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# Research Article
# Arabica Coffee Agroindustry Cost Requirement Analysis at Margamulya Coffee Producers Cooperative

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## Abstract

**Background and Objective:** The research analyze coffee agribusiness as one of the potential commodity that produced in Margamulya Coffee Producers Cooperative (MCPC) Bandung Regency. The purpose of this research was to explore business linkage between coffee farmers and cooperatives and analyze farming costs and cooperative operating costs on the agro-industry process at Cooperative level. **Material and Methods:** The research used case study and analyzed by value chain mapping and Porter Model approach to analyzed Arabica coffee agroindustry cost requirement. **Results:** The MCPC, which consists of 140 farmers, focus its business process on processing and marketing sub-systems, while, the farmers concentrate its business on farm sub-systems. Processed cherries in the form of green beans and roasted bean has been exported, with constituted 80 and 20%, respectively, while grounded bean sold to other market destinations, such as e-commerce and cafes around Bandung. Based on Porter Cost Analysis, production cost on coffee plant maintenance at farmer level was IDR3,849 per tree per year. The most significant cost proportion was farmer operation cost, which used for fertilization cost, plant maintenance, pest eradication and plant depreciation, with 41.57%. In Cooperatives level, the cost of production per year was IDR4, 235, 675, 207 and the largest cost proportion was purchasing cost of cherry and grain (horn skin) raw materials (accounted for 89.72%). **Conclusion:** Farmers were suppliers of raw materials for the business of MCPC in the form of cherry coffee which was then processed into green bean, roasted beans and ground beans. Both farmers, processing farmers and cooperatives require the largest fees for primary activities directly related to their business, not for management strengthening or technology development activities.

Key words: Arabica coffee, porter model, cooperative operating costs, cost requirement, value chain mapping

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## INTRODUCTION

Coffee is one type of plantation crops that have long been cultivated in Indonesia and have a high economic value. Seventy-four percent of the world coffee consumption belong to Arabica coffee group and 26% belong to the Robusta coffee group[1]. According to the Indonesian Institute for Plantation Research and Development, Arabica coffee grows well at the altitude above 1,000 m ASL with the rainfall of 1.500-2.500 mm $year^{-1}$, the average dry months of 1-3 months and the average temperature of 15-25. Java Preanger Arabica Coffee (JPAC) representing Indonesia is the best coffee of West Java and has several excellences of its strong aroma and unique taste. It is in accordance with the statement of Purnama[2], that Java Preanger Arabica Coffee (JPAC) is an Arabica type coffee produced by farmers in Priangan region and planted in the highlands of Priangan at the altitude of at least 1,000 m ASL. For the protection of geographical indications, in the certificate, JPAC flavor is differentiated into two variants: Java Preanger Arabica Coffee (JPAC) of Bandoeng Highland and Java Preanger Arabica Coffee (JPAC) of Soenda Mountain.

One of the cooperatives in Pangalengan is Margamulya Coffee Producers Cooperative (MCPC). This cooperative is a cooperative that unites coffee producers, especially Arabica coffee farmers, in Margamulya Village in running their businesses. Producer cooperative is the cooperative consist of producers of goods or services with the aim of avoiding competition, maintaining quality and maintaining the price stability of goods. Many Pangalengan people choose to grow Arabica coffee than Robusta coffee because Pangalengan has a geographical condition that fits the needs of Arabica coffee. Pangalengan has the height of 1.200-1.500 m above sea level and the rainfall of 1.000-2.000 mL $year^{-1}$.

As a business entity that aims at improving the productivity and welfare of its members, the cooperative serves the needs of its members. MCPC provides services for coffee farmers in Margamulya Village, most of which are the members of the cooperative. The facilities are obtained by the members because they have the position as the owners as well as the users of the cooperative. The cooperative has a distinctive characteristic that is different from other business entities, namely that members have a dual identity, where, in addition to being the owners, they are also the customers or users of the products or services provided by the cooperative (Law of Republic of Indonesia Number 25 year, 1992). Institutional innovations can reduce transaction costs and improve market coordination (e.g. cooperative, marketing group, collective action and farmer organization), have the potential to reduce the impact of imperfect markets and enable the link for coordinated inputs and outputs in the market and utilize the function of market for small farmers[3]. Cooperatives are also obliged to promote the interests of farmers as their members. The primary objective of producer organization is providing agricultural support services, including agricultural products marketing. Cooperative is a formally established organization for the economic benefit of farmers as voluntary members, by providing services that support agricultural activities, such as bargaining with customers, providing inputs, technical assistances and processing and marketing services[4]. Cooperatives and farmer associations are forms of (agricultural) producer organizations that have played an essential role in providing support to farmers to convert peasant production and adopt quality standards[5-7] suggested that such institutions as cooperatives can substantially reduce information gathering cost.

Cooperative contributes a significant role in enabling farmers to access specific markets[8] and farm commersialization[9]. Cooperative membership improve relationship between cooperative's members, increase number of productions[10], modern input adoption increased intensification and higher labor productivity[9]. Also, it improves farmer economic status[11], increase farm net returns, higher household income[10], higher revenue[9]. Furthermore, cooperative is effective in improving technical efficiency by providing support service to the member[12]. In other words, there is a business relationship between the farmers as members and the cooperative as a company owned by them.

Cooperative should have strategies to develop its organization. The cooperative must apply specific strategies that appropriate with the coffee typical characteristic[13]. External intervention is important in organizational capacity development, in particular, in order to fulfill customer demand and shock in the market[14].

In running the business, both farmers and the cooperative require capital to meet the need for the budget that has to be incurred. Farmers' need of the budget is to procure the facilities of production, care, harvest and post-harvest before the crops are marketed to the cooperative. The cooperative requires a cash budget to buy coffee cherries from the farmers because the farmers want to be paid in cash. The cooperative also requires capital for the processing of coffee cherries into green beans, roasted beans and grounded beans, in addition, that the cooperative also involves marketing budgets that include packaging, promotion and shipping budgets.

The objective of the study is examining the business relationship of farmers with the cooperative and the capital amount needed to finance the farming and cooperative business.

**Identification of problems:** Based on the above background, identified the problem as follows:

- How was the business relationship between coffee farmers and Cooperative of Producer coffee Margamulya (MCPC)
- How much was the capital needed to finance farmers and the cooperative

## MATERIALS AND METHODS

**Description of the study area:** The object that became the focus of this research was the business relationship between coffee farmers and the cooperative business and the researchers analyzed the cost requirements of the business process it was doing. The research design used was qualitative design with case study research technique. Case studies can examine every aspect of a research object in depth and detail[15].

The informants were 30 members of the MCPC farmers, as well as cooperative management of three people, namely the Chairman of the Cooperative, Finance Manager and Secretary of Cooperatives. The research conduct in Bandung regency for 8 months from March to November, 2017.

**Analytical technique:** Value chain mapping helped to see who the real actors were adding value to and which activities. Value chain mapping was a representation of all actors in the value chain and the flow of goods between them until it became the final product and marketed to the consumer[16,17].

So in this case, value chain mapping used to analyze the linkage between farmers' business and the cooperative, consist of:

- Participants; actors in the value chain involved and treats the product
- The flow of goods, was a specific activity carried out by every actor in the value chain
- Communication and information, including how, why and when information flowed to all actors in the chain
- Relationships, was how relationships between actors in the value chain (the duration of relationships and buying and selling relationships between actors)

Porter's value chain analysis used to analyze the cost requirements. It described the main activities and supporting activities in the value chain of MCPC, as well as answered the second identification, that was, analysis of the budgets needed. Primary activities of Porter's value chain were as follow[18]:

- Inbound logistics. Brought raw material from source to the company. The value be enhanced in this step by improving the quality of raw material as chain could well as optimizing the cost of inbound logistics
- Operation. Converting the raw material to finished goods was the job of operations. The customer value was increased majorly in this step if the operations were up to mark and the product was manufactured in the right manner and met quality standards such as machinery, packaging, assembly, equipment maintenance, testing, printing and operation of facilities
- Outbound logistics. Sending finished goods from manufacturing point to distributors and retailers. Activities related to the collection, storage and distribution of physical products to buyers, such as warehousing of finished products, material handling, shipping operations, ordering processes and scheduling
- Marketing and sales. Activities in persuading or attracting buyers (advertising, promotions, salespeople, quotas and prices)
- Service. Activities related to service provision to enhance and maintain product value (installation, repair, training, product addition)

And supporting activities were as follows:

- Procurement. It was an activity related to the function of purchasing raw materials
- Supplies and other types of goods that could be used as assets, such as machinery, laboratory equipment, offices and buildings
- Technology development. It consisted of several activities that could be grouped in to efforts to improve products and processes
- Human resource management. Activities that included recruitment, training and human resource development activities
- Firm infrastructure. Activities that included general management, planning, finance, accounting and quality management

## RESULTS

**Value chain mapping on MCPC:** MCPC had various marketing channels. Farmer organizations, such as co-operative play an

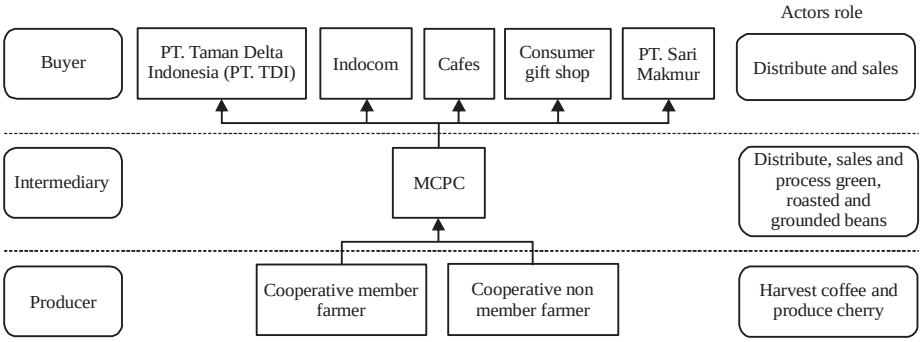


Fig. 1: Actors roles in coffee value chain business process

important role in linking producers to the markets[8,13]. The diverse marketing channels were determined by the various forms of coffee products produced by MCPC. Each product had a different target market. Each type of products produced different value and there were different actors and activities in different chains. There are several actors in the marketing channel that contribute in the value chain (Fig. 1).

**Cooperative member 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. Selective harvesting was the picking of only the coffee cherries that were ripe. Farmers did selective harvesting because the cherries harvested in this way cost more than the cherries harvested through strip harvesting. Selective harvesting technique was also recognized by farmers to increase the productivity of the coffee plants. The coffee cherries harvested were brought by farmers to MCPC.

There were also member farmers of the cooperative who do processing of coffee cherries into endocarp-covered form (horn skins). Processing farmers get cherries from their farms and buy cherries from other farmers for the same price with the cooperative' price. Processing farmers got the added value of cherry processing into horn skin of IDR 528,74 and profit of IDR 478, 74 per kilogram of processed cherry[19].

**Non-member farmers:** Non-member farmers were producers of raw materials for the processing of green bean coffee of careless quality conducted by MCPC. Non-member farmers conduct coffee cultivation and harvesting activities. The farmers also make their shipment to the cooperative. Most non-member farmers grow Arabica coffee bred by them from their gardens.

**Margamulya coffee producers cooperative (MCPC):** The activities conducted by MCPC were the purchase of cherries, coffee processing, packaging, coffee marketing and shipment. MCPC accommodates Arabica coffee farmers, establishes partnerships with various parties, conducted coffee processing management and had a role as a distributor of aids to coffee farmers. The added value is the changing form from cherry to green bean, roasted bean and ground bean that resulted increasing in price and output value.

**PT TDI, indocom, cafes, gift shop and reseller and PT sari makmur:** PT. TDI finances UTZ certification for the coffee processing of MCPC as well as all farmers who were currently registered as MCPC members. Being UTZ certified was a requirement of exporting coffee to Japan. PT. TDI obliged to assist member in getting the UTZ certification and UTZ quality control conducted annually. PT. TDI also provided certified coffee seeds and lend some coffee processing machines to MCPC. The delivery of coffee to PT. TDI was held every week with a minimum quantity of three tons of green beans.

MCPC sold green beans to local coffee companies. Green beans purchased by local coffee companies were green bean of careless quality and green bean of grade II and III specialties. The local coffee companies included 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. Specialty coffee in the form of ground coffee sold in some gift shops. Ground coffee is sold under the brand name "Gunung Tilu". Ground coffee sold to consumers directly and some were through the mediation of resellers. Green beans of Grade I, roasted beans and ground coffee marketed through e-commerce such as blibli.com.

Communication was done by the MCPC to farmers by inviting farmers to member meetings and distribution of aids. MCPC also communicated with its buyers. PT. TDI contacts the cooperative via mobile phone for weekly bookings and transactions with the cooperative, as well as providing assistance information related to the partnership. Gift shops, resellers and end-consumers contact the cooperative via mobile phone, or order products in the form of ground coffee, green beans and roasted beans through e-commerce, where the order payment transactions were done by transfer. Local coffee companies contact the cooperative through a mobile phone to place orders and deals with the cooperative, as well as provide information on the desired green bean qualification in accordance with the needs.

According to the MCPC, member coffee farmers were assets, because, without the farmers, there was no MCPC. MCPC was a collection of people, namely, coffee farmers. MCPC was obliged to promote the results of its members and provide for the needs of its members. MCPC regards PT. Taman Delta Indonesia as a partner as well as a buyer. As for the other buyers, most of them only did short-term buying and selling relationship.

Thus, it concluded that the cooperative as an institution that accommodated the collective actions of the farmers were able to reduce the impact of the imperfect markets and connect the coordinated inputs and outputs in the market for the small farmers incorporated in the cooperative[2]. In addition, Cooperative also provided technical assistance service as well as provides the crop processing and marketing[3].

## Capital requirement analysis based on porter's value chain analysis

**Capital requirement of member farmers of MCPC:** Most farmers who did not care for their coffee crops admitted that coffee care costs were expensive. Many farmers still did not perform regular fertilization twice a year or even did no fertilization at all. The care done by each farmer was weeding and pruning. Some farmers did not do the pruning so that the coffee trees grew until two meters high. It made the harvesting laborers have trouble so that many cherries were unpicked.

Most of the capital used by the member farmers was own capitals. Some other farmers get capital from Partnerships and Community Development Program of Bank Negara Indonesia (BNI) with the interest of 6%. As for farmers owning large landholdings, they borrow to Bank Rakyat Indonesia (BRI) under the guarantee of the land certificate through People's Business Credit (KUR) scheme. MCPC also provides loan funds for its members, but the amount is low. The loan payment to the MCPC is made by deducting payment for cherries from member farmers.

The use of cost on farmers based on Porter's model can be seen in Table 1. Activities in the value chain can be divided into two types: Primary and supporting activities. And cost calculated in the member farmers' cost requirements based on the Porter's model was the average cost per year per coffee tree[12]. The cost calculated in the cost of farmers' members based on the Porter model was the average cost of IDR

Table 1: Cost requirements of member farmers per coffee tree per year based on porter's model

| Value chain activities | Activities of company | Total value (IDR) | Percentage |
|---|---|---|---|
| **Primary activities cost** | | | |
| Farmers' inbound logistics | Input purchase cost | 657 | 17.07 |
| | Bank interest | 45 | 1.17 |
| | Total farmers' inbound logistics | 702 | 18.24 |
| Farmers' operation | Fertilization cost | 130 | 3.38 |
| | Pest eradication cost | 583 | 15.15 |
| | Plant maintenance cost | 102 | 2.65 |
| | Harvest cost | 682 | 17.72 |
| | Tree depreciation cost | 103 | 2.68 |
| | Total farmers' operation | 1,600 | 41.57 |
| Farmers' outbound logistics | Distribution cost | 200 | 5.20 |
| Total primary activities cost (1+2+3) | | 2,502 | 65.00 |
| Farmers' purchase | Cost of tools | 69 | 1.79 |
| Farmers' infrastructure | Cost of land use | 0 | 0.00 |
| | Land rent | 38 | 0.99 |
| | Cost of profit portion for Perhutani | 1,211 | 31.46 |
| | Land tax | 29 | 0.75 |
| | Total farmers' infrastructure | 1,278 | 33.20 |
| | Total supporting activities cost (4+5) | 1,347 | 35.00 |
| | Total cost requirements of member farmer | 3,849 | 100.00 |

Table 2: Cost requirement of member processing farmers based on porter's model

| Value chain activities | Activities of company | Total value (IDR) | Percentage |
|---|---|---|---|
| Farmers' inbound logistics | Cost of purchasing cherrys | 26,271,400 | 96.07 |
| | Cherry's transportation cost | 3,750 | 0.01 |
| | Total farmers' inbound logistics | 26,275,150 | 96.08 |
| Operation | Labor cost | 412,500 | 1.51 |
| | Water cost | 20,000 | 0.07 |
| | Fuel cost | 5,000 | 0.02 |
| | Total operation cost | 437,500 | 1.60 |
| Outbound logistics | Shipment cost | 42,553 | 0.16 |
| | Total primary activities cost | 26,755,203 | 97.84 |
| Purchase | Depreciation equipment cost | 230,000 | 0.84 |
| | Supplies | 9,750 | 0.04 |
| | Total purchase | 239,750 | 0.87 |
| Technological development | Depreciation machine cost | 221,250 | 0.81 |
| Human resource management | Incentive | 5,000 | 0.02 |
| Farmers' infrastructure | Maintenance cost | 125,000 | 0.46 |
| | Total supporting cost | 591,000 | 2.66 |
| | Total | 27,346,203 | 100.00 |

3,849 per year per coffee tree. In North Sumatra, the plant maintenance cost is IDR 9,491,366 per hectare or IDR 4,745 per tree[20]. Based on comparison between both area, it shows that MCPC farmer more efficient in planting coffee.

At the farmer level, 65% of the total cost was allocated for primary activities which consist of farmer's inbound logistics, farmers' operation and farmers' outbound logistics. Meanwhile, 35% of the cost was allocated for supporting activities such as farmers' purchasing and farmers' infrastructure.

Contribution of input cost to total cost is about 17.07%. This input purchased from various farm shops in the area. The seeds used by the majority farmers come from the assistance channeled by the cooperative. However, some farmers still do their own breeding them selves.

Fertilization cost only 3.38% because most of farmers used organic fertilizer home made, but for pest eradication cost reached 15.15% because coffee very susceptible to coffee fruit borer snag.

The labor salary is the highest cost incurred by the farmers' operation (17.72%) because in the cultivation of coffee crops required many laborers, especially for harvesting and weeding. Based on the calculation of the harvesting cost in West Bandung[21], MCPC is relatively cheaper than in West Bandung.

Distribution cost (5.20%) incurred by the farmers is the cost to deliver coffee cherries to the cooperative. Farmers usually deliver by private vehicles or by using taxibike services.

The cost of land use was the cost consisting of land lease cost, Perhutani profit sharing cost and taxes on owned lands. Perhutani is state enterprise of Indonesia government. Most of the farmers were members of the MCPC coffee farmers who plant in Perhutani land. Perhutani allows farmers to manage their forests on condition that they make a profit share of 15% of the coffee harvest.

As can be seen from the Table 1, the cost of profit sharing with Indonesian Forest Association is 31.46%. As for the other supporting costs were to pay tools cost(1.79%) and land tax for owned land (0.75%) or rental fees for rent land (0.99%).

Coffee trees calculated in the above calculation are Arabica coffee trees with the varieties of Sigarar Utang, Timtim, LS 975 and Kartika. The coffee seeds sowed by MCPCcome from the government assistance. Coffee seedlings that have been sown by MCPC have been through the certification process, so that the price reaches IDR 2,000.

Some member farmers do cherry processing into endocarp-covered form (horn skins). MCPC applies the standard in the purchase of endocarp-covered beans (horn skins). The price set by MCPC itself depends on the quality of the horn skins produced. The use of budgets on the processing farmers based on the Porter's model can be seen in Table 2.

At the level of processing farmers, the amount of costs required in 1 season or 1 year around IDR 27, 346, 203. The cost for primary activities was 97.84% consist of Farmer inbound logistics (96.08%),Operation cost about 1.6% and cost of outbound logistics 0.16%. And only 2.66% was used for the cost of support activities.

The highest cost incurred by processing farmers was the cost of purchasing coffee cherries. The cost of purchasing cherries reaches 96.1% of the whole horn skin processing cost. The transportation cost of cherries is the cost of transporting cherries to farmers. In cherry processing, farmers still use simple tools that are only able to process about 0.5 t of cherries in a week.

Table 3: Cost requirement of margamulya coffee producer cooperative based on porter's model in 1 season (1 year)

| Value chain activities | Activities of company | Total value (IDR) | Percentage |
|---|---|---|---|
| **Inbound logistics** | | | |
| Purchase cost | Cherries of members | 2,677,500,000.00 | 63.21 |
| | Cherries of non-members | 720,000,000.00 | 17.00 |
| | Grain of member farmers | 372,600,000.00 | 8.80 |
| | Cost of picking up cherries | 0 | 0.00 |
| | Bank loan interest | 30,000,000.00 | 0.71 |
| | Total Inbound logistics cost | 3,800,100,000.00 | 89.72 |
| Operation | Green bean processing cost | 132,396,428.60 | 3.13 |
| | Roasted bean processing cost | 642,857.10 | 0.02 |
| | Ground coffee processing cost | 56,250.00 | 0.001 |
| | Packaging cost | 96,862,000.00 | 2.29 |
| | Electricity cost for processing | 1,000,000.00 | 0.02 |
| | Total operation cost | 230,957,535.70 | 5.45 |
| Outbound logistics | Shipment cost | 12,740,000.00 | 0.30 |
| Marketing and sale | Promotion cost | 15,177,671.30 | 0.36 |
| Services | Cost of the facilities for visitors | 4,200,000.00 | 0.10 |
| | Total primary cost | 4,063,175,207.00 | 95.93 |
| Purchase | Office stationery | 500,000.00 | 0.01 |
| | Depreciation cost of tools, machines and building | 149,500,000.00 | 3.53 |
| Technological development | Machine purchasing cost | 0 | 0.00 |
| Human resource management | Human resource training cost | 5,000,000.00 | 0.12 |
| Infrastructure | Security cost | 18,000,000.00 | 0.42 |
| | Total supporting cost | 172,500,000.00 | 4.07 |
| | Total | 4,235,675,207.00 | 100.00 |
| | Average working capital per two weeks | 17,686,467.00 | |

The water used for horn skin processing comes from the Drinking Water Company of the village. Water used for processing must be clean water as it may affect the quality of the resulting horn skin. The tools used include buckets, strainers, tarpaulins and hand-pulpers. Some processing farmers also already have pulper machines. The incentives given by farmers to farm workers are usually in the form of extra money or cigarettes and coffee.

Farmers processing cooperative members sell their horn skins depending on the production availability. Usually in harvest season can be once a week, while in off season can be until one month.

**Cost requirement of MCPC:** MCPC does coffee processing and marketing of Java Preanger coffee. MCPC makes purchases of cherries from the member farmers and non-member farmers. MCPC buys horn skins from the members processing farmers of the cooperative. The use of cost in MCPC according to Porter's model can be seen in Table 3.

MCPC in 1 seasons/year requires cost of IDR 4,235,675,207 with a minimum of 24 times turn over to exporters thus required an average working capital of IDR17.686,467 per two weeks. At the cooperative level, the cost for primary activities reaches 95.93%, where the greatest cost requirement in the MCPC is the cost for the purchase of raw materials in the form of cherry and horn skin. The cost of purchasing raw materials (cherries of members and non members and grain of member farmers) reaches 89.72% of the overall cost.

The cost of coffee processing is calculated in the processing at one harvest season, which is usually within one year there is one harvest time between May and August. The shipping cost incurred is the shipping cost to PT. Taman Delta Indonesia for export and some local coffee companies. Farmers processing cooperative members sell their horn skins depending on the availability of horn skin they produce, usually in harvest season can be once a week. If outside the harvest season can be one month.

The packaging consists of several different types of packaging for each product. Green beans that will be sent to PT. Taman Delta Indonesia for export and some local coffee companies use packing sacks. Green bean and roasted bean for cafes packed in plastic with zip lock cover. The package used for ground coffee is aluminum foil paper, which is then inserted into a small box.

The cost of promotion is the budgeted cost by the MCPC every year, which amounts to 2.5% of the coffee processing profit. The processing cost is usually used for the payment of some cost of facilities, a promotional cost in print and electronic media, cost of financing raw material for coffee exhibitions, of coffee treats in events held together with MCPC and of e-commerce.

Human resource training cost is the cost incurred by MCPC to conduct meetings and training of members and administrators. This training is conducted twice a year routinely. Security cost is the cost paid to workers who keep factories, warehouses and offices every night.

By knowing the cost requirement for each actors, it can be prepared the amount of capital needed to open the business. Although the need for large costs but as long as the added value is greater than lending to farmers who do the processing and cooperatives, will be profitable and credit can of course be paid at once with interest[22].

## DISCUSSION

MCPC is a cooperative which give technical assistance to their members. The assistances give contribution in the form of horizontal integration and vertical integration improvement. In horizontal integration, the cooperative support farmers collectively to organized mutual cooperation in order to increase economics of scale. In vertical integration, the cooperatives provide market access to local market through reseller, gift shop and café and global market through exporter. According to the finding in China that conclude China agricultural cooperatives increase Chinese farmers' income, improve rural China economy and accelerate agro industrialization[23].

Farmer Member of MCPC produce high quality specialty Arabica coffee. The coffee has certification, therefore, the coffee has a higher price. They have an access to larger market and also input production. Cooperative has an important role in supporting the former in order to convert farmer production and adopt standard of quality[5,6]. The easiness of input factor access makes the farmer technical more efficient.

Organization, such as cooperative can reduce cost of information gathering[7]. MCPC receive information direct from the government through workshop. The government also facilitate exhibition in Indonesia and outside the country.

Furthermore, MCPC have an export market and MCPC guarantee the market to the farmer. As stated in the previous research, cooperative play an important role to access market[8].

In the other hand, cooperative from Ethiopia represent that cooperative not significantly useful because of the cooperative has a problem in buying the coffee from the member, have no training for the farmer and low managerial ability to manage the cooperative[24].

This is different from MCPC which able to pay cherry to farmers in cash, although it is quite large need of capital for this payment that reaches IDR 4, 235, 675, 207 per year. This is because the MCPC gets loan from the bank and the payment from the exporter is quite smooth, therefore cooperative turnover can be maintained two times a month. If MCPC get credit, it has credit repayments is also high. Export crops can increase production incentives and decrease total cost of coffee[25].

Farmers, processing farmers and cooperatives require the largest fees for primary activities directly related to their business, not for management strengthening or technology development activities. These supporting activities, farmers and cooperatives are still receiving assistance in the form of strengthening of institutional management capacity and technology both from government and universities.

## CONCLUSION

Raw materials for the business of MCPC supply by the farmers. These materials in the form of cherry coffee which processed into green bean, roasted beans and ground coffee. Farmers, processing farmers and cooperatives require the largest fees for primary activities directly related to their business, not for management strengthening or technology development activities.

## SIGNIFICANCE STATEMENT

This study provides knowledge to new investors about the amount of capital needed to open a coffee business, either as farmers, process farmers and agro-industries such as cooperatives

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