

## **CONTRACT FARMING FOR WELFARE IMPROVEMENT IN SMALL FARMER'S: AN INSTITUTIONAL ANALYSIS OF COFFEE LAMPUNG CASES**

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### **ABSTRACT**

This study aims to analyze the models, rules and patterns of interaction applied in contract farming. The location of the study took place at the coffee production center in Tanggamus and the Lampung Barat Region. The survey of farmer households was conducted in May-June 2018. The sample in the study was coffee farmer households and institutions involved in contract farming. The coffee farmer household sample is 170 respondents consisting of 98 contract farmers and 72 non-contract farmers. The analytical method used to answer the research objectives uses descriptive analysis. The contract farming applied by coffee farmers in Lampung is a contractual agreement with an intermediary model that is characterized by the existence of sub-contracts carried out by the sponsoring company with a farmer cooperative (KUB). Comparison of agricultural performance between contract farmers and non-contract farmers shows that contract farming can increase productivity, increase selling prices, and reduce production costs which ultimately increases farmer household income.

**Keywords:** Institutional, Model, Pattern, Performance, Rules

### **1. INTRODUCTION**

Consumer needs for healthy, safe and environmentally friendly food products have stimulated the supply chain transformation of the coffee trade. Global coffee processing companies and retailers demand sustainable standards and certifications from international trade companies. To meet these global standards, exporting companies are starting to integrate upstream sector activities with coffee producing countries to maintain supply chains.

Supply chain transformation in the context of the adoption of coffee product standards and certification presents a problem for small farmers. Coffee farmers in Indonesia are generally

small farmers with land ownership of 1-2 hectares, limited access to technology, market information, capital and credit (Arifin, 2010). In addition, the low productivity and quality of coffee and the institutional weakness are problems that require joint handling. Indonesian coffee productivity in 2013 was only 739 kg/ha, far below Vietnam which reached 2 499 kg/ha (Ministry of Agriculture, 2017).

The low productivity of Indonesian coffee plantation is thought to be caused by the Indonesian coffee cultivation system which is generally cultivated by smallholder plantations (95% of the total planting area) which still uses native seeds and some plants that are old and damaged (Rubiyo *et al.*, 2013). Indonesia generally produces low-quality Robusta coffee (Neilson, 2015). The low quality of coffee cannot be fully charged to farmers, as there are many parties involved in the process of forming a product value chain (Ibrahim and Zailani, 2010). The role of each actor involved in the value chain also determines the quality of coffee (Slob, 2006).

Contract farming is one of the instruments considered to help solve the farmers and companies' problems (Patrick *et al.*, 2004; Prowse, 2012). Contract farming for companies means one way to get raw materials that are in accordance with the standards desired by the company (Eaton and Shepherd, 2001). As for farmers, the existence of contract farming is expected to be a solution for farmer households in issues of technology and market access, productivity, quality, to institutions (Eaton and Shepherd, 2001; Singh, 2002; Simmon, 2012).

Contract farming is defined as an agreement that binds both verbally and written between the farmer and the company in the form of a forward agreement, with well-defined obligations and remuneration, often with specifications on product properties such as volume, quality and delivery time (Rehber, 2007; Catelo and Costales, 2008; Prowse, 2012). Contract farming conducted by companies with coffee farmers in Lampung is a part of a sustainability program driven by global interests in applying the standards and certification of traded coffee products. Contract farming between companies and coffee farmers in Lampung are contracted to develop coffee farmers from cultivation to marketing aspects with the 4C coffee standard (Common Code for the Coffee Community).

Contract farming creates institutional choices for farmers in marketing coffee products. Coffee farmers can sell coffee through institutional cooperative farmers called KUB (Kelompok Usaha Bersama) or through conventional marketing institutions. Institutional design can run effectively if it has clear set of rules and is able to provide incentives to the parties involved. Yustika (2008), the institutions available in economic activities determine how efficiently economic results are obtained while also determine how much economic distribution each participant receives.

## **2. LITERATURE REVIEW**

Contract farming began to develop in Indonesia in 1976 with priority on the main export commodities, e.g., rubber, tea, and palm oil. The development of plantations is carried out by applying the Project Implementing Unit (UPP) pattern for existing plantations and the pattern of the Core People-Plantation Company (PIR-BUN) (Rustiani et al., 1997). Next, contract farming experienced development not only from the commodities being cultivated but also from the types of contract farming applied. Patrick *et al.*, (2004), states that there are four types of contract farming in Indonesia, namely nucleus and plasma, sub-contract, harvest and pay, and operational cooperation. Patrick *et al.*, (2004) examined contract farming in eastern Indonesia, specifically Bali and Lombok. Commodities cultivated with contract farming systems in Bali are melon, corn seeds, ginger, vegetable, mangosteen, broilers, and rice seeds. Commodities cultivated with contract farming systems in Lombok are tobacco, rice seeds, cashew nuts, and seaweed.

Saptana *et al.*, (2007), examined the business partnership institutions in the vegetable production centers in Bali, North Sumatra, and West Java. The business partnership pattern (contract farming) that applied includes general trading patterns, marketing contract patterns, nucleus-plasma patterns, agribusiness operational cooperation patterns, fostering and seed credit patterns, cooperation in developing Agribusiness Sub Terminal (STA), cooperation in providing capital Multipurpose Cooperative (KSU), Village Credit Institutions (LPD), credit unions and banking institutions. Pangesty and Dessatria (2013), examined the contract partnership patterns between sugar mills and sugar cane farmers in Malang, East Java. The pattern of contract farming carried out between sugar cane farmers and sugar companies is the plasma-core pattern. The company acts as a "core" who is obliged to provide various incentives and supervision of loans, production equipment, counseling, and assistance. Furthermore, farmers as "plasma" are obliged to manage plantation land in accordance with the company's standards and sell the results to the company.

### **3. RESEARCH METHOD**

The study was conducted in coffee production centers in Tanggamus and West Lampung region. The selection of research locations was done purposively with consideration that in the two regions there were contract farms established between the sponsoring companies and coffee farmers. Data retrieval is done in May-June 2018. Data collected includes primary data and secondary data. Primary data was obtained from direct interviews with coffee farmers, farmer groups, farmer cooperatives (KUB), collectors, wholesalers, and sponsoring companies. Secondary data was also collected from various related agencies such as the Central Statistics Agency, Lampung Provincial Plantation Office, the Indonesian Coffee Exporters Association (AEKI), and the International Coffee Organization (ICO).

The sampling of farmers participating in contract farming was carried out using cluster sampling. The survey conducted by researchers involved 170 respondents consisting of 98 contract farmers

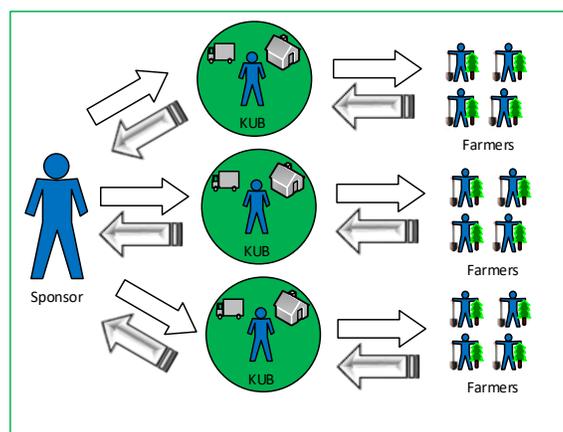
and 72 non-contract farmers. Non-contract farmers are coffee farmers who are in the closest area to contract farmers. Data collected from coffee farmer household samples are farming input-output data for 1 harvest season, ie 2017. Sampling for institutions involved uses the snowball sampling method. The number of institutional respondents interviewed amounted to 24 respondents consisting of 13 collector traders, 2 KUB, 2 Wholesalers, 8 Small and Medium Industries (IKM), and 2 representatives from sponsor companies.

Descriptive analysis method has been used to answer the research objectives. this method was chosen because it was considered the most appropriate method to describe how contract farming was carried out by farmers with sponsoring companies. To sharpen the analysis, researchers also conducted an analysis of institutional performance by comparing agricultural income and costs incurred by contract and non-contract farmers.

#### 4. RESULT AND DISCUSSION

##### 4.1 Model, Rules and Patterns of Interaction

The contract farming applied by coffee farmers and sponsoring companies is contract farming with an intermediary model. The intermediary model is characterized by the presence of sub-contracts carried out by sponsoring companies with KUB. The main characteristic in this model is KUB as an intermediary between farmers and sponsor companies in providing services in the form of coaching to farmers/farmer groups and buying farmers' products in the form of coffee beans and selling them to sponsoring companies. The flow of input-output transactions in the contract farming with intermediary model is presented in Figure 1.



**Figure 1: Input-output coffee transaction flow on contract farming**

Source: Modified from Teknoserve and IFAD (2011)

The sponsor company provides input in the form of technical guidance on coffee cultivation according to the principles of sustainable coffee cultivation and coffee seed assistance to farmers through KUB. In addition, sponsoring companies also pay for farmer membership fees in 4C certification. Coffee can be sold by farmers to sponsoring companies through KUB. Eaton and Shepherd (2001), the weakness of the intermediary model is that the sponsoring company has no control over production and quality along with the price received by farmers.

Contract farming can work well because it has clear set of rules and is able to provide incentives to the parties involved. Coffee farmers/farmer groups make a joint agreement with KUB and sponsor companies to enroll in a sustainable coffee cultivation scheme (4C). Farmers/farmer groups in this study whom are called contract farmers have the right to get assistance from sponsoring companies through KUB in managing their coffee farming in accordance with the principles of sustainable coffee cultivation. Coffee beans from gardens that have been registered in a sustainable coffee cultivation scheme can be sold to the buyer company through KUB in accordance with the quality standards desired by the company. The assistance made by sponsoring companies to farmers in the context of technology transfer has been able to improve the quality of coffee produced by farmers. These results are in accordance with Andriyanty's (2005) research, institutional development carried out by large companies to coffee farmers in Lampung has a real influence in improving the quality of coffee produced by farmers.

In addition to obtaining assistance from sponsoring companies, farmers also get other benefits in the form of premium fees for each certified coffee sold by the farmer to the sponsoring company. The premium fee obtained is US\$ 40/ton or equivalent to Rp 550/kg assuming an exchange rate of Rp 13 750 per dollar in 2017. The allocation of the premium fees obtained is 70 percent for farmers and 30 percent for KUB management. The average premium fee obtained by the contract farmer reached Rp.226 618 with an average sales of coffee to the sponsoring company of 774 kg. The premium fees obtained by farmers by mutual agreement are generally managed by farmer groups to buy production facilities such as fertilizers and pesticides to be used by farmers for the following season. Fertilizer procurement is carried out by farmer groups considering that fertilizer scarcity often occurs when farmers need it the most.

The next institution involved in contract farming is a collector traders. These collectors are appointed by KUB from group members. The collecting trader has the role of collecting coffee beans from group members and then selling the coffee beans to KUB. Collector traders benefit from the price margin for KUB purchases and the selling price of farmers to traders after deducting operational costs.

KUB is one of the institutions in contract farming that has a strategic role. KUB is an intermediary between farmers and companies and companies with farmers. KUB is obliged to

run the sponsoring company's program in the form of fostering farmers/farmer groups in accordance with sustainable coffee cultivation principles and educating farmers to rejuvenate coffee gardens by providing coffee seedlings to farmers. Fostering of farmers is carried out by the Internal Control System (ICS) recruited by KUB. In addition to running the company program, KUB also has its own program in the form of procurement of sunbeds/tarpaulins with revolving funds, demonstration plots, and composting houses.

KUB as an intermediary company is obliged to fulfill the coffee delivery quota in accordance with the coffee quality standards desired by the sponsoring company. The quota size obtained by KUB is determined based on the number of farmers and KUB performance. KUB as a vendor of a sponsoring company receives a fee of Rp.400-Rp.600/kg for each coffee bean shipped of the company standards. In addition to profit margins, KUB has the right to obtain 30 percent management fee of the premium fee. The amount of management fees obtained by the KUB depends on the quota and the amount of coffee beans that KUB can send to the sponsoring company. KUB management funds are allocated to pay ICS salaries, KUB operational activities, and procurement of seeds.

Stessens *et al.*, (2004) stated that farmer organizations in contract farming schemes have two strategic roles, namely as facilitators and contractors. In the research, it is found that there are two types of KUB that perform different roles. First, the KUB that has a role as a farmer facilitator. The KUB has a role of organizing farmers in producing coffee in accordance with the principles of sustainable coffee cultivation, collecting farmers' produce, and marketing it. The set of rules implemented by KUB as a facilitator in marketing coffee beans to farmers uses the selling chip system. The selling system carried out by farmers/farmer groups uses a collective marketing system. This marketing system allows farmers/farmer groups to obtain greater added value compared to direct selling. The added value obtained by farmers/farmer groups resulted from the sorting and grading activities carried out in the group.

Second, the KUB that has a role as a facilitator and contractor. As a facilitator, KUB has the role of organizing farmers in producing coffee in accordance with the principles of sustainable coffee cultivation, buying farmers' products, and marketing their products. The role of the contractor is run by KUB which uses a direct selling system. The direct selling system is implemented by KUB which has the capital to buy coffee beans from farmers. KUB that carries out this role bears all risks including the risk of bankruptcy. Instead of being a KUB, which was identified as a farmer organization, KUB with this system includes intermediaries who obtains mandates from sponsoring companies to guide and buy coffee beans from farmers.

The existence of KUB which is identified as a farmer organization should be an institution that represents the interests of farmers. The fact that KUB is generally an individual company

identified as a farmer organization has provided institutional choices for farmers to market the coffee beans they produced. The farmers' choice to market their coffee yields to KUB proves that KUB has played a role as a good facilitator in organizing farmers' production, building strong group institutions, and empowering and increasing the bargaining position of farmers with better quality coffee yields.

The contract farming schemes that encourage the presence of collective action in the form of farmer organizations face various obstacles. The negative stigma of agricultural cooperatives in the past about the low representation of farmers, bureaucratic inefficiency to political manipulation cause agricultural cooperative schemes as a manifestation of farmer organizations being difficult to develop. The efforts of the sponsoring company to present farmer organizations as an ideal institution to represent the interests of farmers face quite serious obstacles. At the beginning of its development, KUB was established by a joint group of farmers who formed a joint business group (KUB). Over time, KUB changed its ownership status to individual companies.

The institutional interaction pattern done by contract farmers is carried out directly by the company's AgriService team through ICS in KUB. Communication between farmers/farmer groups and ICS as well as AgriService companies is done intensively with face to face communication, as well as using telephone as a media. The financial transaction system is carried out by bank transfer. Bank transfers are made directly to farmers for the premium fees, while payments for coffee sales are made by/through KUB. Payments are made within 3-5 days.

The issue of the low quality of coffee as the main raw material has encouraged sponsoring companies to develop coffee farmers in Lampung. Fostering of farmers has been done by the sponsoring companies since 1994. Along with the emergence of global initiatives in the application of standard and certification of traded coffee products, in 2010 the sponsoring companies began organizing farmers to form Joint Business Groups (KUB) and involving coffee farmers in 4C certification.

To establish this partnership, the company offers various programs to farmers. The programs offered to farmers is written inside a memorandum of understanding (MoU) which contains the rights and obligations of the parties. The sponsoring company as the first party is obliged to provide guidance for farmers and provide information about the price of coffee to KUB, farmers, and collector traders on a regular basis. In addition, sponsoring buyers also offer coffee marketing schemes in accordance with the agreement of both parties. With the agreement stated, the sponsoring company has the right to obtain coffee beans according to the standards desired by the company. The quality requirements of coffee beans received by the sponsoring company are beans with maximum water content of 12 percent, a maximum defect value of 80, and passed

the taste test. Contract farmers can sell coffee to the sponsoring company through collector traders or directly to KUB. The sponsoring company has the right to set a coffee seed delivery quota by KUB as a vendor based on the results of KUB performance evaluation.

#### **4.2 Institutional Performance of Contract Farming**

Household farmers who participate in contract farming are obliged to apply technology in accordance with sustainable coffee cultivation standards. The technology applications to coffee farming will improve the quality and productivity of coffee farming. Therefore, this study focuses on the comparison of revenues and costs incurred by contract and non-contract farmers. The structure of revenue and cost of coffee farming shows that the average income of contract farmers is higher than the average income of non-contract farmers. The average contract farmers income is Rp. 16 468 441 per hectare, while the average non-contract farmers income is only Rp. 12 705 773 per hectare. The average income of coffee contract farmers in 2017 is Rp. 14 992 312 per hectare. The average income difference of the contract farmers and non-contract farmers is due to higher productivity and selling price of contract farmers than non-contract farmers. The production, productivity, and price of coffee can be seen in Table 1.

**Table 1: Production, Productivity and Prices of Coffee at the farm level**

| Description          | Contract | Non Contract |
|----------------------|----------|--------------|
| Land (ha)            | 2.04     | 1.64         |
| Production (kg)      | 1457     | 965          |
| Productivity (kg/ha) | 746      | 629          |
| Price (Rp/kg)        | 23 176   | 22 216       |

Source: calculated from field observations

Contract farmers have higher productivity than non-contract farmers. The average coffee contract farmer productivity is 746 kg/ha, while non-contract farmers are 629 kg/ha. The research found that on average, contract farmers have applied good garden management. The use of fertilizers that are suitable for plant needs, maintenance activities and good pruning of coffee trees are estimated to increase the productivity of contract farmers' coffee farming.

The coffee selling price of the sample coffee farmers is determined by the quality of the coffee produced. Contract farmers receive higher prices than non-contract farmers. Contract farmer averagely receives the price of Rp.23176/kg with an average water content of 15.5 percent, while the non-contract farmer receives a price of Rp.22216/kg with an average water content of 18.6 percent. This result is the same with study done by Kustiari (2011), the price difference of coffee sales from farmer groups to partner exporters and free exporters reaches Rp 1000-2000 per kg.

The analysis result of the costs and revenues structure of coffee farming show that coffee farming has R/C ratio > 1. This means that coffee farming for sample farmers is feasible because it provides greater revenues than the costs incurred. The analysis of coffee farming revenue and cost can be seen in Table 2.

**Table 2: Costs and Revenues analysis of coffee farming**

| Description<br>(Rp/ha) | Contract |        | Non Contract |        |
|------------------------|----------|--------|--------------|--------|
|                        | Value    | %      | Value        | %      |
| Revenue                | 16468441 | 100.00 | 12705773     | 100.00 |
| Cost                   | 7957268  | 100.00 | 9145898      | 100.00 |
| a. Fertilizer          | 2488397  | 31.27  | 2142689      | 23.43  |
| b. Pesticide           | 389071   | 4.89   | 380382       | 4.16   |
| c. Labor               | 4177879  | 52.50  | 5757602      | 62.95  |
| d. Transportation      | 296248   | 3.72   | 270035       | 2.95   |
| e. Skin breaker        | 345045   | 4.34   | 325482       | 3.56   |
| f. Depreciation        | 226276   | 2.84   | 241994       | 2.65   |
| g. Others              | 34352    | 0.43   | 27714        | 0.30   |
| Profit                 | 8511173  | 100.00 | 3559875      |        |
| R/C ratio              | 2.07     |        | 1.39         |        |

Source: calculated from field observations

The R/C ratio value of contract farmers is greater than non-contract farmers. The contract farmers R/C ratio value is 2.07 and non-contract farmers R/C ratio value is 1.39. The farmer's R/C ratio value of 2.07 means that every Rp. 100 costs incurred will receive revenue of Rp. 207. Likewise, the R/C ratio value of non-contract farmers of 1.39 means that Rp. 100 costs incurred will receive revenue of Rp. 139.

## 5. CONCLUSION

The contract farming applied by coffee farmers in Lampung is a contract agreement with an intermediary model. The main characteristic of the intermediary model is that the sponsoring company does subcontracts with KUB to buy coffee beans from the farmers. The set of rules in the intermediary model are contained in a memorandum of understanding which contains the rights and obligations of the parties involved. The interaction pattern between parties involved in intermediary models is intensive.

Performance comparison between contract farmers and non-contract farmers shows that the benefits of coffee contract farming are higher than non-contract farming. Contract farmers have

higher productivity and prices than non-contract farmers and lower production costs than non-contract farmers. So it can be concluded that contract farming can increase productivity, increase selling prices, and reduce production costs which in turn will increase farmer household income.

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