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Describing the Coffee Value Chain in the Central Highlands of Vietnam

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Abstract

Coffee is one of the leading agricultural product exports from Vietnam and the main crop of the Central Highlands. However, little is known of the value chain that connects these farmers to world markets. Therefore, the main objective of this exploratory study was to identify the actors in the coffee value chain in the Central Highlands of Vietnam. This research was conducted in 2016 by interviewing coffee farmers and coffee buyers, using open and closed questions. The number of respondents was 200 people, including 150 coffee farmers, 30 traders, 10 pre-processing companies and 10 processing companies. The survey results were assessed using the ValueLinks and M4P value chain approaches. The study also proposed some improvements for this coffee value chain.

Key words: coffee, value chain, Vietnam, Central Highlands, actors.

Introduction

Coffee is a tropical agricultural product with high productivity, well suited to conditions in developing countries in Asia, Africa and Central and South America. World coffee production is relatively stable at around 150 million 60kg bags (International Coffee Organization (ICO), 2016). The ICO initial estimate of global coffee production for 2016/17 suggests that the world total will remain relatively stable at 151.6 million bags (Table 1 and Figure 1). Brazil produces a little over a third of total output, and Asia and Oceania a little under a third.

Table 1: Total coffee production by countries

Country/ year	2013	2014	2015	2016
Vietnam	27610	26500	28737	25500
Asia Oceania	46461	45666	48967	43110
Brazil	54698	52299	50376	55000
Total production	152130	148724	151438	151624

Source : ICO

World coffee consumption has tended to increase slightly over the years. The European Union has the largest demand, followed by the United States and Brazil (Figure 2). Coffee consumption

worldwide is expected to increase in the future. Iwuoha (2016) forecasts that global consumption will increase by 30 per cent, to 200 million bags in 2030.

Figure 1: Total coffee production by countries

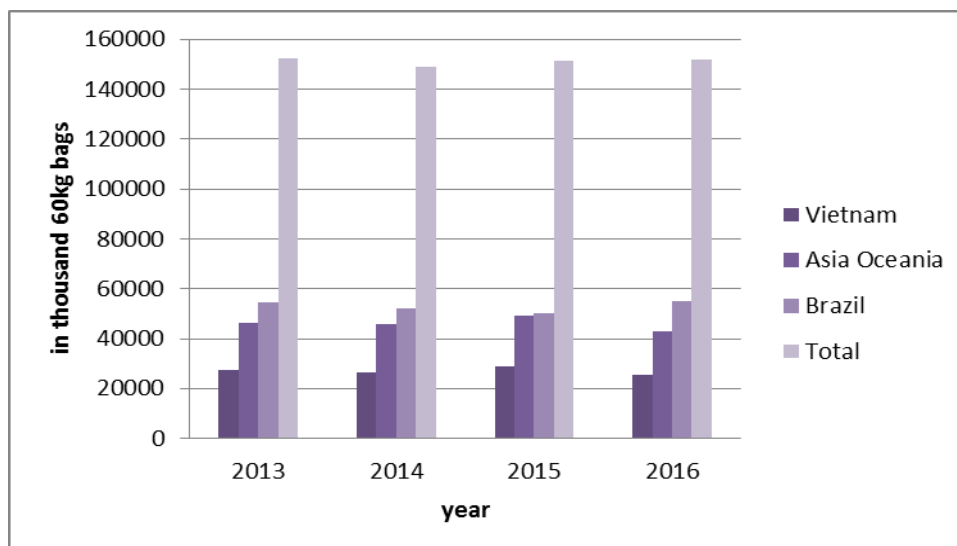
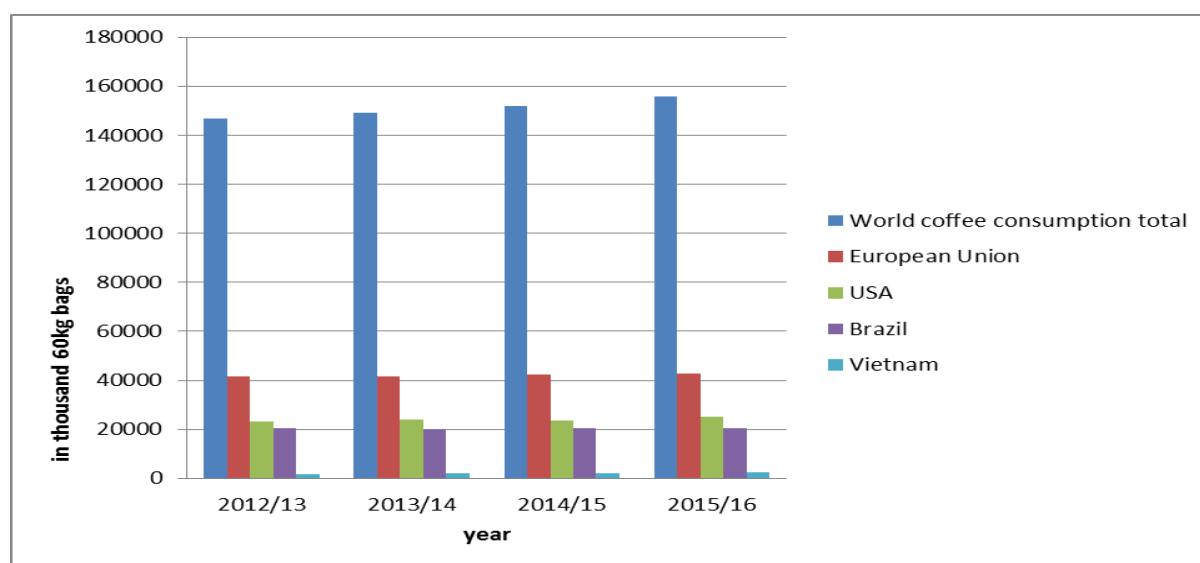


Figure 2: Global coffee consumption by countries



Vietnam is the second biggest exporter of coffee in the world and the largest exporter of Robusta coffee in Asia. Vietnam accounts for more than 21 per cent of total coffee output (according to the International Coffee Organization, 2016). Vietnamese coffee is available in most countries around the world. Major importers of Vietnamese coffee are Germany, USA, Spain, Italy, Japan, Belgium, Korea, France, United Kingdom and Russia.

Coffee is one of the major agricultural export products of Vietnam. The volume of Vietnam coffee depends largely on the output of the Central Highlands, representing more than 90 per cent of the total area of coffee and accounting for over 93 per cent of coffee volume (Ministry of Agriculture and Rural Development, 2015). In 2015, the country's coffee output reached 1445.00 thousand tonnes, of which the Central Highlands accounted for 1347.92 thousand tonnes (Ministry of

Agricultural and Rural Development, 2015). The Central Highlands includes five provinces, namely Dak Lak, Dak Nong, Lam Dong, Gia Lai and Kon Tum. In the Central Highlands, Dak Lak has the largest coffee output, followed by Lam Dong and Dak Nong. Kon Tum is the province with the lowest coffee production in the region (see Table 2).

Table 2 : The coffee volume and harvested area of coffee by province in Vietnam, 2015

Region	Total production		Harvested area	
	Volume/ 1000 tonne	Percent (%)	Area/1000ha	Percent (%)
Vietnam	1445.00	100	590.2	100
The Central Highlands	1347.92	93	532.5	90
Other region	97.08	7	57.7	10
Kon Tum	35.94	2	11.7	2
Gia Lai	201.01	14	76.5	13
Dak Lak	454.81	31	193.0	33
Dak Nong	246.55	17	105.5	18
Lam Dong	409.61	28	145.8	25

Source : Ministry of Agricultural and Rural Development, 2015

Coffee production in the Central Highland plays an extremely important role in the social economy of Vietnam. The coffee industry has been creating jobs and bringing a stable income for farmers. Most of the coffee grown in the Central Highlands is exported but little is known about the value chain which links the small holder farmers to world markets.

The suspicion is that the value chain is not working well. According to the Coffee and Cocoa Association of Vietnam, Vietnam coffee accounted for 20 per cent of coffee market share by volume, but only about 2 per cent of the world coffee market by value. Besides, the process of international economic integration offers great opportunities for Vietnam in expanding agricultural export markets, but meeting this opportunity contains severe challenges, especially the poor competitiveness of agricultural commodities. The country is looking for the right direction for these staples sectors. Participation in global agricultural value chains is considered the right way for agricultural products in the coming years. The global value chain is defined as the whole process of production of goods, from raw materials to products, with the skills and materials necessary for the production available at competitive prices as well as assured quality (OECD, 2013). Dinh Thi Thanh Long (2015) indicated the global value chain is understood as the sequence of production, including manufacturing activities tied to the relationship between companies. Research on global value chain development will support countries to accelerate the process of industrialization and the formation of industrial centers. Meanwhile, domestic companies will have the opportunity to access knowledge on technology, management skills, and approach to the market, research and development from the multinational corporations.

As there is little existing information on the Central Highlands coffee industry, this preliminary study will attempt to identify the main actors and suggest the configuration of the value chain for coffee in the highlands of Vietnam.

Literature

The value chain concept was first described by Porter (1985). It indicates the series of activities required to bring a product (or service) through the various production stages to final consumers (Kaplinsky and Morris, 2001; Nguyen Thi Thu Hang, 2012). The framework of value chain analysis that is common in Vietnam and other developing countries is that of Valuelinks (GTZ, 2007) and (DFID, 2008). These frameworks will be used in this study.

A number of different studies have analysed coffee value chains but none relate to the coffee value chain in Vietnam. Hartatri and de Rosari (2011) described coffee production and marketing in different regions of Indonesia. Fitter (2001) concentrated on the ability to analyse the value chain to model the relationship between outputs and inputs and determine the effects of unequal actors. Hartwich, Fromm and Romero (2010) conducted research on the coffee value chain in three production areas in Honduras. The results showed the role of the private sector in agricultural production, with farmers communicating directly with affiliates of innovative companies providing inputs. Finally, Kalinda and Chibwe (2014) identified the actors in the coffee value chain in Zambia. The research also pointed out the long coffee production time so it received little investment attention. There were also problems in brand recognition and reasonable funding policies for coffee.

However, there is considerable value chain research in Vietnam in other industries. Vo Thi Thanh Loc and Nguyen Phu Son (2011) have studied the rice value chain in the Mekong Delta under the synthesis approach by Recklies (2001), GTZ (2007) and DFID (2008). Dang Thi Hoa (2012) found two main actors of the value chain of wood are producer (produce forest material) and processor (processing paper roll). This value chain is also particularly affected by state policy, the stability of the macro economy, human resources, and the production technology.

Methodology

This research was conducted in 2016 by interviewing coffee farmers and coffee buyers, using open and closed questions. The number of respondents was 200 people, including 150 coffee farmers, 30 traders, 10 pre-processing companies and 10 processing companies. The surveyed areas are the provinces with the largest reserves of coffee and convenient transportation, namely Dak Lak, Dak Nong and Kon Tum. These provinces account for 53 per cent of the harvested area of coffee in the Central Highlands.

Table 3: Statistics for research samples

No	Areas	Subjects			
		Farmers	Traders	Pre-processing companies	Processing companies
1	Kon Tum	50	10	3	3
2	Đắk Nong	50	10	2	2
3	Đắk Lắk	50	10	5	5
	Total	150	30	10	10

Results and Discussion

Identifying and mapping the main actors of the coffee value chain in the Central Highlands

Based on the survey results, coffee growers are mainly small scale farmers. The scale of production is small (Table 4). The proportion of households with an area of 0.5ha to 1ha accounted for almost

half of all respondents, following by an area of 1ha-2ha and over 2ha. Seed and fertilizers are the most important inputs of coffee production. These factors are purchased from local agents (Table 5).

Table 4: Scale of coffee production by area of households in 2016

Area (ha/ farmer)	Number of farmers	Percent (%)
0.5-1	75	47.9
1-2	54	34.2
Over 2	28	17.9
Total	157	100

Source: the survey results in 2016

Table 5: Coffee production information of farmers

	Criteria	Result	Level (%)
Input supply	Where did you buy seed of coffee?	Seed providers	100
	Where did you buy fertilizer and pesticides?	Agent fertilizer, pesticides	100
	Did you get advice and guidance on growing coffee?	Yes	100
	Where did you get advice and guidance on growing coffee?	-Local agricultural extension -Department of Agriculture and Rural Development -The Western Highlands Agro-Forestry Scientific and Technical Institute	
	Did you borrow money?	Yes	90
		No	10
Output supply	Where did you borrow?	Vietnam Bank for Agriculture and Rural Development	80
		Bank for Social Policy	15
		Other banks	5
	Who did you sell coffee to?	Traders	60
		Pre-processing	30
		Processing company	10
Output supply	Who did you prefer to sell to? Why?	-Processing company - Trust, no fraud, no bankruptcy	
	Where do you know about price information?	Traders	80
		Media such as internet, television	20

Source: the survey results in 2016

Based on the information in Tables 5 and 6, the coffee value chain can be seen to consist of three main channels (Figure 3):

Channel 1: Farmers - pre-processing plants - processing plants - consumers. This channel accounts for about 30 per cent of coffee production.

Channel 2: Farmers - coffee processing plants - consumers. This channel only has a very small percentage, about 10 per cent. Only households with a large area of coffee, over 5 hectares, make direct transactions with the plant.

Channel 3: Farmers – coffee traders - coffee processing plants - consumers. This is the official consumption channel, accounting for about 60 per cent. Most traders collect coffee and then sell it to the processing plant.

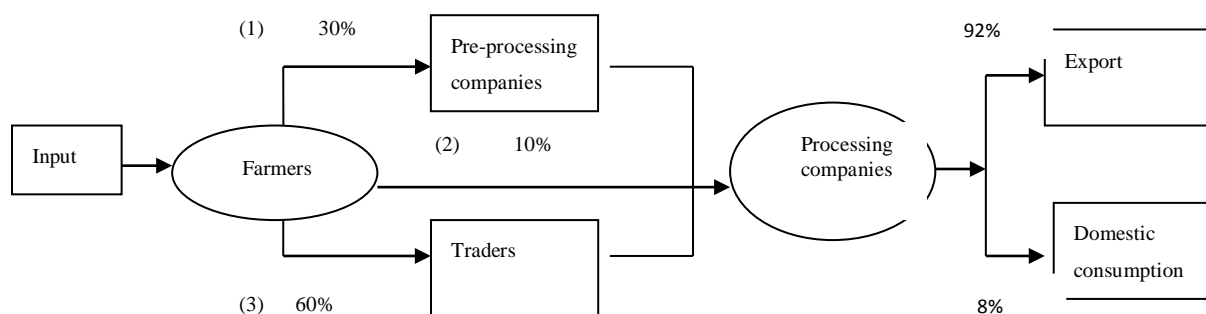
Table 6: Information about trader, pre-processing and processing companies

	Criteria	Result	Level (%)
Trader			
	Who did you sell coffee to?	Pre-processing	30
		Processing	70
		Export company	
Pre-processing			
	Who did you sell coffee to?	Processing	20
		Export company	80
Processing			
	Who did you sell coffee product to?	Export company	92
		Domestic consumption	8

Source: the survey results in 2016

Vietnam's coffee output is mainly exported, accounting for 92 per cent of total production. The proportion for domestic consumption is only 8 per cent (ICO, 2016).

Figure 3: The structure of consuming channels in the Central Highlands



Thus, farmers, traders, pre-processing companies and processing plants are considered as the main actors in the coffee value chain.

The value chain of Central Highlands coffee also consists of seven core processes:

- Supply of inputs: Agricultural inputs for coffee include seed suppliers, fertilizers, pesticides, and agricultural tools such as water pumps, hoes, tractor.
- Agricultural production : mainly small scale farmers.
- Collection: It is done by local traders or the local coffee company, ensuring the purchasing power of coffee from farmers and supplying to coffee processing facilities.
- Preliminary processing: is the pre-processing of coffee produced by local processing facilities and coffee companies.

- Industrial production: Coffee factories mainly produce soluble coffee and filter coffee with a variety of different products for the domestic and export market. There are factories producing wet coffee and polishing coffee by advanced and modern technology. There are many large coffee processing enterprises such as Olam, Trung Nguyen (Dak Lak province), Thu Ha (Gia Lai province) and Dak Ha (Kon Tum province).
- Commercial functions include buying and selling coffee at grocery stores, supermarkets, cafes and coffee exporters.
- Consumption: the purchase and sale of coffee to the final consumer.

Putting together the information on the actors and the processes gives the final value chain map (Figure 4). In addition, there are a number of value chain supporters:

- The Western Highlands Agro-Forestry Scientific and Technical Institute: provides seeds and plant technical information.
- Vietnam coffee cocoa association, Ministry of Agriculture and Rural Development: provide price information and export information.
- Local agricultural extension, Department of Agriculture and Rural Development: organising training courses about planting, harvesting procedures.
- Banks: provide financial support from production to collection, processing and export.

Analysing actors in the coffee value chain

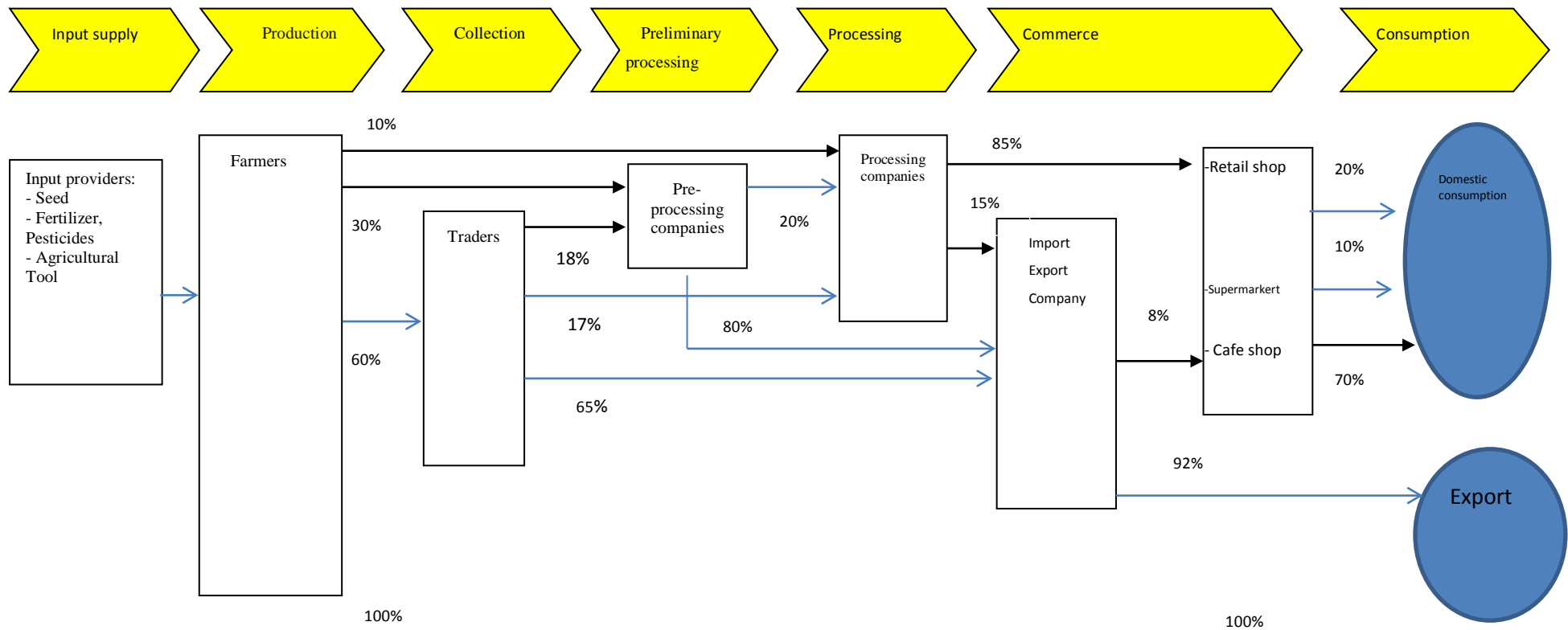
Analysing farmers

Farmers (Table 7) are divided into two main groups: independent farmers and contract farmers who hire coffee gardens from the coffee companies and then pay a portion of the coffee output to them. Each year, the farmer will harvest coffee around October to January. Harvested coffee will be sold to traders, pre-processing companies and processing companies. The traders include private traders and coffee companies, accounting for 60 per cent of coffee production.

Table 7: Price and consumption - farmers

Items\ Actors	Traders		Pre-processing	Processing plants
	Private traders	Coffee company		
Output (1000 tonnes)	539.17	269.58	404.37	135
Percentage (%)	40	20	30	10
Price (million VND / tonnes)	40	40	39.8	39.8
Average price (million VND / tonnes)			40	
Total production (1000 tonnes)			1347.92	

Figure 4: The coffee value chain in the Central Highlands



The Western Highlands Agro-Forestry Scientific and Technical Institute, Local agricultural extension, department of Agriculture and Rural Development

Vietnam coffee cocoa association, Ministry of Agriculture and Rural Development

State departments, Banks

Analyzing traders

Traders are very important actors in the chain, who collect coffee from farmers (Table 8). Traders have the advantage of being local, having transportation facilities and warehouses spread throughout the area. High flexibility allows traders to purchase and transport agricultural products in remote areas with poor transport infrastructure. This is considered to be the greatest contribution of traders to the value chain, as a logistics service provider (The Tran, 2017). However, the shortcomings are that traders can easily manipulate prices and supply. This slows the flow of goods and also obstructs the flow of transparent information. More than 90 per cent of farmers consider traders to be the sole source of information about the market, and their sole buyer of agricultural products. Therefore, nearly 60 per cent of coffee production is sold to traders. In the Central Highlands, traders include local private collection agents and coffee company agents in the area. Coffee companies play a very important role in the purchase of coffee from the producer, most of which are under the Vietnam government coffee corporation (Vinacafe). This is Vietnam's leading supplier of coffee beans.

Table 8: Price and consumption - traders

Items\ actors	Pre-processing	Processing plant	Import export company
Output (1000 tonnes)	145.5	137.4	525.68
Percentage (%)	18	17	65
Price (million VND / tonnes)	41	41	41
Average price (million VND / tonnes)		41	
Total production (1000 tonnes)		808.75	

Analyzing pre-processing companies

Pre-processing is the first and most important step in obtaining quality beans (Table 9). Starting with ripe berries will take many steps to extract the kernel, and step by step to keep the best quality of coffee. The preliminary processing of coffee from farmers and traders, is then sold to a processing company (20 per cent of total production), or to export companies (80 per cent). The price of coffee after processing for sale to the importing company is higher than that sold to domestic processing companies.

Analyzing processing companies

According to the International Coffee Association (ICO) in 2016, Vietnamese coffee is mainly exported in the raw form, rather than fully processed. Exports account for 92 per cent of output, and domestic consumption only 8 per cent. Domestic establishments include coffee shops, supermarkets and retail stores. Vietnamese have the habit of drinking coffee at cafes, so consumption in cafes accounts for more than 70 per cent of coffee consumption in the country.

Table 9: Purchasing and consumption of Pre-processing company

Items\ actors	Purchasing		Consumption	
	Farmer	Trader	Processing plant	Import export company
Output (1000 tonnes)	404.37	145.5	109.97	439.89
Percentage (%)	73	27	20	80
Price (million VND / tonnes)	40	41	42	43
Average price (million VND / tonnes)	40.27		42.8	
Total production (1000 tonnes)	549.87			

Table 10: Purchasing and consumption of processing company

Items\ actors	Purchasing			Consumption	
	Pre-processing company	Trader	Farmer	Retail department	Import export company
Output (1000 tonnes)	109.97	137.4	135	28.14	351.78
Percentage (%)	29	36	35	8	92
Price (million VND / tonnes)	42	41	39.8	99	100
Average price (million VND / tonnes)	42		100		
Total production (1000 tonnes)	382.37				

Conclusion

Coffee production in the Central Highlands plays a very important role for the economy of Vietnam in general and the economy of the region in particular, accounting for over 90 per cent of coffee production in Vietnam. This study has described the coffee value chain in the Central Highlands of Vietnam. Research was conducted in 2016 by interviewing coffee growers and buyers and using open-ended questions and closed-ended questions. Using the value chain approach of GTZ (2007) and DFID (2008), results showed that farmers and traders, pre-processing and processors are the key actors in the coffee value chain.

Some improvements for this coffee value chain through cost cutting strategies and technology investment strategies can be proposed. First, farmers should set up groups to produce and sell products (production clubs, target groups, cooperative groups and cooperatives). Through this action, the role of farmers will be enhanced. Farmers can cut input costs through co-operation and contracting with input suppliers to buy high volumes and obtain quality discounts on sales (at least 5 per cent). Besides, it also contributes to reducing the cost of transportation, benefiting the preferential policies of input providers for payroll and post-production support.

Second, it is necessary to strengthen and develop vertical linkages between the company and farmers to shorten the value chain, reduce intermediary and intermediary costs (including reduction of input costs and increased costs). In addition, reduce circulation and marketing costs by enhancing cross-linkages between small-scale producers, large-scale production, and competitive pricing.

Third, Vietnamese coffee products are mainly exported in raw form, rather than as processed coffee products. It would be useful to investigate the feasibility of investing in modern processing technology for processing standard coffee products.

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