Triple Layer Business Model Canvas Design of Arabica Coffee Agroindustry Supply Chain in Bandung Regency

Mochamad Adieb Sultan[1], C. Furqon[1], Fanji Wijaya[1]
[1]Faculty of Economi and Business Education, Universitas Pendidikan Indonesia, Indonesia

Abstract

The coffee industry is an industry that needs to be considered because coffee is one of the commodities that have a lot of impact on the welfare of farmers. The tendency of farmer groups in the coffee industry, they still do not understand good cropping patterns, as well as the benefits obtained by farmers if they manage cropping patterns so that the production process has an impact on improving welfare. Therefore, this study aims to develop a coffee business pattern and explore the business model built using the Business Model Canvas. Descriptive analytic methods and qualitative approaches are considered in this study. Data was collected through in-depth interviews, discussions with farmer groups, and observation. SWOT analysis was used to formulate TLBMC. The results of the study revealed that the cropping pattern and business of coffee farmer groups were in a growing position. Sustainable business development is depicted in TLBMC.

Keywords: *Arabica coffee agroindustry, sustainability, supply chain, TLBMC*

INTRODUCTION

Coffee agroindustry is an agricultural commodity favoured by several provinces in Indonesia. The role of farmers as coffee producers has a significant contribution compared to traders (Yunita, Taib, & Hadiguna, 2019). This situation is interesting to observe; the fifth-largest Arabica coffee agroindustry in Indonesia is located in West Java Province, with a total production of 11,383 tons. (Directorate General of Plantations, 2018). 98.4% of the Arabica coffee agroindustry production in West Java comes from smallholder plantations. The first largest Arabica coffee producer in West Java Province is in Bandung Regency, with a production of 5,277 tons in 2017. More coffee production is produced from smallholder plantations; in 2017, the value of coffee exports increased to 467,790 tons, with the composition of Arabica coffee contributing 82.56% of the total coffee production in Indonesia.

Bandung Regency is one of the Arabica coffee-producing areas in Indonesia, with a coffee area of 10,730 hectares. Bandung Regency produced around 5,277 tons of Arabica coffee at the end of 2017 (Directorate General of Plantations, 2018). Coffee farmers are starting to realize that they cannot increase their competitive advantage alone but that the entire supply chain can increase competitiveness through the cooperation of all stakeholders in the supply chain to improve quality and reduce production costs. Therefore, the role of supply chain management (SCM) is an important

prerequisite to increase product competitiveness and also to increase profits (Nguyen, Nguyen, & Ockie J.H Bosch, 2017). A key factor in maintaining prices is maintaining high-quality coffee at all stages of the supply chain. The best way to do this is by investing in coffee seed quality, irrigation systems, cultivation techniques, and fertilizer quality for the production stage, advanced technology for the processing stage, and warehouse facilities. (Nguyen et al., 2017).

Currently, many conventional farmers are vulnerable to changes in production systems that cause damage to natural resources, especially in the Bandung Regency area. Coffee supply chains present problems such as low non-economic productivity and profitability, weak technology transfer, and limited value addition; these are the disadvantages associated with the unsustainable coffee sector (Contreras-medina, Contreras-medina, Pardo-nuñez, Olvera-vargas, & Rodriguez-peralta, 2020). This condition must be corrected immediately by adopting technology. Technology adoption depends on several factors such as profit, land area, household status, distance to the nearest market, cooperative membership, and so on.

Sustainable supply chain management is the management of the flow of material, information, and capital as well as cooperation between institutions along the supply chain (Seuring & Muller, 2008). The supply chain greatly determines the success rate of distribution of an agricultural commodity. The supply chain is a series of productive activities from upstream to downstream that are interconnected between activities and form a value chain in the industry. The supply chain consists of several elements and parties involved, either directly or indirectly (Rirahman, 2019). To develop the business for the coffee farmer community, We use the triple-layered business model canvas design to increase business on a wider scale (Furqon, Sultan, & Wijaya, 2019). This study aims to identify and analyze supply chain mechanisms, design strategies to improve performance and supply chain sustainability in the Arabica coffee agroindustry in Bandung Regency.

LITERATURE REVIEW

This study is to look over business processes and explore various problems that happened in Arabica coffee farmer groups in Bandung Regency. The author tries to improve supply chain management so that it is sustainable by using the triple-layered Business Model Canvas (TLBMC) both theoretically and practically presented from various sources. Source for the best results. The supply chain activities of the Arabica coffee agroindustry involve several stakeholders, namely farmers, collectors, processors, and distribution to consumers. According to (Chopra dan Meindl, 2013), Supply chain management can be seen as a cycle that can be divided into three basic forms, namely internal, external, and overall supply chains. An internal supply chain is the integrated flow of materials and information within a business unit from suppliers to consumers and is sometimes called business logistics. The external supply chain is an integrated flow of materials and information within business units that traverses between direct suppliers and customers, while the overall supply chain is an integrated flow of materials and information within business units that traverses simultaneously between direct suppliers and consumers. The supply chain requires supply chain performance measurement to determine the current performance position, determine the strategies that need to be established in improving performance and improve coordination between supply chain actors. (Asrol et al., 2017).

Research on sustainable business models with the Triple Layer Business Model Canvas (TLBMC) approach has been relatively new to develop since 2016 and was popularized by (Joyce & Paquin, 2016). The TLBMC concept was chosen because it has advantages such as providing a global picture of a business model in a relatively simple visual. In addition, TLBMC can be used to support sustainability-oriented business model innovation. This is because TLBMC puts forward a sustainability approach, especially social and ecological aspects. This can broaden the perspective, especially regarding the management of stakeholder expectations. TLBMC is also seen as in line with the global trend of campaigning for the issue of environmental conservation and the importance of the social impact of a business.

This study aims to (1) identify external and internal factors that affect business sustainability; (2) Formulate alternative business development strategies for Arabica coffee farmers in Bandung Regency in running a more sustainable business in the future. The scope of the research is focused on studying the strategic planning of the Arabica Coffee Farmer Group to anticipate changes in customer character and business competition, especially in dealing with the new normal situation due to the COVID19 pandemic. The results of this study are the formulation of the company's business strategy using a sustainable business model approach.

RESEARCH METHOD

This research was conducted on Arabica coffee farmers in Bandung Regency for 1 year, from July to August 2021, with stages including data collection, procedures, and data processing analysis. The steps of procedure and analysis of data processing consist of identification of supply chain of Arabica coffee agroindustry, analysis of the added value of sustainable supply chain in Arabica coffee agroindustry.

Primary data collection in this study was carried out by survey methods and direct interviews with experts. The selected experts are experts who are considered to understand and understand coffee cultivation, processing, and marketing, as well as reasoning power that leads to the main questions. The selected sample is a respondent who represents the population so that the results of testing the data apply to all members of the population. This is done to streamline costs, time, and availability of respondents to receive interview referrals.

Supply chain performance measurement aims to support goal design, work evaluation, and determine future steps at the strategic, tactical, and operational levels (Van de Vorst, 2006). The Arabica coffee agroindustry supply chain was identified by a descriptive-qualitative method supported by the opinions of academics and practitioners, field observations, and literature studies. The Arabica coffee agroindustry supply chain was identified descriptively adapted from the triple layer business model canvas method.

To make the Triple-Layered Business Model Canvas (TLBMC) design, The first step is to determine strategic steps using a SWOT analysis that compares internal conditions and external conditions. This analysis shows the internal conditions and opportunities in the external environment. Osterwalder and Pignur (2017) explain that to develop a business canvas model, we need to integrate the environmental and social impacts into the business model, where additional layers are placed parallel to the economic layers. TLBMC unites business model innovation (Spieth, Schneckenberg, & Ricart, 2014) and development of sustainable business models (Boons & Lüdeke-freund, 2013).

FINDINGS AND DISCUSSION

The supply chain is a series of productive activities from upstream to downstream that are interconnected between activities and form a value chain in the industry. The supply chain consists of several elements and parties involved, either directly or indirectly. Supply chain actors in Arabica coffee agroindustry activities in Bandung Regency include coffee farmers, coffee fruit collectors, coffee agroindustry players, ground coffee traders, and consumers.

Data obtained through observation, in-depth interviews, Focus Group Discussions, and various secondary data sources will later be included in the SWOT analysis. The SWOT analysis shows that the business condition is in a growing position, so the right strategy for this condition is the Harvest Strategy. From the results of the SWOT analysis, researchers compiled a TLBMC that was oriented not only to economic aspects but to social and environmental aspects, as shown in Figure 1, Figure 2, and Figure 3.
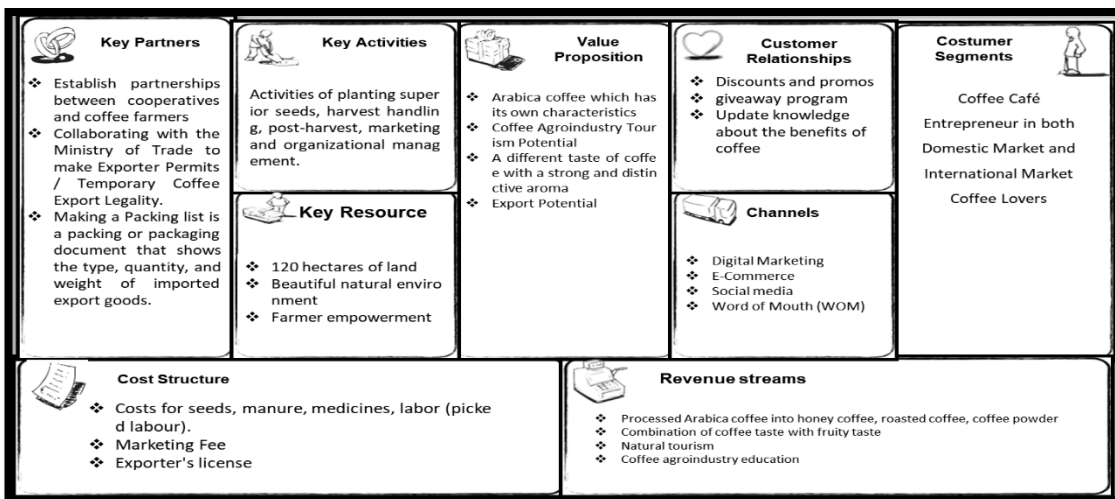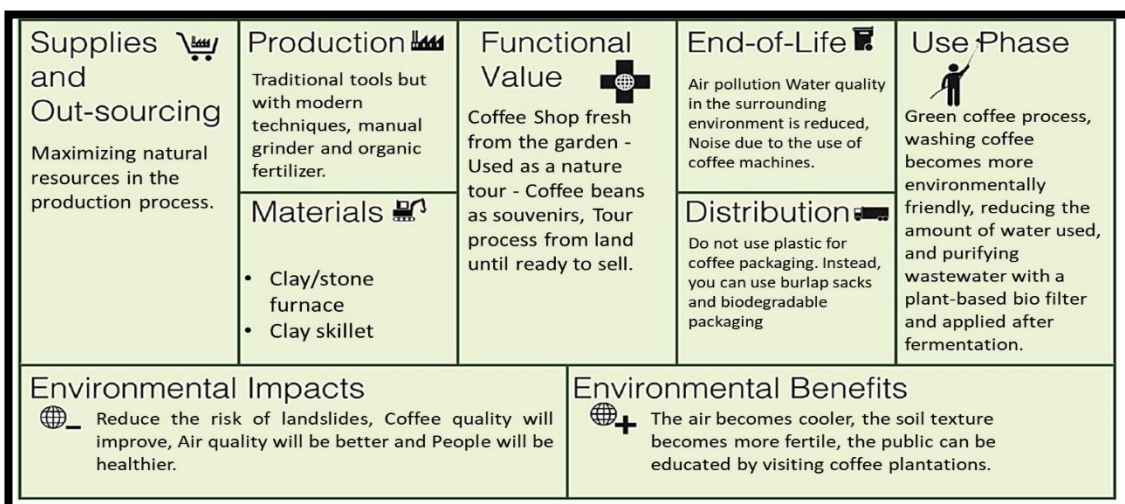

Figure 1. Business Model Canvas

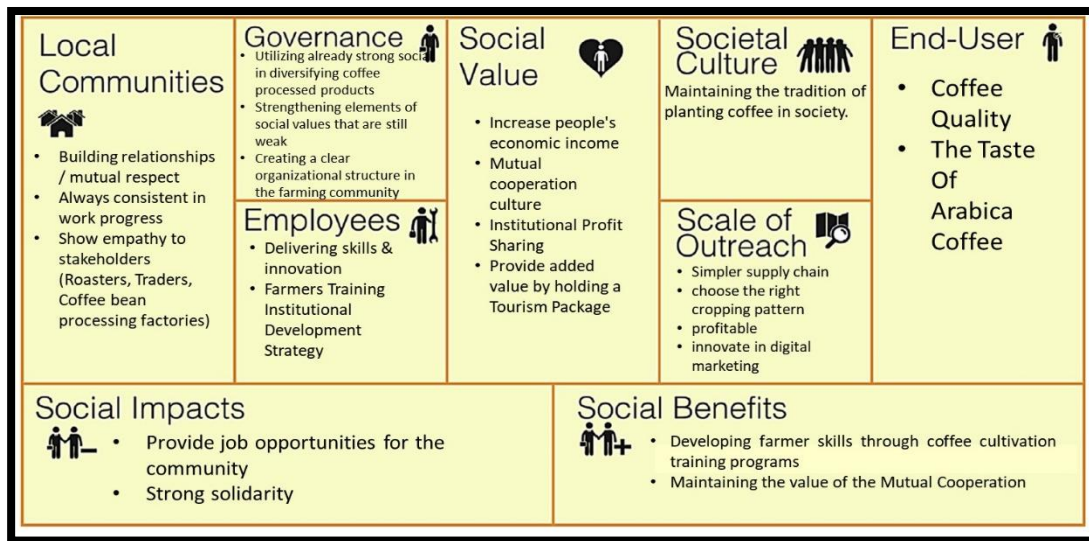**Figure 2.** Canvas Based Environment

Figure 3. Social Based Canvas

CONCLUSION

The coffee industry is an industry that needs to be considered for its sustainability because coffee is one of the superior commodities that can contribute to the welfare of farmers. The tendency of farmer groups in the coffee industry is that they still do not understand good cropping patterns, as well as the benefits obtained by farmers when managing cropping patterns until the production process has an impact on increasing their welfare. Therefore, the purpose of this study is to evaluate the pattern of the coffee business as well as to explore the innovation of a sustainability-oriented business model using the Three-Layered Business Model Canvas. The results of the study revealed that the cropping pattern and business of coffee farmer groups were in a growing position. Sustainable business development is reflected in TLBMC. Farmer empowerment is a process of changing mindsets by preparing Human Resources (farmers) to become professionals, both in technical cultivation (production), harvest handling, post-harvest marketing, and organizational management. The design of environmental and social-based business models in creating a sustainable supply chain of Arabica coffee agroindustry in Bandung Regency is expected to improve business performance on a wider scale.

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