Value Chain Financing in Coffee Agribusiness (the Case of a Cooperative in Pangalengan, West Java, Indonesia)

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Abstract, Economic globalization encourages coffee farmers to prepare themselves to adapt and compete. In dealing with this issue, Margamulya Coffee Farmer Group has transformed into a cooperative under the name of the Margamulya Coffee Producers Cooperative (MCPC). MCPC sold 80% of its coffee production to PT Taman Delta Indonesia (PT TDI) and was committed to its permanent supplier. In fulfilling its role as coffee suppliers, farmers were faced with a lot of capital needs to produce quality coffee. MCPC needs capital to pay farmers cherry as well as processing and marketing costs. This study aims to describe the coffee value chain in MCPC, to identify the perpetrators and their business processes, and to design financing pattern suitable for farmers and MCPC. The method used was case study at MCPC using value stream mapping technique. The results show that there are two value chains in coffee agribusiness in MCPC while the actors in the chain consist of Farmer-Cooperative-Exporter and Farmers-Cooperatives-Retail (café/others). The business process in farmers remained in coffee producing, while the cooperatives focused on processing and marketing. The result of this study shows that the proposed financing model of value chain financing for its success requires the involvement of stakeholders from outside the supply chain. Value chain financing for structured markets gives more guarantee of business sustainability due to market certainty and price. This encourages farmers to maintain both the quantity and quality of their coffee products.

1. Introduction

In Pangalengan sub District, there is a cooperative whose members are coffee farmers named Coffee Producer Cooperative Margamulya (MCPC). This cooperative holds and distributes 80% coffee beans to PT. Taman Delta Indonesia and the rest to other buyers such as Indocom, Sarimakmur and café around Bandung. The receipt of MCPC coffee by the structured market was due to assistance from PT Taman Delta in obtaining UTZ certificates essentially in the management of its business on the environment. With regard to the environment and social aspects can be obtained a high price [1]. In addition, in some countries, cooperatives can increase coffee farmers' access to wider markets [2].

The demand for 70 tons of green beans per year means that 350 tons of cherry is required, and if the average price of cherry is Rp 8,500 per kg, which means the needs of funds to pay farmers around Rp. 3 billion. In addition, processing from cherry to green bean certainly requires time and the availability of large funds to pay coffee farmers and for the cost of logistics and processing. This is certainly very difficult for cooperatives who are only 3 years old. This condition is because the payment system from PT Taman Delta Indonesia (TDI) has a grace period of about 1-2 weeks, while farmers want to be paid in cash because they need money to meet their daily needs. Meanwhile, if not immediately paid, then farmers would sell coffee to middlemen who roam the Pangalengan sub District by offering in cash payment but lower prices. In other words, the abundant coffee harvests from farmers were not
currently accompanied by the readiness of the downstream subsystem (agroindustry) owned by MCPC as a result of the weak capital of the cooperative.

From several previous studies, financial problems in a chain involve actors whose needs are different, especially during pre-harvest and post-harvest [3]. In the case of the MCPC, fee is required to pay the raw material of cherry coffee from farmers and the cost for processing cherries into green beans. Therefore, this study aims to examine how exactly business processes in the value chain of coffee and how appropriate financing patterns can be developed to meet the needs of actors involved in the Java Preanger coffee value chain in the MCPC.

2. Materials and Methods
Research object is coffee value chain financing with structure market orientation. Meanwhile, research subject was covered all coffee agri-business actors along the supply chain of every agri-business sub system from up-stream and down-stream who were involved in the chain.

Qualitative research was used in this research, due to the necessity of describing research study on agriculture institution roles and comprehension on research object phenomena as envisaged in the reality [4]. Case study was applied as research technique that is used to give in-depth and intensive study of an element or a target group on research subject [5].

The needs of value chain financing identified by value chain mapping that described the flow of information, goods, and money. Business process and needs of financing of some particular actors in the chain will create financing scheme with each actor capacity in the chain as its consideration.

3. Results and Discussion
3.1 Value Chain Mapping
MCPC has various marketing channels. The diverse marketing channels are determined by the various forms of coffee products produced by MCPC. Each product has a different target market. Each type of products produced has a different value, and there are different actors and activities in different chains. The various value chains contained in the MCPC are simply explained by the actors and the product forms in Figure 1.

![Figure 1. Value Chain Mapping on Coffee Agribusiness at MCPC](image-url)
However, the value chain mapping through the cooperative actually is divided into 2 VCs, which are structured market oriented (PT TDI) and unstructured markets (cafe, PT Sarimakmur, Indocom and end consumers). In the structured market, the quantity and quality of coffee demand is continuous, so there is a market guarantee.

3.2 Actors in Coffee Agribusiness Value Chain and Business Process

There are several actors along the value chain that involve in coffee agribusiness. These actors are farmers member and nonmember farmers, MCPC and Buyers who have different kind of role and activities in order to support of coffee agribusiness.

| Table 1. Value chain actors of coffee agribusiness |
|--------------------------------------------------|
| **Actors** | **Business Process** |
| Farmers | Member farmers conduct cultivation of UTZ-certified Arabica coffee crops of *Sigarar Utang* variety and harvesting. The harvesting technique used by the member farmers of the cooperative was selective harvesting. Non-member farmers were producers of raw materials for the processing of green bean coffee of careless quality conducted by MCPC |
| Cooperative (MCPC) | The activities conducted by MCPC were the purchase of cherries, coffee processing, packaging, coffee marketing, and shipment. MCPC accommodated Arabica coffee farmers, established partnerships with various parties, conducted coffee processing management, and had a role as a distributor of aids to coffee farmers. |
| Buyers/exporter, PT Indocom, PT Sarimakmur, Cafes | Exporters are actors who need commodities based on contracts. Buyers purchase the harvested coffee through farmer group according to a contract that has been agreed in regards to the quantity, quality, continuity, prices, and payment method. PT. TDI finances UTZ certification for the coffee processing of MCPC as well as all farmers who were currently registered as MCPC members. The local coffee companies included PT. Indocom, who bought green beans of grade II and III specialties, and PT. Sari Makmur, who bought the green beans of careless quality. MCPC sold specialty coffee in the form of green beans of Grade I, and roasted beans to cafes and some individual end consumers |

3.3 Pattern of Financing on Coffee Value Chain Actors

Value chain actors have partial financing depending on each one to the financial institution around them. But not all can access financial institutions, especially farmers. Farmers' lack of access to formal financial institutions due to ignorance and inability to reach them.

Coffee farmers largely finance their coffee budgets from their own capital, because for seeds and fertilizers, at the beginning of planting, are provided free assistance from the government through cooperatives. Some farmers (40%) obtained loans from cooperatives amounting to Rp. 500,000 up to Rp. 5,000,000. Returned when the harvest arrives by cut from receipt of the sale of coffee to the cooperative.

Cooperatives in managing their business, first were assisted by the government in the form of land for processing plants, offices, coffee processing equipment and machines, buildings for factories and offices. For working capital, among others, to buy cery from farmers who should sell, but because farmers need cash money then to buy cery, cooperatives use funds from loans from BNI and other banks. Cooperatives can not rely on their own capital from member savings because there are still many members who do not understand cooperative. The need of this fund is very big because if to meet the needs of PT TDI buyer which is 70 tons of green bean per year, it means the cooperative requires 350 tons of cery worth Rp. 3 billion a year. Cooperative until now can only get credit up to Rp. 500 million in PKBL BNI and BRI approximately Rp. 900 million used for working capital and business development, so when viewed from the needs are still not met. Therefore then there are some investors invest funds in cooperatives including the board by applying the concept of profit sharing.
Formal financial institution in Pangalengan could only provide funds or payments in the conventional way (old paradigm approach) that was only providing credit according to government programs such as KUR with interest rate of 9% per year, the amount given in Office Unit maximum Rp. 200 million, in case more than Rp. 200 million must go to the branch office. Currently with President Jokowi's policy on social forestry, farmers get legal certainty in managing their land, so the possibility of accessing credit for KUR becomes easier.

Social forestry is the government policy of providing access for communities in and around forests to manage forest areas sustainably. This step is expected to create jobs and improve the welfare of the people, while taking care of the environment of forests with sustainable. The program targets 12.7 million hectares of community management access through five schemes, namely Community Forest, Village Forest, Community Plantation Forest, Partnership, and Indigenous Forest.

With the existence of social forestry is open for farmers to utilize forest land with plants that still maintain environmental sustainability, among others, by planting coffee. Even farmers who at the same time become a coffee processor will get a higher profit than just as a farmer. Therefore, in addition to increasing the productivity of coffee, farmers can apply for credit or financing for processing machines.

As explained before, that 80% of coffee farmers who are members of MCPC already have a structured market that is to exporter (PT TDI) means there is a certainty of market both volume and price so that it is called as a value chain structured market orientation. Therefore, along with the Value Chain (VC), the financing offered is the financing of the value chain not the partial per perpetrator.

Currently in some countries there has been a growing value chain approach of finance in rural areas. The relevance of this rural financing approach arises from the observation that an integrated activity between the financial sector to facilitate the flow of goods and services from producers to consumers. As stated by [6] that "Value chain finance - financial products and services flowing to and/or through VC to address the needs of those involved in that chain, need for finance, a need to secure sales, procure products, reduce risk and / or improve efficiency within the chain". Thus the financing of this value chain will complement the rural and agricultural finance system approaches. In other words, this value chain is another way to improve farmers' access to rural finance [7]. Therefore, referring to this VC financing model, then for the case of coffee business in MCPC, it is suggested that the financing pattern as depicted in Figure 2.

Figure 2 shows that the stakeholders involved directly are farmers and cooperatives, while as a supporting institution is a bank financial institution and the government and universities are as facilitators. This model is a triple helix implementation, all of which have important role to succeed the proposed design. For more details as follows:

1. There are 2 types of financing required by farmers, i.e. working and investment capital. Working capital includes agro-input such as fertilizer and labor costs, while investment capital refers to a simple processing machine to obtain higher value added than selling only in the form of cherry. The required loan is around Rp. 7 million up to Rp. 10 million. The mechanism of farmers through cooperatives proposes financing to banks for farmers' need to obtain agroinput credit. Agroinput company shows the agroinput value invoice purchased by farmers through cooperative, then bank pay to agroinput agent. Furthermore, farmers will repay the loan from the fruit of coffee sold through cooperatives.

2. For cooperatives required is temporary loan for cherry payment to farmer before receiving payment from buyer. This need is because farmers can not delay payments from cooperatives to meet their life needs. Thus a suitable financing model is factoring, the cooperative shows an exported invoice and paid by the bank about 70-80% of the green bean value sold to the exporter. Once the exporter pays the entire green bean value of the cooperative through the bank, then the bank pays the rest.
The role of higher education institution is to provide facilatation and provide assistance for the smooth financing of this VCF. The government through the Department of plantation and Department of Cooperatives and SMEs to provide technical guidance for coffee farmers in both quantity and quality, and to facilitate the form of coffee development program through cooperatives such as seedlings, engagement MCPC in events organized by the government both at the district, province and national level.

4. Conclusion

The result of value chain mapping indicates that there are 2 market orientation of coffee produced by MCPC, i.e. export orientation (80 percent) and retail orientation such as cafe and individual (20 percent). The channel is very short of the Farmers-Cooperatives - Exporters (PT Taman Delta Indonesia) and Farmers-Cooperatives-Retail (Indocom, cafes, and consumers). The business process of farmers is an on-farm activity, only about 15% have done simple processing that causes ‘horn skin’ or grain coffee. MCPC's business processes include providing production facilities for member farmers, providing guidance to members and facilitation of various coaching or mentoring from third parties to farmers. In addition, the MCPC is processing cherries into green beans, roasted beans and grounded coffee.

The financing model designed for MCPC conditions with the farmers as members is Value Chain Financial where farmers can be given financing for their farming from banks through cooperatives. The cooperative requires bailout funds for farmers cherry payment with factoring.

Need to strengthen institutional capacity of cooperative both human resources and capital, hence, the cooperative in the future can be a direct exporter. Implement VCF patterns for actors in the coffee value chain for a sustainable value chain.

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