

Sustainable Business Development in Fish Cage Groups Based on Economic, Social, and Environmental

Fanji Wijaya¹, Agus Teny¹

¹Management Study Program, University of Indonesia Membangun, Indonesia

Abstract

A tool that aids companies in exploring new ideas in sustainability-focused business models is the Triple Layer Business Model Canvas (TLBMC). By including an environmental dimension based on a life cycle perspective and a social dimension based on a stakeholder perspective, it increases the canvas's business dimension. We can comprehend how a corporation creates economic, environmental, and social values by taking into account all three aspects of its business model. This study uses a qualitative descriptive method to obtain important information in making business models. SWOT analysis is used to show both internal and external conditions of the Fish Cage Community. The TLBMC enables us to comprehend how OSS uses aspects of stakeholder management and life cycle analysis to develop several types of points linked to fish farmers. In spite of being located in an urban setting, fish farmers needed to convert rivers into productive area, and this study identified research shortages in this area.

Keywords: *Business Development; Triple Layer Business Model; Fish Cage Group*



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INTRODUCTION

The development of aquaculture based on superior products and local wisdom products is a flagship program implemented by the Ministry of Fisheries and Fisheries. Fish is one of the local entageld with local wisdom promoted by the KKP Center for River Freshwater Aquaculture which used for fish cultivation by the community (Directorate General of Aquaculture, 2021). The first step to develop fishery management is to determine which fish products have higher quality in an area based on the concept of capture efficiency to gain a comparative and competitive advantage in the globalization of trade (Irnawati, Simbolon, Wiryawan, Murdiyanto, & Nurani, 2011). The steps towards efficiency can be taken by determining fish products that have a comparative advantage, both in terms of supply and demand.

The agricultural sector is the basis of the people's economy in rural areas and must play its role in the food consumption needs of the community as a supplier of raw materials for the processing industry (Rachmilia, 2021). To achieve development goals, it is necessary to develop fishery business, one of which is through aquaculture which has prospects as a source of income and can meet the increasing demand for fisheries. in line with the human population in Indonesia.

Goldfish or carp is one of the freshwater products that is developing very fast and popular with the public because of its delicious and savory meat taste and high protein content. Goldfish is one of the most widely cultivated products by the community. The development of various

breeding and rearing technologies has been carried out and applied both intensively and intensively (Limbong & Limbong, 2018).

Fish cultivation aims to get better or more fish production than the fish that live in the wild (Yohanna Theresia Venty Fau & Ziraluo, 2022). To maintain the pond checking the fish pond must be done intensively in fish cultivation. A fish pond environment that is not good causes goldfish to get the disease dan to have a low chance of survival (Maulana & Julianto, 2017).

In fish cultivation, several useful ways are needed to obtain good breeding results from using cages. The strategy in goldfish cultivation is quite particular for people who raise fish daily. The strategy implemented includes the objectives of activities, the activities itself, and support for fish farming activities. According to Majid (2015) strategy is a planned and deliberate scheme to carry out activities or actions. The development of the fishery sector is part of the economic development that has been achieved so far, experiencing ups and downs, at one point of time the fishery sector is used as a mainstay in the community, and government revenues, but at other times less attention is paid (Siahaan & Antonius KAP Simbolon, 2019).

One of the problems faced in cultivation especially in urban areas, is the availability of land. water quality is one of the problems that happen in fish cultivation. Beacause the water quality does not meet the standard of aquaculture and it can have a negative impact on fish farmers (Darwis, Mudeng, & N. J. Londong, 2019). The city of Bandung is a densely populated agglomeration that must be supported by public awareness to develop social, economic and cultural qualities. There is a group of residents who use the Cikatak river land in Sukajadi sub-district to cultivate goldfish (*Cyprinus carpio* L), the group is called the Barokah Cage Group. Based on the analysis of the situation and the results of the discussions of the Fish Cage Group community in the field, that the main problems experienced by the community as follows: Lack of socialization about Goldfish Cultivation, Feed prices are too high, Low business capital for fish farmers.

Strategy formulation must consider by observing first and then formulating what will later become a competitive advantage (Wijaya & Adib, 2019). Empirical evidence regarding strategy formulation in both developed and developing countries shows that strategy formulation leads to increased profits and superior organizational performance. However, despite the abundance of empirical evidence showing the importance of strategy in organizations, strategists do not consider the alternatives that are considered feasible and from which organizations can benefit from implementation, because there can also be many ways to take action. Therefore, one part of the big alternative strategies was developed, examined, prioritized and selected (Fred R & David, 2017).

In order to measure indicators of internal and external elements that are present in the fishing sector, the goal of this research was designed using a TLBMC framework along with a SWOT analysis. Each component of the business's future vision has been taken into consideration in this research. Pignur and Osterwalder (2017) create a business model canvas explicitly by include environmental and social implications, with new layers positioned parallel to the economic ones.

The objective of this research is to create a business model that is sustainable based not only on economic aspects but also on environmental and social aspects. With these three aspects in a business model, it is hoped that the fish cage group can build their business sustainably.

LITERATURE REVIEW

To assist innovative and sustainable businesses driven by change as a means of addressing the difficulties we face today, TLBMC creates a bridge between business model innovation (Spieth, Schneckenberg, & Ricart, 2014) and sustainable business model development (Boons & Lüdeke-freund, 2013). In order to meet the difficulties, we confront today, sustainable business supports and focuses innovative enterprises on competitive sustainability change (Shrivastava & Statler, 2012).

By imaginatively rethinking present business models and the innovation potential, TLBMC can assist in overcoming obstacles to sustainability-oriented change in organizations (Lozano, 2013). For many businesses, sustainability is the driving force behind creative innovation, and moving toward sustainability necessitates changing current business models to produce "new ways of providing and extracting value, this is what will transform the competition."

In order to run a stable and sustainable business, it is required to explain the growth of the fishing industry through the use of the three layers of the canvas business model concept. Analyzing the variables that influence the fishing industry is the first step in concept development. The Triple Layer Business Model Canvas (TLBMC), which is based on the economics, is commonly referred to as the Business Model Canvas (BMC).

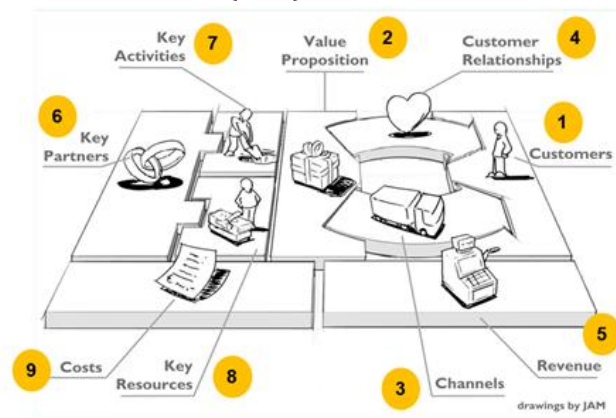


Figure 1. Business Model Canvas
Source: Osterwalder & Pigneur, 2017

The Business Model Canvas is divided into nine main sections, namely:

(1) Customer segment is the market which consists of certain kinds of buyers who buy a product according to their wants, resources, location, and buying habits. **(2) Value Propositions** are added value provided to customers (value propositions) consisting of products and services that can add added value to a specific segmentation. **(3) Channels** to connect with customers. Communication channels, distribution, and sales networks or sales are one of the company's efforts to communicate with customers. **(4) Customer Relationship** is the type of relationship you want to establish with customers from a specific market segment. **(5) Revenue Stream** is the income stream received by the company from each market segment. Revenue streams are income used in terms of the received money by the company from its customers. **(6) Key Partnership** is the business partner, such as a supplier, who enables the network of suppliers and partners that supports a business model to function. **(7) Key Activities** are the main activities that need to be carried out by an organization or company to provide added value properly. **(8) Key Resources**

are the primary resources needed by the company so that the business model can run. **(9) The cost structure** is the cost components used so that the organization or company can run according to the business model.

Environment Based Development TLBMC Model

The TLBMC environmental layer is a life cycle perspective of environmental impact. The primary purpose of the TLBMC environmental layer is to assess how the organization generates more environmental benefits than environmental impacts. Here we describe the components of the environment canvas layer:

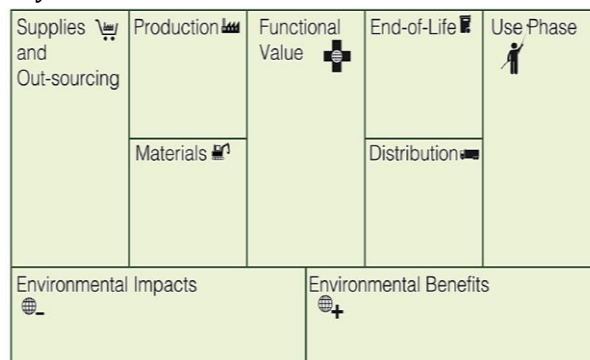


Figure 2. The Environmental Lifecycle Layer of the Business Model Canvas

Source: Alexandre Joyce & Raymond L. Paquin, 2016

(1) Functional value refers to the focus of study on an organization's output, such as a service or product. **(2) Material** is the primary resource. Material refers to the bio-physical stock used to create functional value. **(3) Production** is the term used to describe the part of the environmental layer's main activity component that extends into production and encapsulates the steps a company takes to create value. **(4)** Everything that is required for functional value but is not regarded as "central" to the organization is referred to as **Supplies and Outsourcing**. **(5)** In the case of service providers or product manufacturers, **Distribution** entails the transportation of goods. **(6)** Maintenance and repair of relevant products, as well as some consideration of the use of material resources and the client's energy needs, are all part of the **Use Phase**. **(7) End-of-life** situations, which occur when a customer decides to stop using a product's functional value, frequently include the challenge of reusing resources through remanufacturing, repurposing, recycling, disassembly, burning, or disposal of a product. **(8) Environmental Impacts** component addresses the ecological costs of an organization's actions. **(9) Environmental Benefits** extend the concept of value creation beyond financial value.

Organizations can create more sustainable business models by examining environmental implications using a life cycle approach.

TLBMC Model of Social-Based Development

This layer describes and analyses the organization's social impact. This layer offers a deeper comprehension of the organization's social effect and insights for investigating new business models and strategies to boost its capacity for social value generation. Here are the component of social based development model:



Figure 3. The Social Layer of the Business Model Canvas
 Source: Alexandre Joyce & Raymond L. Paquin, 2016

(1) Aspects of a company's goal that put a strong emphasis on generating advantages for stakeholders and the larger community are referred to as **Social Value**. (2) **Employee** provides way to think on the importance of workers as key stakeholders in the company. (3) **Governance** encompasses organizational structure and policies in decision-making. (4) **Communities** define the social linkages that exist between local communities and suppliers. As the three layers of TBLMC are aligned, these two stakeholders join together as a community. (5) **Societal Culture** identifies a possible organization's influence on society at large. (6) **The scale of outreach** outlines the range and depth of the relationships that the organization develops with its stakeholders over time as a result of its efforts. (7) **End users** are individuals who "consume" the value offer. The user's quality of life and how well the value proposition satisfies their demands are the focus of this component. (8) **Social impacts** are connected to an organization's social expenses. The financial costs of the economic layer and the biophysical effects of the environmental layer are extended and supplemented by social costs. (9) **Social benefits** are features of society that add worth to organizational efforts. This part specifically takes the social advantages of organizational acts into account.

RESEARCH METHOD

In order to run a sustainable business, it is important to explain how the Cage Fish Farmer Group has evolved through the use of the three layers of the canvas business model. Analyzing the variables that influence fish farming is the initial step in concept creation. Figure 4 displays the conceptual foundation for this study.

In this descriptive study, the researcher serves as the main tool and examines items in their original state, which is founded on the post-positivist philosophy. Purposive and snowball sampling were used to get data from the data sources. Triangulation is one of the study methods used. The results and data analysis demonstrate the significance of generalization.

The findings of this study, among other things, include detailed accounts of in-depth interviews with the research subjects examined in order to provide a clear picture of the use of business models in the construction of a grouping of the data gathered for this study from two sources. Primary data are gathered on-site by observation, documentation, or informant interviews.

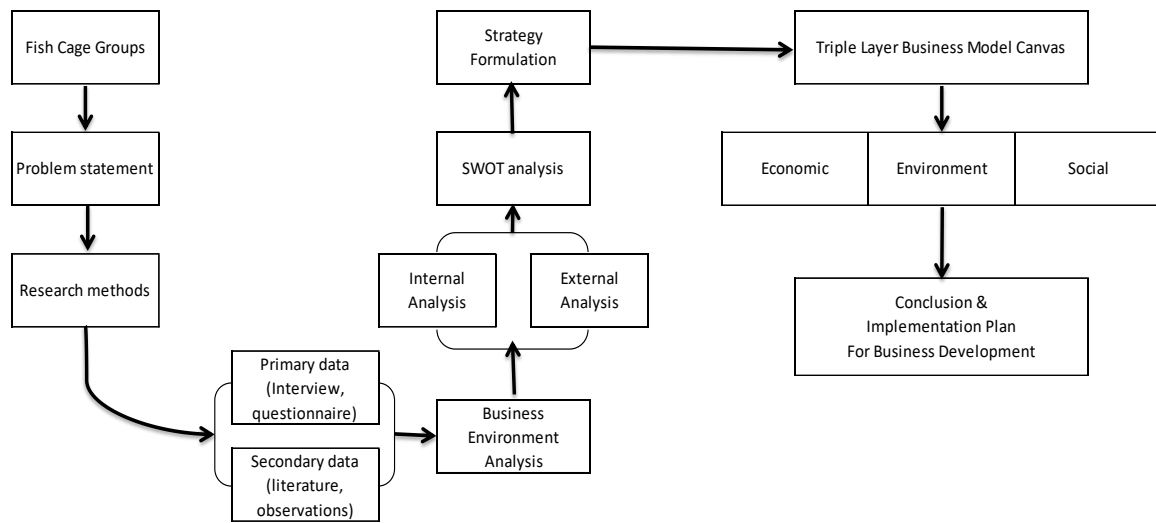


Figure 4. Research conceptual framework

In-depth interviews, documentation, and observational methods were used to obtain data for this research. Observation for observing the physical condition of a professional business environment. This study applied SWOT analysis methodologies to clearly identify the strengths of the Fish Cage Group in order to support the strong observational work that was done. SWOT analysis will identify the strengths that can be exploited to advance business, the weaknesses that cannot, as well as the opportunity and threat elements related to business advancement.

The three-layer business model canvas will be created using the results of the SWOT analysis, and they will also be used to choose the best strategy depending on the business circumstances of the fish farmer group under research. To examine numerous facts and figures on the fish farmer group's performance and future business development objectives, in-depth interview techniques are used. Additionally, documentation methods are utilized to support the activities of farmer groups by supplementing the data discovered through observations and in-depth interviews in the form of activity data.

FINDINGS AND DISCUSSION

According to the results of the SWOT analysis, the Fish Cage Group is in a position of market penetration and product development with the consolidation of the aim of being relatively more defensive, notably preventing loss of sales and loss of profit. Through internal and external development, through acquisitions or joint ventures with other businesses in the same industry, the Cage Fish Group can grow its markets, manufacturing capabilities, and technology.

Using three business model layers—the Economic, Social, and Environmental layers—TLBMC is a straightforward tool to help the development of innovative, creative, and sustainable business models. The following are the outcomes from an economic perspective because it is not only focused on the economic component but also the social and environmental aspects:

1. Customer Segment

The target customers in the cage fish group are fish traders, restaurants/restaurants, fishing pond providers, entrepreneurs who have fish ponds at home, and hotels/cafes as entertainment.

2. Value Proposition

The value proposition in the cage group is quality fresh goldfish because it is cultivated in a fast-current river, dominant color lights / orange color, large goldfish size.

3. Channel

The channels in the cage group are direct sales, direct selling, and social media.

4. Customer Relationship

Customer relationship the cage group is a customer service or social media operator focus on how to provide a good and friendly service.

5. Revenue Stream

The revenue stream in the cage group is direct sales of goldfish, educational tours, and Adsense youtube.

6. Key Resources

This section discusses some of the resources that are important to utilize for a business model to work. The key resources in the cage group are intellectual resources, reliable human resources, financial resources, physical resources.

7. Key Activities

The key activities in the cage group are Cleaning rivers and cages, the process of producing or purchasing fish seedlings, fish feed, and marketing.

8. Key Partnership

The key partnerships in the cage group are fish feed shop, plastic shop/fish packaging, oxygen gas shop, and fish spawn breeder.

9. Cost Structure

The cost structure in the cage group is production costs, promotion costs, employee costs, and equipment maintenance costs.

The results of constructing the Triple Layer Business Model Canvas from a social perspective are as follows:

1. Social Value

Providing education on the benefits of consuming fish, making a good fish farming training, increasing the economic income of the community, improving the culture of mutual cooperation, productive business groups.

2. Employee

Improve the skills of fish farmers & always innovating on goldfish farming and goldfish processing.

3. Governance

Utilize the already strong social capital (culture of cooperation / cooperation), and making a clear organizational structure in the Fish Cage Group.

4. Community
Build relationships / mutual respect, always be consistent in the progress of work, and aim for a sense of empathy to stakeholders (Fish Customers, Fish Feed Stores).
5. Social Culture
Making the Cikatak River a tourist attraction with the quality of original natural resources such as clear water, no waste, and a group culture that works together.
6. Scale of Outreach
Create innovations in digital marketing and play an active role in social media.
7. End-users
The lovers of orange jumbo goldfish, decoration for in the home pond, hotel pond or fishing fish pond.
8. Social Impacts
Lack of relationships, Lack of communication relationships, and not maintaining a culture of mutual aid (*Gotong Royong*).
9. Social Benefits
Develop farmers' expertise through goldfish farming training programs, build relationships with stakeholders, hire the unemployed, and improve communication between communities.

The results of constructing the Triple Layer Business Model Canvas from an environmental perspective are as follows:

1. Functional Value
Optimizing river into productive places, cleaning rivers from garbage, cultivating goldfish of high quality so the fish have a high chance of living.
2. Production
Processing fish to be environmentally friendly during the production process. Fish waste treatment is not thrown into the river but planted to become a natural fertilizer.
3. Supplies and Out-sourcing
Using good fish breeds, and maximizing natural resources in the production process.
4. Materials
Using old bamboo wood in the raw materials for making cages, and repairing river paths that are choked with garbage.
5. End of life
The low turbid water quality causes the fish to have a low chance of living, and a lot of garbage is scattered in the river.
6. Use Phase
Processing fish properly, the process of fish waste is not dumped into the river but planted to become natural fertilizer.
7. Distribution
The stunning method uses low temperatures. This method is done by cooling the water temperature of the faint the fish. Then, to keep the temperature low, a styrofoam box container filled with ice was used. Live goldfish that were stunned at low temperature and stored in cold media without water were able to survive for 6-7 hours. A good dose of clove oil for stunning fish ranges from 1-5 ml/10 liters of water.

8. Environmental Impact

Environmental pollution caused by various activities around the waters as well as from the cultivation business itself.

9. Environmental Benefits

The development of aquaculture can reduce poverty, increase income and absorb labor.

This research confirms that the Triple Layer Business Model Canvas is the best model for sustainable company growth. This business course explicitly considers social and environmental factors in addition to economic and commercial ones. This study is consistent with that on the TLMBC business model (Joyce & Paquin, 2016). According to their research result, TLBMC is a business model that encourages entrepreneurs to grow their companies in a sustainable way. According to additional research, TLBMC offers a thorough perspective on businesspeople so that business development will be sustainable (Pardalis, Mahapatra, K., & Mainali, 2020). According to a different study, TLBMC outlined specific procedures for entrepreneurs to do in order to grow their companies sustainably (Anggraeni, N. N. & Wibowo, 2021).

CONCLUSION

The Fish Cage Group business strategy to create sustainable development based on the economy, social system, and environment is studied in the most comprehensive way possible according to this research. We have opinions on the concept's economic, environmental, and social effects and have looked at its sustainability orientation using the TLBMC. By doing so, we become aware of how the values supplied across the three layers connect with one another and see any shortcomings that need to be filled in order for our concepts to be stronger and fulfill their promises in the best way possible.

LIMITATION & FURTHER RESEARCH

The concept or methodology flaws that affected or influenced how the results were interpreted define the research's limitations. This study solely considers fish farming in urban areas, indicating the necessity for more investigation of TLBMC before it may be used in other cultivation environments. The number of knowledge gaps that follow from our findings should be suggested by other study, which may also be used to expand upon and further test the research.

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