

INFLUENCE OF CONTRACT FARMING ON BLACK TEA VALUE CHAIN: A CASE STUDY IN PHU THO PROVINCE, VIETNAM

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ABSTRACT

Black tea product contributes 80% of exported tea in Phu Tho province. Black tea has been being one of the high valued commodities and brought high income for tea producers. However, the black tea industry has been facing on many difficulties such as low price, perishable cash crop, weak cooperation between stakeholders and low competitiveness. In value chain, contract farming has been viewed as an instrument for improving value chain performance by building the tight integration among actors. Therefore, the study focused on comparing value chains of contract farmers to those of worker farmers and non-contract farmers in order to analyze the influence of contract farming on black tea value chain. The data collection based on semi-structure interviews and 110 standard questionnaires in Thanh Son and Doan Hung districts. By adopting financial analysis, the paper explored the cost and the benefits of actors and the linkages among the actors of the black tea value chain. The results showed that the value added (VA) was 10.88 million VND/ton of black tea for groups of worker, 10.62 million VND/ton of black tea for contract farmers and 11.40 million VND/ton of black tea for non contract farmers. However, the VA of whole chain of worker farmers and contract farmers (29%) is higher than the non-contract farmers(18%). Therefore, worker farmers and contract farmers chains are more comparative and sustainable than non contract farmers chain. Based on the results, it could indicated that contract farming could promote the black tea value chain in Phu Tho province.

Key words: Contract farming, black tea, Phu Tho province, value chain.

1. INTRODUCTION

The involvement of Vietnam in tea cultivation dates back 3,000 years. Commercialized tea production in Viet Nam has strongly developed in the last decades after the Independence with the establishment of state-owned farms focusing merely on tea production (ADB, 2004). In comparison with 20 years ago, tea production areas have increased 2.5 times

higher in which 2.2 times in productivity, 6 times in total output, and 8 times in export value (Nguyen Hoang and Nhat Bac, 2011). Vietnam's tea production and export have shared the 5th place with Indonesia in the world ranking, standing behind India, China, Kenya, and Sri Lanka. Vietnam's tea has been exported to 110 countries and regions in the world, including major markets such as Pakistan, Russia, China, Taiwan, Indonesia (Xuan Hai, 2015).

In 2014, Vietnam exported 130,000 tons of tea which valued approximately 230 million US dollars. Approximately 3 million Vietnamese earn their livelihood from tea through the over 400 businesses involved in production, processing, and export (Nguyen Thanh, 2015). In Vietnam, tea exports account for 75-80 % of total production, 20-25% for domestic consumption (Ha Thu, 2015). In the structure of exported tea, black tea now accounts for about 78%; green tea accounts and the rest are other types (Cao Linh, 2014). Tea area of the northern mountainous province accounts for 80.7% of the country with 90,800 hectares of tea. Several provinces have large tea areas are Thai Nguyen, Ha Giang, Phu Tho, Yen Bai and Nghe An, Tuyen Quang, Son La (Ipsard, 2007).

The total tea production area of Phu Tho 10 years ago was 7.893 ha, accounting for 43.5 thousand tons output. In the recent years, tea production has become the major agricultural programs. At the end of 2011, the total area of the province had risen up to 15.650 ha accounting for more than 12% of the whole country. This brought the province to the 5th place tea production area of the country. Output has reached 115,506 tons of tea leaves (Kim Chi, 2012).

Phu Tho province also has the tea processing industry that typically symbolizes foreign investment in the tea sector. Currently, the province has more than 70 tea processing companies with capacity of 1 ton of fresh tea bud per day (400 companies in Vietnam in total) (Phu Tho DARD, 2015). Tea is considered the top agricultural commodities for exports of the province. In 2010 the province's tea export valued 7.3 million US dollars out of 300 million US dollars of the national tea export. Tea industry has contributed to increasing the rate of employment and

income for local people in the province. In recent years, tea production has developed stably with little influence by natural calamities, pests, and fluctuant price. Therefore, tea production guarantees people's lives better than other food crop production (Quoc Vuong, 2012). However, Vietnam' tea export still remains relatively low compared to other countries. The export price is only about \$ 1,500/ton which is half of the average world price. The reason is the quality management in tea production and export is not well-considered, especially in food safety issues. The tea quality so far is still keeping Vietnam's tea industry far away from reaching global markets' standards (Tien Anh, 2015).

Contract farming has been defined as an agreement between one or more farmers and a contractor for the production and supply of agricultural products under forward agreements, frequently at predetermined prices (Eaton and Shepherd, 2001). Minot (2007) defined contract farming as agricultural production carried out according to a prior agreement in which the farmer commits to producing a given product in a given manner and the buyer commits to purchasing it. According to Eaton and Shepherd (2001), contract farming can be classified in to 5 types namely centralized model, nucleus estate model, multi-party model, informal model and intermediary model.

The centralized model is the model that a firm directly signs contract with farmers with tight arrangement and strict quality control and quantity determined at the beginning of the production. Firms usually provide inputs, technical supports to contract farmers to have high value agro-products.

Nucleus estate model and centralized model are alike in terms of that company

signs contract directly with farmers, supports inputs, technologies and controls strictly quality of products. However, in the nucleus estate model, firm owns farm assets and facilities and contracted farmers just contribute labors and some inputs to the production processes. The multipartite model normally involves a joint venture (between a public entity and private firm) contracts with farmers. This model might have separate organizations responsible for credit provision, production, management, processing and marketing. Informal model applies to individual entrepreneurs or small companies who normally make simple, oral contract with farmers on a seasonal basis, particularly for crops such as fresh fruits and vegetables. Crops usually require only a minimal amount of processing, such as sorting, grading and packaging. The intermediary model includes intermediaries (such as representatives of farmer's groups/cooperatives) between firm and farmers. This model, which can be considered as a combination of the centralized and informal models, is common practice throughout Southeast Asia. Given the indirect linkage with farmers, this model has several disadvantages mainly due to the company's losing control over quality, quantity and price.

Contract farming is one specific form of vertical integration (Rehber, 1998). Yoshiko Saigenji (2010) mentioned that contract farming, one of vertical coordination types, encourages small producers to join in tea production. Vertical integration brings benefits for agriculture development in the context of heated competition. It is said that vertical integration within agriculture and the food industry influenced in market structure and competitiveness of agriculture (Grega, 2003). The general aim of vertical integration is creating a larger profit for the participants through linkages.

Moreover, it also carries more market share for stakeholders involved in the chain and improves the quality of products (Meulenber and Kool, 1994). With all above benefits, it can be seen that contract farming influences positively on value chain through mechanism vertical integration. In addition, contract farming brings benefits for firms and farmers (Prowse, 2012).

For firms, the opportunities provided by contract farming are clear and convincing, such as: increased reliability in supply quantity and quality (2) the off-loading of production risk onto farmers (3) greater control over the production process and crop attributes, to meet standards and credence factors; (4) reduced co-ordination costs, as a more regular and stable supply permits greater co-ordination with wider activities. In general, contract farming can increase profits from, and improve governance of, the value chain.

For farmers, contract farming also brings numerous opportunities for farms: access to a reliable market; guaranteed and stable pricing structures; and most importantly, access to credit, inputs, production and marketing services (seed, fertiliser, training, extension, transport, and even land preparation). On a wider note, contract farming can open doors to new markets for a farm's produce, stimulate technology and skill transfer (particularly for higher-risk crops, which resource-poor farmers might typically avoid), and it can support farmers in meeting vital sanitary and phyto-sanitary standards.

With above benefits for firms and farmers when joining in contract farming, they contribute to create higher total value added in the value chain, reduce risks happening along value chain, strengthen close linkage between firm and farmers, thus promoting value chain.

The study therefore aims at comparing value chains between contract farmers, worker farmers and non contract farmers chains in order to analyze the influence of contract farming on black tea value chain in Phu Tho province.

2. METHODOLOGY

2.1. Data Collection

2.1.1. Secondary data

Secondary data were collected from various sources: PTSO (Phu Tho Statistic Office); annual provincial reports of agricultural production; related studies, other scientific materials and the websites of related prestigious organizations.

2.1.2. Primary data

Primary data of the study were collected using a semi-structured questionnaire for the household survey, collectors and companies and structured questionnaires for the household survey. The selection of surveyed households was made using both stratified and random selection in Thanh Son and Doan Hung districts which are large tea cultivation areas and have different chains of black tea in Phu Tho province.

110 farmers were interviewed by survey questionnaires, of which there were 40 worker farmers, 30 contract farmers and 40 non contract farmers. In this study, contract farming includes 2 groups: worker farmers (nucleus estate model) and contract farmers (intermediary model).

Worker farmers: They are now allocated land for up to 30 years on the condition that they produce tea leaf based on company dictates.

Contract farmers: They have their own land but sell a portion or all output to Phu Ben company through Minh Tien

Cooperative, Minh Tien commune, Doan Hung strict.

Non-contract farmers: They do not sign contract with company. They sell tea leaf to the open market, either to collectors or processors (Oanh et al., 2016)

In this study, we also surveyed 6 collectors in Dich Qua, Minh Tien and 6 companies in Yen Lap, Thanh Son, Thanh Ba, Doan Hung districts, including 2 large firms with tea cultivation areas - Phu Da joint venture company in Thanh Son district and Phu Ben 100% foreign owned company in Thanh Ba district, and 4 private enterprises in districts of Thanh Son, Yen Lap, and Thanh Ba. The survey contents were mainly tea processing, main markets, the difficulties and the policies of increasing the value of products.

In-depth interviews method was carried out for analyzing advantages and disadvantages of contract farming through discussing with managers of companies and farmers.

2.2. Data processing and analysis

Both quantitative and qualitative methods were used to conduct this survey. Regarding to quantitative method, descriptive statistics was used to describe the tea production among each farmer group. Comparative statistics was used to compare the value added between stakeholders, such as farmer, collector and company in the chain and between farmer groups in different chains.

Cost – benefit analysis was used in order to calculate some indicators: GO, VA and IC. The detailed function are as following the Figure 1.

$$VA = GO - IC$$

Gross output (GO) is the total value of production outputs.

$$GO = P * Q$$

P is the market price;

Q is the product quantity;

IC is the the intermediated cost, includes purchasing variable inputs (materials and services)

export tea through exporters.

3.2. Actors in the black tea value chain in Phu Tho province

3.2.1. The producers

Worker farmers: Farmers received land due to allocated land for up to 30 years from company with the condition that they produce tea leaf based on company requirement. They must strictly follow all the rules of the company in term of tea production process, the quality control rules, using materials, selling fresh tea.

Contract farmers: Farmers who sell a portion or total output of fresh tea to Minh Tien Cooperative whom signed contract with Phu Ben company. The contract along side the company will ensure farmers to consume their fresh tea products. The company also provides them with some technical assistance of technology for growing tea, good fertilizers and financial support by providing loan with preferential interest.

None-contract farmers: Farmers do not have cooperation/linkage with the tea processing company and do not sign contracts with any other actors along the tea chain. They produce and sell their fresh tea on the spot market through collectors (Oanh *et al.*, 2016).

3. RESULTS AND DISCUSSION

3.1. Black tea value chain in Phu Tho province

There are 3 chains of black tea value chain in Phu Tho province in Figure 2.

First chain: Workers farmers sell total fresh tea output directly to Phu Da, Phu Ben company follow contract signed between worker farmers and these companies.

Second chain: Contract farmers sell a part or total fresh tea output to Minh Tien Cooperative that sells fresh tea to Phu Ben company following the contract signed between Cooperative and Phu Ben.

Third chain: Non contract farmers sell fresh tea to spot the market through the collectors.

In this study, 100% households sell fresh tea to the collectors because they are not near to the processors. Most processors try to export black tea by themselves to seek for higher profit, while others have to

Input		Output value (GO)
IC: seed, fertilizers, pesticide, machine rent, tools, etc.		
VA	Labor remuneration	
	Interest payment	
	Taxes	
	Land rent	
	Depreciation	
	Return to family labor (or net farming income)	

Figure 1. Cost return analysis

Source: Lebailly *et al.*, 2000; Ton and Huyen, 2008

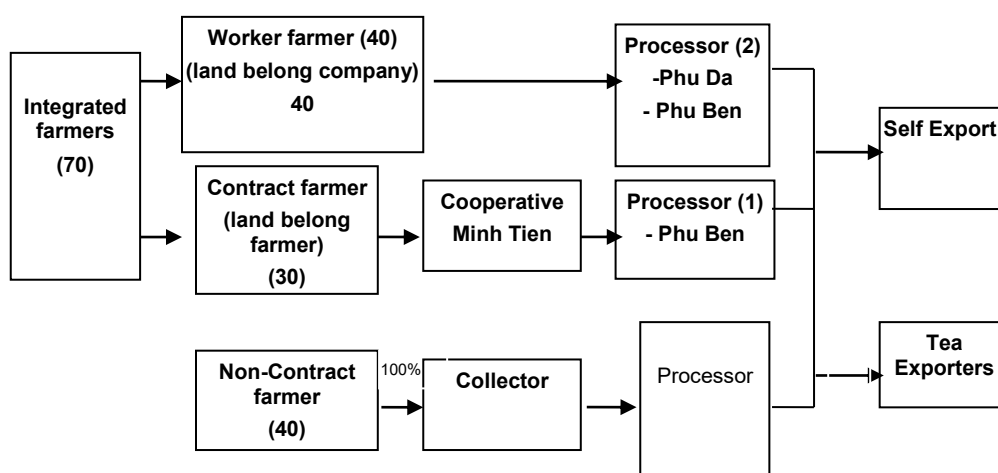


Figure2. Marketing channels of black tea in Phu Tho province

Table 1. Characteristics of 3 farmer groups

Criteria	Worker farmers	Contract farmers	Non-contract farmers
Tea income level	In general, tea income level of worker farmers is relatively good and similar among themselves cultivation	The tea income of contract farmers is less than that of worker farmers. Their tea income is partly from total income, around 20-25% .	The tea income of non-contract farmers is less than that of worker farmers, higher than that of contract farmers due to higher fresh tea price. Their tea income is also partly from total income, around 20-25% .
Areas of tea cultivation	Scale of areas of tea cultivation average 5.000–7000 m ² /household;	Scale of areas of tea cultivation is not large and varied, from 1 sao (360 m ²) to 1 – 2 ha.	Scale of areas of tea cultivation is not large and varied, from about 1 sao (360 m ²) to 1 – 2 ha.
Ownership of tea areas	Tea areas, which belongs to the company, hires the farmers to manage and make an exploitation. The hiring period follows the Decree No. 135/2005/ND-CP.	Tea areas belonged to the farmers who cultivate and sell a portion or total fresh tea to Minh Tien Cooperative.	Tea areas belonged to the farmers who cultivate and sell tea by themselves.
Types of firms assistances	The company invests fertilizers and pesticides, and trains farmers to use cultivating techniques	The company invests fertilizers and pesticides, and trains members of the Cooperative to use cultivating techniques.	Being trained cultivating techniques by the local agricultural promoting agency; some households that owned new plants had been assisted young tea trees.
Social Policy	Participate in the social insurance system (paying insurance fees), as workers in the agricultural sector.	Do not have social insurance.	Do not have social insurance.
Choosing fresh tea'sellers	Sell tea to the company following the regulation and certain levels assigned by the company.	Selling a portion or total tea freely to the Minh Tien Cooperative.	Selling tea freely to the spot market through the free negotiation rule.
Standards of fresh tea quality	The quality of the product is strictly managed, following the general standards which are higher than that of other farmers.	Fresh tea quality is not good as of worker farmers, due to undisciplined tea production process.	The quality of fresh tea products is varied based on the quality of inputs and the process of tea production.
Price of fresh tea	Price of fresh tea follows the regulation of the company, usually lower than that of non contract farmers (from 100–500 VND/kg).	Price of fresh tea is usually higher than that of worker farmers and lower than that of non contract farmers.	Price of fresh tea is usually highest among 3 farmer groups.
Consumption market	Stable consumption market.	Stable consumption market.	Unstable consumption market.

Table 2. Results of tea production of farmer groups in 2014 in Phu Tho province

Indicators	Unit	Worker farmer	Contract farmer	Non contract farmer
Gross Output	million VND/ha/year	83.999	65.059	70.715
IC (Intermediate Cost)	million VND/ha/year	31.034	26.258	26.437
1. Fertilizer	million VND/ha/year	19.395	13.696	14.102
2. Pesticide	million VND/ha/year	5.507	6.784	6.789
3. Other costs	million VND/ha/year	6.132	5.778	5.546
VA (Value Added)/ha	million VND/ha/year	52.965	38.801	44.278
Fresh tea price	VND/kg	3922	4041	4237
Productivity	Tons/ha	21.4	16.1	16.7
Tea land	ha	0.64	0.43	0.45
VA/ household/year	Million VND/ha/year	33.873	17.101	19.935
VA /1 ton black tea	Million VND/ 1 tons black tea	10.882	10.622	11.407

Source: Oanh et al., 2016

There is a huge difference between two groups: worker farmers vs. non-contract farmers. The worker farmers group gains a much higher average productivity -21.4 tons per ha – 1.28 times higher than non-contract farmers group with 16.7 tons per ha. This difference depends on numerous factors, such as tea ages, tea breeds, land quality for tea cultivation, cultivating method and use of fertilizers (Table 2). These numbers have shown that there is potential for improving the tea productivity, thus increasing the added value for tea products if the tea cultivation areas are well invested based on proper technology processes.

When considering intermediate costs, fertilizers and pesticides account for the main part of around 70- 80%. Worker farmers are provided with high quality fertilizers and pesticides, and cultivate tea following the tea production process so that the quality of tea is good. Although the industrial tea price is lower than that of non-contract farmers, tea consumption of worker farmers is quite stable because of its dominating quality and assistance in output channel by big companies. On the

other hand, non-contract farmers sell tea at a higher yet less stable price. For example, during 2014 - the time the research was conducted, the channel from non-contract farmers to retailers was fairly stable, however, in 2015, tea price reached a very low point since retailers also struggled with their product output (Tien Anh, 2015). Moreover, nowadays, most farmers harvest their tea using machines instead of manually harvesting fresh tea. This harvesting method requires a more rigorous and proper tea cultivation technology to prevent tea farms exhaustion, which can severely affect tea quality, tea price and consumption level. The investment cost for a new tea farm is estimated to be about 80-100 million VND/ha, including facility and labor cost. Two crucial factors when considering cost are labor cost while cultivating tea, and the potentially unfavorable effect of weather on tea growth. If taken care properly like industrial tea, a tea tree with a life cycle of 40-50 years can still yield a high level of product with high quality. Meanwhile, non-contract farmers' tea tress usually

have a much shorter life span, thus requiring rapid regrowth of tree and affect the profit of tea farmers. If accounted by VA/household per 1 year, VA/household/year of none contract farmers is 19.9 million VND/household/year and lower than its of worker farmers with 33.8 million VND/household/year whereas that of contract farmer is lowest with 17.1 million VND/household/year. Reasons for this are tea cultivation area and productivity of worker farmers is the highest, leading VA/household of worker farmers the highest.

3.2.2 Collectors

Tea collection stations is a basis establishment of the tea processing company that the company organizes at the tea cultivating area to buy tea leaves from its worker farmers. Each station is usually managed by one team in the tea materials area. Its task is to buy not only tea materials but also other operations such as monitoring operations between the company and the worker farmers (receiving production materials, fertilizers and pesticides to redistribute to the tea farmers based on the general standardized levels of the company, organizing pumping pesticides to the tea plants...)

Fresh tea collectors collect fresh tea in the local and surrounding areas to sell to the company to process black tea to export. Collector often have a lot of experience (10-20 years) in buying high quality tea. They usually have a strong financial background within the local area, with working capital of around 200 million VND at all time. Some large-scale collectors also buy trucks to transport fresh tea from households in remote areas to the processing company.

Collectors play an important role in the black tea processing chain. Most of tea materials are transported to the factories through the system of collectors. To make a basis for accounting the value added in the chain, the study focus on analyzing enough large-medium scale establishments with financial capacity and ability of transporting products to sell to the processing factories, not counting small collectors. The survey results showed that the buying tea fresh price of 2014 is about 4,200 VND/kg and selling price to the factories is about 4,500 VND/kg.

Collectors often collect around 500 – 1000 tons of fresh tea per year. Tea plants have 5 – 6 times of harvest per year and are collected at the season of harvest. Most harvest periods last 15 days, and each day farmers collect around 10 tons of fresh tea.

Collectors operate around 9 months per year with an average amount of 860 tons of fresh tea. However, many establishments have had 20 – 30 million VND indebted to the tea farmers - money that the tea farmers are paid in advance, and this is the way that the collecting establishment create stable input materials during the harvest season.

Large collectors use trucks to transport tea material. Small collectors use motorcycles, but the number of motorcycles used is fairly low. The collectors divide fresh tea into 2 types: young and old tea leaves. The fresh tea price of 2014 is around 3,800 – 4,400 VND based on the quality of fresh tea. The collectors usually sell to some tea processing companies. They usually choose countable companies which pay in whole and are not indebted because they have to pay immediately to the farmers. The companies transport fresh tea from the collectors or vice versa. The transportation fee per ton of fresh tea is

based on the distance between the collectors and the processing companies.

The buying price of fresh tea of the company is informed to the collectors before they buy tea. This price is determined based on the export price of tea that the company deals with the foreign partners. The price of collected fresh tea is determined based on the promulgated price of the company, the current situation in the tea market and costs that the collectors have to pay. Normally, the collectors estimate a margin of 2-3% compared to the price promulgated by the company to buy the fresh tea from the farmers.

Cooperative: Minh Tien Cooperative buy fresh tea from contract farmers to sell to Phu Ben company. Transportation fees per ton of fresh tea which received from Phu Ben is about 250000 VND/ 1 ton fresh tea.

3.2.3. Processors

There are 2 types of tea processing companies, of which the qualified companies are usually the large-scale firm, heavily invested in the technology chain, housing and plants... in order to access the export markets due to the fact that the processed black tea is mostly for exportation.

However, there is a quite large amount of households which organize small-scale processing establishments that considerably affect the quality and reputation of the tea processing industry.

In general, the tea processors' raw materials in different companies are quite different considering types of ownership, investment level as well as business strategy of each company. For example, the Phu Ben limited company has around 80% of tea materials grown on its self-invested tea areas, meanwhile the Hung Ha limited company fully depends on the

tea materials from non-contract farmers and certain collectors.

There are usually 2 type of exportation of black tea: direct export with the large-scale companies and indirect export with the smaller scale companies. However, to reduce the intermediate costs and to increase the value added, the processing companies often make effort to export directly – currently, it is estimated that around 70% black tea export is through the channel of direct export, and only the remaining 30% are exported indirectly.

3.3. Cost and benefit analysis of actors in the black tea value chain in phu tho

To calculate Value added per 1 ha, VA/ha of worker farmers appeared to be by far the highest with nearly 53 million VND which was followed by non-contract farmers and contract farmers. These numbers were over 44 million VND and nearly 39 million VND, respectively. It can be seen that due to the investment of companies in fertilizer, pesticide and strict management in tea production, worker farmers will gain the highest productivity, leading the highest VA/ha among 3 farmer groups. According to estimates, it is necessary to process 4,3 to 4,4 kg of fresh tea in order to have 1 kg of black tea. Therefore, the VA per ton of black tea products is 11.407 million VND for none contract farmers, 10.882 million VND for worker farmers, and 10.622 million VND for contract farmers - the lowest level.

Although the VA per ton black tea of worker farmers (10.882 million VND) and contract farmers (10.622 million VND) are lower than that of non- contract farmers (11.407 million VND), the total VA per ton black tea of non- contract farmers chain is lower than those of contract farmers chain and worker farmer chain, with levels of

20.201 million VND, 23.944million VND and 26.126 million VND, respectively. Also, the dried tea of enterprises having material areas with high quality leads to the higher price. All of this are due to the advantage of worker farmers that their outputs are guaranteed and stable. Large processors have linkaged with foreign firms, such as Phu Da Tea Company have made joint ventures with Iraq and Phu Ben Tea Company have done similarly with one branch of the famous Indian tea company.

Distribution of the VA among actors per ton of black tea

In the 1st chain: The VA is mainly from company accounting for 58%, the remaining 42 % is from worker farmers. In the 2nd chain: The VA is mainly from company, accounting for 52%, the remaining shares are 45% from contract farmers and 3% from Cooperative. In the 3th chain: The VA is mainly from non-contract farmers, accounting for 57%, from companies of about 39% and from collectors of about 4%.

It can be seen that in the 3 th chain, % VA of non contract farmers is the highest. However, we have to appreciate another sides in the black tea value chain, not only economic benefit.

3.4. Influence Of Contract Farming On Black Tea Value Chain In Phu Tho Province, Vietnam

3.4.1. Influencing of contract farming on whole black tea value chain

a. Increasing the total value added (VA) of chains:

According to the results in Figure 2, total value added of the 1st chain (worker farmers) maximum, attain to 26.126 million VND per 1 ton black tea and total value added of the 2^{sd}chain (contract

farmers) attains 23.944 million VND per 1 ton. Minimum is total value added of the 3th (non contract farmers). In the 1st chain, depend on making a contract with the company, fresh tea have higher quality because the supplies are adequate, fertilizers, pesticides quality and complying close up manufacturing process of increasing fresh tea in the company. In addition, companies with contract with farmers have modern technology of manufacturing process for black tea and higher skill level, contributing to producing black tea with high quality, and have the highest prices of black tea in the 1st chain.

In the 2nd chain, although qualification of fresh tea in this chain is not higher than that in the market because the company is only supplying pesticides for contract farmers, but not monitoring closely the manufacturing process of fresh tea of the farmers. However, Phu Ben company made a contract with the farmers for purchasing most of fresh tea to put in the manufacture process so that the black tea quality in this chain is still higher fresh tea quality in the market. Then, the VA of the 2nd chain is standing the second in figure 2. Generally, depending on making contract, the total VA of chains are increasing, and higher than VA of non contract farmers chain.

b. Increasing the close links between the actors in the chain:

In 1st chain, we can see clearly the closed relationship between farmers and processing companies. Farmers must follows all items of contract carefully, from receiving materials to the processes of cultivating and making harvest of tea. The companies has to supply materials in advance and buy all of outputs. That is a closed relationship between factors in the chain.

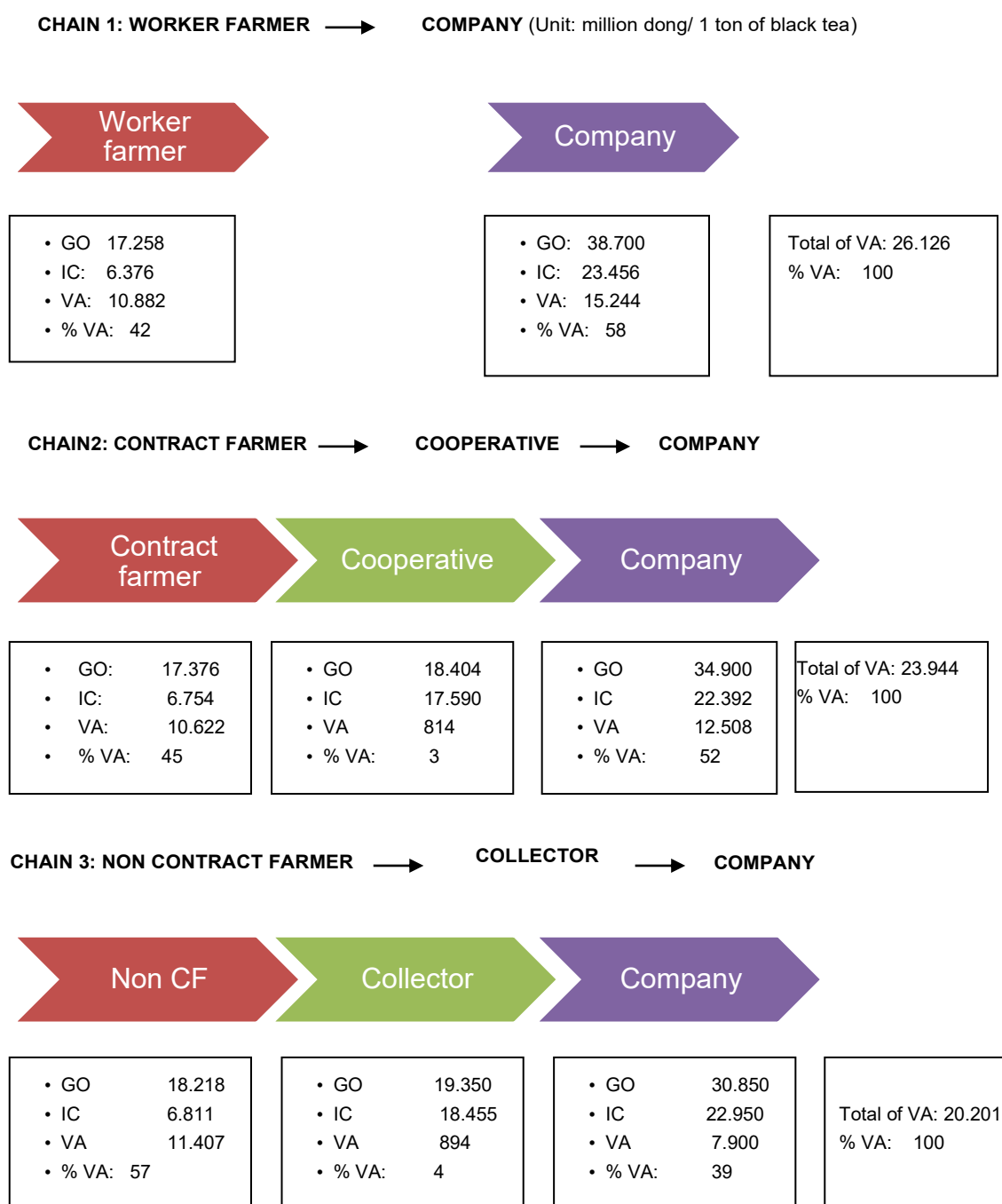


Figure 2. Cost and Benefit of actors in the black tea value chain in Phu Tho province

In the 2nd chain, the relationships between contract farmers and the cooperative and companies are quite sustainable. Contract farmers sell tea to

the cooperatives according to oral agreements but quite strong because they are neighbors and even cousins with cooperative managers. Partly they believe

that cooperative managers are dynamic, experienced as longtime collector with reputation, partly because of reverence of knowing each other, such that despite fluctuations in the market price of tea, they sell most of tea to the cooperative. Also, because the cooperative provide fertilizers in advance, they also have certain attachments to the cooperative. However, contract farmers highly appreciated contract benefits of fertilizer provided in advance because fertilizer quality is guaranteed, affordable and comfortable to buy. This is important for the farmers in the context that they have usually to pay many items of family expenses such that there is often shortage of cash. The relation between Cooperative and company is quite close through selling contracts signed by two sides. Thus, in both above chains, linkages between actors is quite sustainable, contributing to strengthening the value chain.

3.4.2. Influencing of contract farming on actors in the black tea value chain:

a. Producers

- Inputs supply stability for producer

In the 1st and 2nd chains, worker farmer and contract farmer are both provided with high quality fertilizers in advance. For the worker farmers, they are also provided with pesticides in advance. It contributes to increasing productivity, fresh tea quality and ensuring preferred conditions of production for manufacturer (Oanh et al., 2016). If households are free, they can also purchase fertilizers, pesticides in advance in free market but materials quality is not ensured. In addition, purchasing in advance is also not convenient and easy, as worker farmers and contract farmers do.

- Ensuring the stability of the output market

The products of worker farmers and contract farmers are sold by contracts to large companies of Phu Da and Phu Ben. These are companies with vast experience in the market, large capital, modernized production technology, high-level of management and good reputation. They have often signed contracts with major and stable partners. Thus, the selling of products of households provided with contracts is more stable than that of non contract farmers.

- Create higher value added for worker farmers

Worker farmers have the highest tea land area with 0.64 ha due to land allotment from companies. Besides, due to supports from companies, including inputs with late payment, tea production technology advice, strict management, productivity of worker farmers is the highest. As a result, value added of worker farmers/ household/year is the highest, making them feel more securely in tea production (Table 2)

b. Processors:

Due to contract farming, processors have more stable materials zone that satisfy requirement of qualified product. With providing good input (fertilizer, pesticide, technology in tea production for worker farmers and contract farmers), companies receive fresh tea which are higher quality. Moreover, tea material source of these processors is always active because of close integration both sides in contract.

3.5. Limitations Of Worker Farmers And Contract Farmers Participating In Black Tea Value Chain in Phu Tho

3.5.1. Low fresh tea price

The price of fresh tea from worker farmers is usually lowest (Table 2). Sometimes, the gap is so high such that the worker farmers are not satisfied, with their efforts in comparison to the results received, leading to the situation that they sell the company's tea outside, illegally.

The price of fresh tea from contract farmers is ranked the second, lower than that of non- contract farmers and higher than that of worker farmers (Table 2). Contract farmers also complain about prices, which are usually lower than the market price, even though the difference is not much. However, this tea price is sometimes significantly lower than the market price. Then, contract farmers sell their tea outside, not to the Cooperative, leading to the situation that the cooperative managers find it very difficult to ensure the quantity of tea, as signed with company.

3.5.2. High quality requirements of fresh tea for worker farmers

The company requires workers to cut young tea leaves to make sure the black tea quality as the increasingly strict requirements of customers. This makes tea production volume of workers greatly decreased. Non contract farmers often wait longer, about 45-50 days to cut tea leaves, coercion long and weighing more. Thus, along with declining volumes of fresh tea, the tea price are also low so that worker farmers argued that they are more disadvantageous than non-contract farmers.

3.5.3. High water discount rate

Moreover, the company imposes the high water discount rate compared with the collectors in the spot market. Worker farmers complain about this because of the high water discount rate, their tea

production volumes decline around 10-15%, higher than that of the outside market (In depth interview of worker farmers). This makes their tea production volume actually sold to the companies declining significantly. They look for companies with more transparent procurement system.

3.5.4. The high levels of social insurance and health insurance contributions

Although social insurance contribution is voluntary and worker farmers are entitled to health insurance, receiving pensions when retiring, the insurance cost is a financial burden to the worker farmers. As the average value added of worker household/year is 33.8 million VND (Table 2), the average insurance cost of worker household is 10 million VND annually (In depth interview of worker farmers). Hence, after paying insurance contribution, the remained annual household value added /year is only about 23 million VND, not much higher than the average value added of non- contract farmers (annually 19.9 million VND) (Table 2).

3.6. Discussion

First, under the participation on contract farming, the chains of worker and contract farmers were more competitive and more sustainable due to higher tea quality. Worker farmers receive supports from company with good fertilizer, pesticide and technology. Hence, their tea quality is higher than that of non contract farmers, therefore it is easier to sell. Besides, the closed linkage between worker, contract farmers and companies through contracts will be ensured the sustainability within these chains.

Second, farmers who have signed contract with companies receiving benefit actually from contract farming in terms of

stable outlet. Based on association with big company, they avoided risks from fluctuated tea market which was adverse problems in tea industry. The reason is that black tea was mainly served for exporting purpose (occupied 80%), leading to dependent on tea world market.

Final, the given results were mostly due to the influence of “contract farming”. In the first chain, because of having contract with company, worker farmer were provided good inputs (fertilizer, pesticide, technology...), as a result, they achieved higher tea quality compared non contract farmers who did not receive support from company, using inputs from spot market with no commitment. Further more, in the second chain, because of linkage between cooperative and company, fresh tea outlet of cooperatives will be guaranteed to consume more stably than that of non contract farmers. As a result, farmers who selling fresh tea to cooperatives will be ensured outlet in comparison with non contract farmers.

4. CONCLUSIONS AND RECOMMENDATION

Based on value chain approach, the contract farming has crucial roles in the black tea value chain including creating more value added and building good relationship between actors. Thanks to contract farming, worker farmer chain and contract farmers chain have higher VA than non contract farmer chain. Moreover, the link between the actors of two these chains are more sustainable than that in non contract farmers chain. In addition, the input and output of two these chains are stable, creating favorable conditions for these households to produce comfortably, and ensuring a more stable source of income. All such factors help black tea

chain of Phu Tho more sustainable and competitive, thus contributing to strengthen and develop the value chain of black tea in particular, and agricultural chain of Vietnam in general. This demonstrates that the important role of contract farming model for promoting black tea value chain is currently facing many challenges, such as small production, fragmentation, poor quality tea, limitation in preservation mode, unclear connection, and instable market (Xuan Hai, 2015).

However, the disadvantage of worker farmers and contract farmers when participating in that chain of black tea is that tea prices are lower than those in the free market. For worker farmers, the requirements for high-quality fresh tea, high water discount rates and high insurance cost from the companies make their real incomes fall considerably. This requires companies to offer appropriate solutions such as strengthening inspection and monitoring purchasing system to create a more transparent procurement system. The company must offer more reasonable prices for tea producers. Tea prices for these households should not be too different than the market price to compensate for the reduced volume of tea because of the above-mentioned requirements of the company. This may ensure a good income for tea producers, helping them to feel secure to promote production, sticking to the company, and consciously developing tea gardens which are also the assets of the company for the period of 40-60 years.

For non-contract farmer chain, farmers should invest in tea crops by shifting to new high yield and quality varieties, using adequately and sufficiently high quality inputs (fertilizers and pesticides), and developing tea in a technical way. These

investment would bring about high VA/ha for non-contract farmers as those received by worker farmers.

Households with small areas should be supported in the establishment of groups, cooperatives, and tea growing regions to create a tea area large enough to generate better conditions for them to coordinate with processors to consume tea under the marketing contract; and to access to market, science, technology and credit.

Processing companies need to gradually shift from wide to deep development, by which reducing outputs but increasing qualities in order to get higher export prices. Enterprises should focus on investing in high-quality material areas though contracting with farmers to provide them with materials, technical trainings and tea production control. Besides, enterprises should invest in technology to improve the quality of black tea, increase VA of the value chains and stabilize the markets as the current tendency is the higher requirements of consumers in food safety for agricultural products.

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