 2013

In our survey, however, the requirements for coffee selling were relatively irregular for those farmers who live in Ea Hding, where 88% of them are well aware of the requirement about moisture, but only 15% of them know other requirements for uniformity, color, and other foreign materials in order to sell their coffee. As a result, these kind of recognition affect the overall quality aspects in Dak Lak. However, this is not the case for those farmers in Doan Ket. They are almost aware of those requirements.

More importantly, the prices of coffee in household level are eventually determined by the external forces from international coffee markets. Thus, the only option for farmers to get a better price is to select a perfect timing for the top price when the coffee is sold. That is another reason for having the dried coffee, since it is relatively easy to keep in the farmer's own storages for several months without any special processes. We pay attention to coffee selling from households in the two communes, especially their coffee selling time.

The Table 6 shows many households were concentrated on a few months right after the harvesting season from November to February. The results do not clearly show the expectations of some prolonged effects caused by farmer's strategy for a favorable price. Nonetheless, it does mean that

farmers who can afford for their financial assets are willing to store their coffee longer for the best price they could possibly get. Another reason is that some farmers have to make a payment in advance in order to pay for harvesting costs and other capital for coffee cultivation prior to the actual harvest. Thus, they are unlikely to wait a period for the top price due to the incurred interests they have to pay. It seems that the interest rates are not low. Farmers usually bring their coffee around 1 ton at a time to a buying station, but when they bring in their coffee, the examination of coffee quality is still not much of a concern.

#### 4. New Changes in Coffee production and Alternative

First, we tried to find out the difficulties that the farmers face for their coffee cultivation because this will show what they need in their perspective. The semi-open list in our survey discloses that the difficulties associated with the coffee production in Ea Hding are in the following order; yearly coffee price change, the shortage of laborer, the shortage of land, the lack of cash loan, water availability, and agricultural techniques. By contrast, the difficulties

in Doan Ket are ranked by water availability, the shortage of laborer, yearly coffee price change, the shortage of land, the lack of cash loan, and agricultural technique. The farmers recognize somewhat similar their current hardship conditions but the differences also exist, depending on their location for a favorable site of water availability, besides the common difficulty of yearly coffee price change in the communes within the region. The management of Robusta coffee plantations in the Central Highlands requires supplementary irrigation in order to break flower bud dormancy and to initiate fruit setting (Carr, 2001). In fact, the water supply is labour intensive and consists of a micro-basin irrigation system. The water is pumped up to the plantation and applied by means of a hose. Due to the drought in recent years, the water availability has become a major concern so that some farmers, especially in Doan Ket, have been digging wells for a proper water supply. We turn to the most challenging difficulty that small holder farmers have faced in recent years.

### 1) Price related change and diversification

Although Vietnam's coffee yields accounted for 14.3 % of the world market share, the sector did not have any decisive roles in the market performance. The reasons were that the sector had not established a professional processing, exporting or consuming system, and competitiveness was poor among exporters. All large coffee-producing countries in the world had supporting funds to help companies respond to market fluctuations. Vietnam still relies on using export contracts. Thus it is basically hard to forecast changes in the agriculture market. Coffee

prices have been fluctuating extraordinarily. One example is that one tonne of coffee is being sold at between US\$1,250 and \$1,270 on the London trading center, which is about a 30 per cent decrease against the same period last year. There are a variety of reasons why prices continue to fluctuate, but the primary reason is due to foreign speculation which has worked to corner the global coffee market. This has resulted in a sharp decrease in coffee prices. Also, coffee processors, who apply pressure to market prices, have added to the fluctuation. Fluctuating fortunes for small holders is a phenomenon unique to neither coffee nor Vietnam. In the countries relying heavily on just a few primary commodities or cash crops, farmers are vulnerable to maintain a stable livelihood, and the fluctuations in prices affects directly to fluctuations in incomes and account balances. The collapse of coffee prices has drawn much attention.

In Dak Lak, overproduction and subsequent price dampening had "a serious negative impact on the livelihoods of Vietnamese coffee producers". Vietnam's on-going coffee crisis is widely acknowledged within and outside the country and finding ways to improve outcomes for coffee farmers remains a key component of Vietnam's agricultural strategy (Ha and Shively, 2008). These concerns were well noted in our survey. However, previous researches showed that farmers who consider long-run investment and disinvestment in trees does not follow a reduction in planted areas. Besides, despite the Vietnamese government's efforts to maintain the coffee growing area at 500 thousand ha, the area has continued to expand due to good coffee prices. The coffee growing area increased about 12 percent over the past five years from 509 thousand ha in 2007 to about 571 thousand ha in

2011. People usually reported no change in strategy or activity. When the farmers receive a lower price, they tend to reduce the amount of fertilizer applied to coffee regardless of farm size. Also they found small farmers appear to have been somewhat restricted in their willingness or ability to respond to falling coffee prices compared with larger farms because large farms have an ability to wait for coffee prices to recover (Ha and Shively, 2008)

In order to cope with this situation, many organizations and farmers are trying to find ways to improve farmers' income. One of them should be a strategy of diversification for agricultural products. With regard to this issue in our survey, farmers' future plan for coffee land in Ea Hding is that 84% of them will keep it to remain the same. Even though the lack of personal assets to acquire more land will be the main reason for being a current status quo, they prefer not to change the amount of coffee production. Only 16% responded they would increase their coffee land through loans from other agencies. Meanwhile, 57% of them in Doan Ket will keep their coffee land size as the same size, and those who expressed the size increase was only 0.06%. Those who prefer the decrease of coffee production size account for 31%. This reflects the aging of coffee tree in Doan Ket and they also have started the replacement with other crops. Many of them responded they would plant pepper instead of coffee trees due to a better market price. Since the commune of Doan Ket started coffee cultivation earlier than other communes, they have been replacing old coffee tree with a new variety of coffee tree or other cash crops since 2007, and these trends are becoming a common agricultural practice in this area.

Coffee related experts and regional authorities mention that farmers should apply modern farming

techniques to improve the quality of the beans and raise their value, and should also adopt measures to help farmers shift to other trees on land unsuitable for coffee cultivation. Dak Lak's climate is favorable to the growth of many crops such as rubber, pepper, fruit trees, cocoa, beans and cotton. In the households level, we found that before the coffee boom, the Ede and other ethnicities used to cultivate more diverse crops such as dried rice, cassava, corn, and a bit of coffee. Even in Doan Ket the earlier settlers were engaged in rubber plantation where they worked in both national cooperatives and state farm period which existed until 1986, while their main crop was dried rice harvested once a year then.

Diversification is the main tool that farmers will be able to reduce their individual farm risk. However, farm diversification is not always easy as there are often no clear profitable options and the financial costs of changing crops are high. One example is found that Viet Nam Bank for Agricultural and Rural development has been asked to give preferential credit if farmers wish to follow diversification plans set up by the local people committees to diversify out of coffee, particularly in areas which are not suitable for coffee (Oxfam, 2002). A range of diversification options are being promoted such as rubber, cashews, pepper or annual crops such as corn, cassava or cotton. It is assumed that the efforts for this are similar to the previous years prior to coffee production boom, but this is a different path to get more stable income sources. At present, farmers are interested in diversification to replace their Robusta, but still not willing to reduce their potential Robusta yields yet. There are some examples of peppers being planted as shade and windbreak trees in the region (Marsh, 2007). One

of farmers who planted pepper as a shading tree in the survey considers not only pepper as a diversification, but also as a way to improve coffee quality. His experience from planting pepper is that it takes one third of land for a comparable income from the same coffee land size.

## 2) Quality Issue and Sustainability

Despite being the world's second largest coffee exporter, the Vietnamese coffee industry faces a main challenge in quality management of green coffee beans. However, it was regarded that the quality of coffee produced in Vietnam was not an important factor determining the coffee price until recent years. Quality control was not a major factor in Robusta production. In general, even if the dry coffee cherry or green bean was handled poorly, it is unlikely to affect price much (Marsh, 2007). However, quality concerns have gradually risen after the expansion period of coffee production. New attentions to quality issue include variety selection, techniques in planting, taking-care, in fertilizer and pesticide application and in harvesting and processing. Due to these less attentive concerns the value of Vietnam coffee has been downgraded in the global market, because its coffee could not meet consumer's preferences.

"Coffee quality is still a worrying problem and needs a lot of attention. Some farmers are picking

unripe beans and not following regulations in collecting and processing (Vietnam News, 2013) The coffee industry has yet to pay sufficient attention to getting international standard certification, including the UTZ – a set of social and environmental criteria for responsible coffee-growing practices and efficient farm management – that would help increase the competitiveness of Vietnamese coffee in the world market. "Currently, close links have not been established between exporters, and between exporters and producers to create more added value for our coffee products," At present, there are four coffee growing programmes in the Province of Dak Lak: the sustainable developing programme of coffee (4C), the coffee's global certification programme (UTZ), the coffee programme of fair trade labelling organisation (Fairtrade and the tropical forest's coffee programme (Rainforest)<sup>2)</sup>.

Planting internationally certified coffee combines import and export companies with international coffee roasting companies. So, all of its companies lead farmers to improve the quality of their coffee, from avoiding the use of pesticides to deploying labour more efficiently. These standards aim to ensure that coffee is produced under environmentally and socially beneficial conditions, although standards for each organization differ in the emphasis and criteria used. These standards and their strong growth are seen as an opportunity to generate environmental, economic, and social benefits in

Table 7. The Number of Coffee Farmers in Certified Programs

	Ea Hding(total 90 households)			Doan Ket(total 99 households)	
	Rain Forest	UTZ	Not	4C	Not
Engaging	9 (10%)	29 (32%)	53 (59%)	21 (21.2%)	79 (79.8%)

Source: author's questionnaire survey, 2013

producer communities, which can be benefits for global consumers to be interested in supporting. They also can cause additional costs for producers to adjust their production practices and demonstrate their compliance (Hagggar, 2011).

The Dak Lak region covers 50 percent of UTZ Certified farmers in Vietnam, for example. UTZ farms in Daklak were certified in 2006, and 4C Unit was introduced in 2003. For those farmers in Ea Hding who engage in those sustainability programs connected with mostly Dak man and Amajaro, the export companies run by multinational corporations, they responded they have been provided assistance for technical support for coffee cultivation, and also those programs help them stabilize their coffee prices. The farmers in Doan Ket who are mostly engaged in 4C are getting a help from the organization. They also responded some helps for technical assistance and other information in coffee production through the workshop as well.

However, the actual net income did not appear to be significantly different between UTZ Certified farmers and the uncertified farmers. This is consistent with the finding that UTZ Certified farms achieve yields not significantly different from other farms. Certified farmers show lower production costs when only explicit inputs are accounted for fertilizer, biocides, paid labor, processing costs, annual depreciation of production assets, and reforestation costs.

## 5. Conclusion

The booming development of coffee plantation in Dak Lak in terms of acreage, productivity, pro-

duction has provided the great economic benefit for the Dak Lak province since the coffee boom period. In the period of 1994–1999, due to the high profit from coffee, the acreage of coffee plantation was spontaneously expanded, breaking down the land use. The acreage of some other crops were being narrowed and especially the forest area was also decreasing due to the encroachment for coffee plantation. The expansion period in the region was ended and then another major problem occurred, which is the collapse of coffee price. This problem still lingers in the region and needs to be solved in Vietnam, especially for those smallholder coffee farmers. The coffee production still offers good opportunities for small farmers, and as well as employment opportunities for immigrant workers.

We have attempted to pay attention to the livelihood of coffee farmers in the main coffee production region. Given a time limit, it was not sufficient enough to analyse a meaningful differences in the livelihood related to coffee production within commune and between communes under some different social and natural environment. However, this study demonstrates some notable characteristics and changes in the region. Unquestionably, the region as a whole has presented dynamic changes because the progress of the region has been especially closely interconnected with the world market with regard to its boom and modest growth. Those aspects have further impacted on the livelihood of local coffee farmers, even some secluded ethnic minorities. First, the growth of Vietnam's coffee industry was aided by the influence of the liberalization program as well as the demand for Robusta coffee in the world market. These external conditions turned Dak Lak region into one of major coffee producing area and gave a momentum for a



rapid increase coffee cultivation in the region due to its favorable climate and soil conditions. The rapid expansion has been lessened since the early 2000s from the worldwide supply increase for coffee. Nevertheless, Dak Lak still has been in steady growth for coffee. We found that the most farmers, whether they are planned migrants or spontaneous migrants, are smallholder farmers who hold lands for coffee less than 2 ha. They also mainly utilize their labors as family labors, but hires a lot of migrant laborers for the harvesting season. The farmers in most cases sell their products to local middlemen operating the buying stations, and then the middlemen sell the collected coffee beans to exporting companies. The farmer usually rely on their selling to the middlemen based on some previous relationships on trust and price. Also, we found that the only option for a better coffee price from farmers is the selection of selling time, though it seems to be not much available for much small farmers.

For the majority of coffee plantation, farmers' economic conditions have been vulnerable in their sustainability because they have little choice in the process. As the world coffee market are concerned more and more on the quality of coffee products, the current less inactive efforts for sustainability can be a harm for the forthcoming development of coffee in the region. In recent years, the scientific and technical activities and extension works have provided for farmers to develop their coffee quality in order to meet an international guidance. It has been recommended that the coffee industry must shift towards exporting processed beans rather than raw beans in order to add more value to the bean, It seems, though, that the efforts have not achieved the goals they set. Ironically, the main reason for the lagging behind other coffee produc-

ing countries is that the purchasing of coffee was not determined by the quality of coffee in Vietnam. Therefore, the encouragement of sustainable coffee production has not been successfully acquired in the level of smallholders coffee farmers. Currently, sustainable production is mainly promoted through public-private partnership projects or projects by private local and international traders/exporters in view of an increasing demand. A more coordinated approach, including a shift of responsibilities to the coffee producers in the form of larger private producer enterprises, should be sought to better Vietnamese coffee production prospects.

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### Notes

- 1) sao which is land size unit in Vietnam is 1,000m<sup>2</sup>
- 2) The UTZ Certified Code of Conduct is an internationally recognized set of criteria for economic, social and environmentally responsible agricultural production objective of the 4C is to foster sustainability in the mainstream coffee chain and to increase the quantities of coffee meeting basic sustainability criteria. The Rainforest Alliance is a non-profit, tax-exempt organization based in New York. Its mission is to conserve biodiversity by promoting sustainability in agriculture, forestry, tourism and other businesses. The Fair Trade certification model is designed and audited to ensure equitable trade practices at every level of the supply chain.

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