

Contract Farming as a Determinant of Promoting Tea Marketing Channel for Small Producers in Phu Tho Province

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Abstract

Making contracts between farmers and firms (contract farming, for short) plays an important role in establishing access to the agricultural markets for the small producers, especially in the developing and less developed countries. It is argued that contract farming provides farmers with the assured sale of their crops and agro-business firms with a steady supply of agricultural products required by the market. This paper focuses on analyzing benefits of tea producers through signing contract with firms. By using relevant research methods of verifying studying areas, making Participatory Rural Appraisal (PRA), and surveying farmers, the paper finds that although contract farmers receive lower fresh tea price in compared with the price received by non-contract farmers, they would have higher price stability and are provided with market guarantee mechanism. These benefits are really important in context of globalization and market liberalization with the demand for high quality and high value products. It is highly recommended that small farmers therefore should participate in the coordination model between farmers and firms in the process of tea production and marketing in Phu Tho Province, Vietnam.

Key Words: *Contract farming, tea, marketing channel, small producers, Phu Tho*

1. Introduction

Vietnam has favorable conditions to develop tea production and marketing, especially in the mountainous and midland areas. Tea has long been grown in Vietnam, which are now popularized in 35 provinces nationwide with the areas of 130 thousand ha (Xuan Hai, 2015). Moreover, tea industry has contributed to increase employment and income for tea producers. Besides, it helps farmers eliminate hunger and alleviate poverty of the country (Viet Ha, 2016).

Since 2000, tea production has become one of the major agricultural programs in Phu Tho province. Tea is considered as staple crops playing an important role in enhancing income in many localities (Quoc Vuong, 2012). Tea growing position was confirmed on the midland region. Products are exported to many countries around the world.

Phu Tho province covers an area of 353,330 ha, of which agricultural land is 282,178 ha, accounted for 79.86 %; of which, 98,370 ha (27.84 %) is the agricultural cultivation land area and 178,723 ha (50.58 %) is forestry land area (PTSO, 2013).

In the period of 2006-2010, Phu Tho had gained many achievements in economic development. The annual growth rate of GDP was approximately 10.7 % during this period. The economic structure has changed significantly towards the industry, trade and services sectors. In 2010, the average GDP per capita reached at 11.8 millions VND (equivalent 636 USD). In 2011, the shares of the industry and construction sector, the services sector, and the agriculture, forestry and aquaculture sector in the provincial GDP were 40.24%, 33.02%, and 26.74 %, respectively. (Phu Tho DARD, 2011)

At the end of 2014, the total tea area risen up to 16,301 ha. Output has reached 152, 219 tons of tea leaves, about 52 thousand tons of processes tea (PTSO, 2014).

Main tea production regions in Phu Tho includes 9 districts of Doan Hung, Thanh Son, Tan Son, Thanh Ba, Ha Hoa, Yen Lap, Cam Khe, Thanh Thuy, Phu Ninh.

Contract farming is applied especially for the perishable agricultural commodities that need to be processed, such as vegetables, fruits and dairy (Bijman, 2008). Its applicability and necessity as a rural development tool has been recognized and discussed in many empirical studies in the context of its role in linking producers with agricultural markets, especially in the developing countries.

Contract farming brings benefits of marketing channel to farmers. Farmers can access to a reliable market (Prowse, 2012) because agribusiness firms have advantages in market knowledge and experience, processing technology, financial potential for sustaining international trade relationships (Simmons, 2002). Due to incentivizing the production of high quality, farmers' products meets specific quality requirements (Saenger, 2013), therefore their market is fairly ensured. Besides, firms provide technical assistance, inputs and credit for

farmers that assists them to create higher value products and increase productivity (Minot, 1986). Moreover, contract farming reduces the risk of price fluctuations (Setboonsarng, 2008) because the price is specified in the contracts at the beginning of the growing season (Silva, 2005).

There are many different classifications for contract farming. Eaton and Shepherd (2001) classify contract farming into five models namely centralized model, nucleus estate model, multi-party model, informal model and intermediary model. However, in this study for Phu Tho province, we focused on 2 types including nucleus estate model and intermediary model.

The nucleus estate model is similar to the centralized model in a way that a firm directly signs contract with farmers and provides extensive technical supports, inputs and close control of the production processes to farmers. 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. Firm collects the products and pay farmers for their labor contribution. Farmers in this model are worker farmers in Phu Tho province.

The intermediary model includes intermediaries (such as representatives of farmer's groups/cooperatives) between firm and farmers. Given the indirect linkage with farmers, firm might face with risks of losing control over quality, quantity and price. There could be also market uncertainties for farmers involved. Farmers in this model are contract farmers in Phu Tho province.

There are various marketing channels of tea farmers in Phu Tho province, consisting of 3 farmer groups: worker farmers, contract farmers and non-contract farmers (Non CF). The question is that the selling channel of non-contract farmers is better than that of the worker farmers who sell fresh tea directly to the companies or contract farmers (CF) who sell fresh tea through cooperatives? This study will analyse clearly the real situation of these channels and focus on the specific objectives as follows: (1) Describe characteristics of farmer groups; (2) Describe the coordination model between farmers and firms in terms of production and marketing of tea in Thanh Son, Doan Hung districts, Phu Tho province; and (3) Assess benefit of farmer groups (Worker farmer, Contract farmer and Non CF) in term of marketing of tea.

2. Methodology

Thanh Son an Doan Hung are 2 districts chosen for this study. They have satisfied following criterias: (1) Tea is the main crop in the production system of large scale and concentrated area, playing an important role in the socio-economic development of the province; and, (2) There are numerous tea marketing channels in this area.

A survey questionnaires were undertaken with 110 farmers in which there were 70 integrated farmers (including worker farmers and contract farmers) and 40 non contract

farmers. The information in the questionnaires regarding overall characteristics of the farms and the benefits obtained from participating contract farming.

110 tea cultivating households, divided into 3 groups based on stratified sampling method, as follows:

Worker farmers (40 farmers) are tea farmers who receive tea land from companies for up to 30 years and they produce fresh tea follow strict requirement of companies. This is nucleus estate model.

Contract farmers (30 farmers) are tea farmers who have their own land and sell fresh tea to Phu Ben company through Minh Tien Cooperative. Contract is signed between Cooperative and Phu Ben company. This is intermediary model and in the study sites, there is only this group signing contract in a fairly stable manner with Phu Ben company.

Non-contract farmers (40 farmers) have not cooperation with tea processing company and sell fresh tea on the open market through collectors.

Semi-structured questionnaires was carried out in big companies to collect the information about resource of companies such as labors, capital, assets, production equipments, result of processing and business of the Phu Da, Phu Ben companies in Thanh Son, Thanh Ba districts, Phu Tho province. Contracts were signed between these companies and farmers in term of tea production, tea processing. Besides, questionnaires clarified the linkages in production, processing of tea leaf by interviewing managers of the companies.

PRA (Participatory rural Appraisal) method was adopted in Thanh Son and Doan Hung districts, Phu Tho province to focus on the following content: 1) tea production of 3 farmer groups in Thanh Son, Doan Hung districts; 2) types of linkages models in production, processing and distribution of tea ; 3) benefits of the contract farming models;

The satisfaction of farmers about tea production and tea consumption was assessed by five-point LIKERT scale, ranging from (1) Very dissatisfied, (2) Dissatisfied, (3) Neutral, (4) Satisfied and (5) Very satisfied. Satisfaction index was the weighted average of the number of farmers in each level of satisfaction and the coefficient of each level, where “very dissatisfied” scored 1, and “very satisfied” scored 5.

In-depth interviews method was used for analyzing advantages of contract farming through discussing with managers of companies.

3. Results and Discussion

3.1 Overall Characteristics of Tea Farmers in Phu Tho Province

Table 1: Overall Characteristics of Farms in Phu Tho Province

Indicators	Unit	Group		
		Worker farmer	Contract farmer (CF)	Non CF
		Mean	Mean	Mean
Age of household heads	Years of Age	42.9	46.9	47.7
Schooling Years	Years of Schooling	10.00	8.90	8.2
TeaProductionYears	Years of Tea Production	22.8	17.00	16.40
Household Size	Persons	4.4	4.2	4.3
Tea Land	ha	0.64	0.43	0.45
Tea Productivity	tons/ha	21.4	16.1	16.7

Source: Survey result, 2015

The average age of household head is lowest of 42.9 years for the worker farmers group. The following is for the CF group with 46.9 years; and the Non CF group has the highest average age of 47.7 years. The average ages of the CF group and the Non CF group are similar.

The number of years experienced on cultivating tea of the worker farmers is highest of 22.8 years due to the fact that the big companies Phu Da and Phu Ben are former State – owned farms. The workers have cultivated tea in these Farms since 1990s. Due to longer experience, these worker farmers know well how to take care of tea in a more effective way and they abstracted many experiences during a long period of working with tea. The CF and Non CF households have cultivated tea recently, starting from before 2001 – the time that Tea Development Program has been determined as one of 6 major agriculture programs needed to develop. Then, their experience in tea cultivation is only around 16-17 years.

On the education level, the worker farmers households have higher education level but the difference is not large, 10 years compared with 8.9 years for the CF households and 8.2 years for the Non CF households.

The numbers of people per household is quite similar among these groups, around 4.2-4.4.

Worker farmers have the highest tea land area with 0.64 ha due to land allotment from companies. Tea cultivation area of contract farmers and non contract farmer are 0.43 ha and 0.45 ha, respectively.

Tea productivity of worker farmers of 21.4 tons/ha is the highest than those of the other groups. Non contract farmers ranked the second in having high level of tea productivity of 16.7 tons/ha while contract farmers have the lowest with 16.1 tons/ha. Worker farmers received the highest tea productivity because they are supported inputs such as fertilizer, pesticide, technique by companies.

3.2 Marketing Channels of Black Tea in Phu Tho Province

Due to the far distance of tea processing firms, 100% non contract farmers sell fresh tea to the collectors. They come to buy on-site if the households have large volume of fresh tea. Most of collectors have collected at a distant of around one kilometer from the households that there is not difficulties for them to transport. Farmers usually cut tea by machine, in the early morning to escape from sunshine or in the early afternoon for limit water exclusion.

Tea processing firms all make best effort to export tea, themselves (70%), to seek for higher profit, while a small numbers of them (30%) to export through authorized channels.

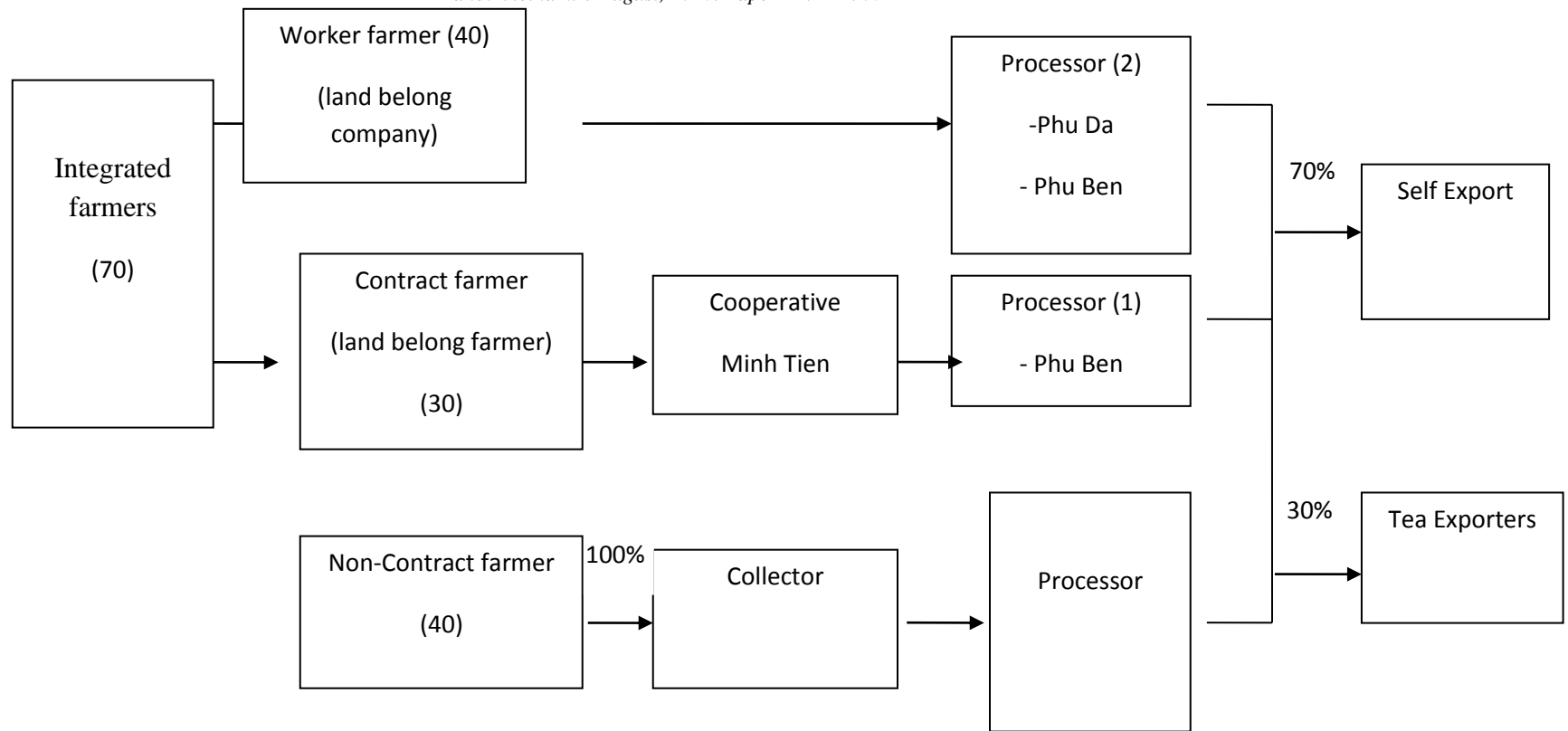


Figure 1: Marketing Channels of Black Tea in Phu Tho Province

3.3 Integration Mechanisms between Tea Producing Households and Tea Companies in Phu Tho

There are two type of signing contract between tea producing households and tea companies in PhuTho:

3.3.1 Contract between Worker Farmers with Phu Da and Phu Ben Companies

This is a nucleus estate model. In this research, two companies having workerfarmers are Phu Da and Phu Ben companies. Phu Da Tea Company is a joint-venture company in PhuTho province, having 1,483 ha signing contracts with worker farmers. Company's material zones include Thanh Son, Tan Son, and Yen Lap Districts in Phu Tho province.

Phu Ben Tea Company is a 100% foreign invested company with total area of 2200 ha. Material zones of this company are located in Thanh Ba, Doan Hung and Ha Hoa Districts.

According to Decree 135/2005/ND-CP regarding contractual assignment of agricultural land, production forest land and land with water surface for aquaculture in state-run agricultural farms and forestry farms, workers have to sign the contract with the company by which they would have a right to use company's land within 30 years and a responsibility to sell products to the company in return.

Land is allocated to worker farmer within 30 years with a condition that they have to produce tea and sell all the products for the company. The factories provide materials with defer payment and technical support to worker farmers, therefore tea produced by worker farmers often have a higher quality than tea produced by a small-size non contract farmers. Many households also produce rice or raise cattles, however most of them focus on tea.

There are some regulations in contract included:

- The land allotment must be conducted based on contract. When conflicts happen, the conflicts would be solved based on civil laws.

- Allotment time is subjected to agreement between workers and the company, however with the maximum of no more than 30 years. When the allotment is due date without violating the contract and the workers still have demand for using land, then the company can continue signing contractual assignment (Government, 2005).

- The company requests that the farmer workers must produce only tea in allocated land and are not allowed to produce any other crop, therefore farmers workers do not have the right to choose what crop should be produced like other farmers.

- Based on the economic standard, technique and the reality of the garden, companies start performing the contract.

Worker farmers receive supports from companies on high quality in-put including fertilizer and pesticide with defer payment and strict technical control process. In return, they have to sell all tea leaf to follow price imposed by the company. (Oanh et all. 2016).

3.3.2 Contract between Minh Tien Cooperative and Phu Ben Company

This is a intermediary model.

For promotion of marketing –based agricultural products, the governments have been institutionalizing contract farming to provide legal framework for private actors engaged into contract. The Decision No.80/QD/TTg (hereafter “Decision 80”) issued in 2002 defined that: “Contract farming is an agreement between a firm and producers (cooperatives, households, estates/plantations and farmers’ representative) for agricultural products (agricultural products, forest products and aquaculture products) and salt products, before production begins (at the beginning of a crop, a year or production process begins), in vertical integration from agricultural production to procession and marketing for sustainable production.”

In Phu Tho Province, there are a few farmers or groups of farmer who have their own tea land signing contract with companies. Manager of Phu Ben company, Deputy general director Nguyen Luong Duyen said that in previous time, there were some groups of contract farmer in Phu Ben company. One group had from 10 to 30 people. The head of group signed contract with Phu Ben company under supervisor of his village. Under the contract, Phu Ben company provided fertilizer to farmers and in return, farmers sold all their fresh tea to the Phu Ben company. However, this model was unsuccessful. It was difficult for the head of group to manage this model because members usually sold fresh tea to other collectors if spot market fresh tea price was higher than price in contract. This group usually broken up the contract between company and group.

In the study sites, there is only group signing contract in a fairly stable manner with Phu Ben company. This is the Cooperative namely Minh Tien in Minh Tien commune, Doan Hung district. Head of Cooperative signed written contract with Phu Ben company. This is a moderately close intergration. Farmers in Minh Tien village sell tea leaf to Cooperative through oral contract. However, when tea leaf price of Cooperative is lower than its of spot market, farmers can sell tea leaf to other collectors. It can be seen that this integration is a relatively stable because almost farmers are closed relatives or neighbours with the Head of Cooperative.

This contract with Phu Ben company will ensure farmers to consume their fresh tea products. The company also provides them fertilizer with defer payment.

Head of Cooperative always guarantees to buy fresh tea with reasonable price for farmers as the way to compete with other collectors. Because he used to be fresh tea collectors for long time so he can ensure benefit for farmers. Farmers can sell fresh tea to other collectors when fresh tea price of Cooperative is lower than that of spot market. Similarly, Cooperative can sell fresh tea to other companies when Phu Ben company give fresh tea price at low level. It means that the integration between Cooperative and company is not close. However, Phu Ben company still keep linkage with Cooperative for a long time hence they can built

material zone stably, and they could partly control the quality of input products for their processing process. This is foundation to built material zone with higher quality to promote exporting into strict market. (Oanh et all. 2016).

3.3.3 Content of Written Contract for Cooperative and Phu Ben Company

- Cooperative provides tea leaf for Phu Ben company following quality and quantity terms in contract.
- Price and quantity of tea leaf regulation follows to discuss between company and Cooperative.
- Phu Ben company provide fertilizer with defer payment base on total quantity tea leaf of Cooperative.
- Phu Ben make an immediate payment for Cooperative by cash or transfer

3.4 Benefit of Contract Farming on Exported Black Tea Marketing Channel in Phu Tho Province for Small Producers

Table 2: Outcomes of Production and Business of Fresh Tea in 2014 in Phu Tho Province

Indicators	Unit	Worker farmer	Contract farmer	Non contract farmer
Productivity	Tons/ha	21.4	16.1	16.7
Fresh tea price	VND/kg	3922	4041	4237
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
VA /kg	VND/kg	2473	2410	2653

Source: Survey result, 2015

Contract farming includes 2 groups: worker farmer and contract farmer. There are some benefit of these groups following:

3.4.1 Advantages of Materials Interms of Quality, Convenient and Late Payment

For worker farmers: Although the value added (VA)/1 kg fresh tea of worker farmers is lower than that of non contract farmers but worker farmer appreciate highly about other benefits. For material in tea production, worker farmers were very satisfied with the high point for quality of fertilizer and pesticide (4), convenient in buying input (4), late payment for material (3.9).

For contract farmers: Although value added (VA)/1 kg fresh tea of a contract farmer was at the lowest level of VND 2410/kg, followed by the worker farmer with VA of VND 2473/kg and the non-contract farmer at VND 2653/kg, contract farmers highly appreciated other benefits of tea production and sales according to the results shown in Table 3. For quality of fertilizer, contract farmers had the higher level of satisfaction than non-contract farmers with the scores of 4 and 3.6 respectively. Contract farmers also assessed that the pesticides had the higher quality than non-contract farmers with scores of 3.3 and 3, respectively. Similarly, contract farmers were more satisfied with the convenience of input provided by Minh Tien Cooperative at score of 4.3 than non-contract farmers at 3.9. On the degree of purchasing inputs and materials on credit, contract farmers' satisfaction was also higher than that of non-contract farmers, by which the former bought inputs and materials from Minh Tien cooperative while the later from other agents

Table 3: Satisfaction of Farmers on Tea Production and Marketing

Items	Worker farmers	Contract farmers	None Contract farmers
1. Materials			
Fertilizer quality	4	4	3.6
Pesticide quality	4	3.3	3
Price	3.2	3.2	3.3
Convenient	4	4.3	3.9
Late payment for material	3.9	3.7	3.6
2. Useful technical training	3.4	3.7	3.1
3. Payment of buyers	3.1	4	4.1
4. Stable output level	4.1	3.8	3.7
5. Fresh tea price fluctuation level	4	3.7	3.5
6. Reasonable selling price	2.4	3.3	3.6

Source: Survey Result, 2015

3.4.2 Stable Output and Stable Fresh Tea Price

For worker farmers: They appreciate highly about consumption level of fresh tea with the highest point 4.1 comparing with contract farmers and non contract farmers of 3.8 and 3.7 respectively.

For contract farmers: In terms of output stability, contract farmers were more satisfied than non-contract farmers with scores of 3.8 and 3.7 respectively. Indeed, Minh Tien Cooperative had contractual agreements to sell fresh tea to Phu Ben company, therefore tea selling of the Cooperative would be more stable than that of other collectors. Phu Ben is a big

tea processing and exporting company, which is a subsidiary of McLeod Russel India Ltd. Company under the Williamson Magor Group; thus its demand for fresh tea is much larger and stable.

Thanks to the stable output of big companies Phu Da and Phu Ben, satisfaction of fresh tea price fluctuation level of worker farmers was the highest of 4 point. Contract farmers ranked the second in having high level of this of 3.7 point while non contract farmers have the lowest with only 3.5.

Phu Ben Tea company, Ltd is a 100% foreign invested company which invested by Borelli Tea Holdings (BTH) - The UK. BTH is subsidiary of McLeodRussel India Co.,Ltd belong to Williamson Magor Corporation which is the company producing the largest amount of tea in the world, with 52 factories in India, 4 factories in Vietnam, 5 factories in Uganda and 1 factory in Rwanda. Therefore, output of Phu Ben Tea company is considerably steady with low fresh tea price fluctuation level (Survey result, 2015).

Phu Da Tea Company is a joint venture company between Vinatea Vietnamese Tea Company and Foodtuff Trading Baghdad Corporation of Iraq. Iraq requires a high quality of tea therefore Iraq's importing tea price is quite high. However, due to the unstable politic and the war, Iraq is quite a harsh market. Because of good raw materials, modern facilities, and good technical skills of worker farmers, Phu Da tea quality is quite good and being able to export to another high requirement market at high price.

Infact, above companies always try to keep a stable fresh tea price for worker farmers. Prices are being able to adjust according market change. However, fresh tea prices of these companies are always lower than market price because farms have to pay many investment fees for raw material areas such as investment fee for tea farms in the first 3 years or interest charge of defer payment of materials. Fresh tea price fluctuation level in one year of worker farmers are lower than those of non contract farmers. When the tea market price are raising, the company will adjust tea price in order to guarantee the different gap between tea price of worker farmer and tea market price are reduced, which also guarantee a stable spychology and a fair economic benefit for worker farmer. When the tea market is decreased, the company still try to maintain tea price for worker farmers in order to make them feel less stress and still take care of tea gardens. Because tea gardens are assets of the company, the company always maintain, reverse and enhance tea gardens from the beginning to the harvested time. They try to extend the life cycle of tea gardens by reinvestment for the tea farms after harvesting by putting more manure (In depth interview of company' managers).

Moreover, the quality of black tea is high therefore it is much easier and stable to sign contract with some big company. The raw materials of the company which are produced by worker farmers have a very high standard due to enough of materials and good producing

method. Furthermore, not only does the facilities and technologies are modern but the processing workers are also well-trained, which allows to improve the black tea's quality.

Black tea is the biggest tea exporting sector of Vietnam, contributing to more than 70% of total Vietnam's tea exports. The black tea are produced by 2 technologies:

- OTD Technology and its facilities come from Russia. Phu Da Company produced tea based on this technology. Although it is old technology, the facilities are imported comprehensively by Russia which are still good in comparison with others in the world. Besides, Phu Da Company always renovate facilities and import new one from Japan and Russia.

- Black Tea Processing Technology CTC was imported by India and used when Vietnam join in WTO in 2007. Phu Ben Company produced black tea based on this technology. Being a subsidiary of the famous India Tea Company in the world, Phu Ben Company has facility system and tea processing technology which are the most modern in Vietnam.

3.4.3 As For Worker Farmer, Taking Part in Contract Farming Help them to Enhance the Efficiency of Land Using

If accounted by value added/ha, the VA/ha of non contract farmers is 44.3 million VND/ha and lower than its of worker farmers with 52.9 million VND/ha. VA/ha of contract farmers is the lowest. The explanation is the higher efficient use of land by worker farmers than its of non contract farmers or it means that tea productivity of worker farmers is the highest with 21.42 tons per ha in comparison with 16.69 and 16.1 tons per ha of non contract and contract farmers, respectively.

It is clearly that producing tea in a systematic way with the investment of other companies in fertilizer and technique, worker farmers will gain a higher VA than other non contract farmers. This might be a recommendation in order to reorganize tea production and enhance the technique to improve the quality of Vietnamese tea.

3.4.4 Advantage and Disadvantage of Non Contract Farmer on Tea Marketing Channel in Phu Tho Province

Non contract farmers assessed that material including fertilizers and pesticides had the lower quality than of worker farmers and contract farmers. They get the lowest point of this factor with 3.6 for fertilizer and 3 for pesticide. Besides, they dissatisfy with fresh tea price fluctuation level with the lowest point 3.5. Although fresh tea price of non CF is the highest but non CF appreciate the lowest about stable output with 3.7 point. The linkage and information exchange between actors still have shortcomings and there is a lack of formal transactions. Almost payment made by the household groups and collectors has been conducted in cash based on the market price.

Non CF sell fresh tea for private company by collector, which make the households face with many difficulties. Most of private company do not have raw material areas therefore they

have to buy fresh tea in the market which have lower standard. Moreover, facilities and tea production technology of private company is not as good as others. As a result, their black tea quality is not good. Consequently, consumption of this marketing channel is not stable.

Facilities of OTD Black Tea Processing Technology are not being maintained or replaced with an appropriate way makes the tea quality and the price are decreased.

For facilities of CTC Black Tea Processing Technology, although it is an imported modern facility and technology with the good standard compared to others in India, Kenya, private companies are bad at management, processing worker's level, controlling quality method, therefore Vietnam CTC Black Tea's quality is as not good as black teas quality in the world.

The processing firms group play an important role in almost transaction. When the outputs are stable, they will stably collect fresh tea through collectors. If the export of the black tea decreases, they will reduce the volume of dried tea produced, and even some firms stop their operations or continue their business in other fields to prevent losses. At that time, only farmers are the most vulnerable because the firms would not buy their fresh tea. Tea would be redundant, as most of them have not been produced green tea due to the lack of stability and risks in payment.

5. Conclusions

Contract farming is an encouraging way in consumption for contract households. The consumption of these household are more stable and their fresh tea price is less fluctuated throughout the year (based on the ranking results) because they signed with companies, which own huge size, cooperate with foreign companies, have wide raw material areas, and have good financial position and technology. Their products have higher quality and brand equity than those that produced by others. All leads to the fact that these companies provided contract households with market guarantee.

Besides, tea productivity of worker farmer households is much higher than non-contract farmers due to the supports from companies on high quality in-put and highly technical control process. Therefore, value added per ha of worker farmers is higher than other household types. Furthermore, tea quality of worker farmer households is also much higher than others as the result of strict production process and quality control, and appropriate fertilizer usage which are suitable for the natural features of tea. Briefly, worker farmer households' output is more stable than the others.

In addition, the contract farmer households are provided high quality materials with late payment for cultivation of tea, in advance. This is really meaningful supports for them in production of tea in the context that the financial situation of households is difficult and the quality of materials in the market is not ensured, heavily affecting the quality of fresh tea.

For non contract farmers, the economic benefits of them is higher, however, they have to deal with unstable output. The Vietnam tea industry has experienced the difficulties during 2015 (Tien Anh, 2015) and 2016 (Minh Phuong, 2016) in terms of decrease in black tea price and output. Reasons of difficulties are unsteady product quality, over pesticide usage, huge amount of black tea inventory, and the effects of economic depression, for instance. All lead to the result that non-contract farmers might get much damage. So that, linkage between farmers and businesses should be more encouraged in order to have stable and sustainable output. The most difficulty of this model, however, is the breaking up contract because the price that mentioned in contract is normally lower than market price. Therefore, companies should allocate benefits in an appropriate way to make the suitable balance between contract's price and market price.

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