



Business model canvas analysis of organic fertilizer “Goat Waste”

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Abstract - This study aims to determine the use of organic fertilizer in adding soil nutrients and analyze the implementation of BMC in the organic fertilizer business. This study was carried out directly at the production location using observation and interview methods. The results study show that organic fertilizer is produced using goat waste as raw material. Goat waste is processed using certain techniques to produce organic fertilizer, easy to use, and applicable to any plants. Organic fertilizer continues to be produced for use on one’s own land as a substitute for synthetic chemical fertilizer. The result study also show that in soil given organic fertilizer the plants grow well. The result study also show that in the organic fertilizer business the company has used Business Model Canvas (BMC) which includes : Value proposition, Key partners, Key activities, Key Resources, Customer Relationships, Customer Segments, Channels, Cost Structure and Revenue Streams. The use of BMC has an influence on the sustainability of this business.

Keywords: benefit, business model canvas, organic fertilizer

1 Introduction

The need for food, clothing, shelter, schools, social activities and so on continues to increase. This is what drives changes in human efforts to meet needs. Including the agricultural system has encouraged farmers to innovate to increase agricultural production.

Chemical fertilizers have been used to increase agricultural production. Since its introduction in 1984, chemical fertilizers have become increasingly popular because chemical fertilizers contribute to fertilizing plants. Plants become green, dense and often chemical fertilizers are effective in accelerating growth and fruiting.

Soil damage due to the use of synthetic chemical fertilizers is common information. Many soil are no longer able to produce optimally, characterized by slow growing plants, inappropriate leaf color and plants that are susceptible to disease. Plants can only grow if the soil is given chemical fertilizer. The consequences of using chemical fertilizers are decreased soil productivity, increased chemical residues in the soil and pollution of plant life. [4].

Organic fertilizer is a solution for farmers. Organic fertilizer comes from goat, cow, chicken, leaves and fruit waste. Organic fertilizer has an influence in improving the chemical properties of the soil because organic fertilizer can fulfill the required soil nutrients such as nitrogen, phosphorus, potassium and other nutrients. Organic Fertilizer is useful for soil fertility [3]

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Organic fertilizer is fertilizer that existed before people knew about chemical fertilizers. The quality of organic fertilizer is good but the effect on soil and plants is generally slow. In practice, it takes about 1 year for organic fertilizer to have an impact on soil and plant fertility. So it is important to improve the quality of organic fertilizer so that farmers can increase agricultural production.

Organic fertilizer needs to be prepared so that it becomes fertilizer that is ready to be used anytime, anywhere, and by anyone. Therefore, the sustainability of managing the organic fertilizer business that consumers are interested in requires quality management and risk [1]. The business development planning method that is currently widely used is using BMC. With this BMC method, business owners can find out the important parts of the business, so they can provide an overview of value, products, infrastructure, consumers and finances [2].

2 Methodology

This study was carried out in October 2023, with a location at Pondok Agro, Solokuro village, Solokuro district, Lamongan Regency, East java. This place is not far from residential areas, approximately 100 meters west of the housing complex. Road access stone paving that tcan be passed by 2-wheeled and 4-wheeled vehicles. In this place there is electricity and water is also available. In this place there are horticultural plants, organic fertilizer production and planting media production.

The study was carried out using the observation method, namely by directly observaing production activities starting from procurement of raw materials, drying, enrichment, fermentation and packaging. The study was also carried out by interviewing business owners to deepen information related to organic fertilizer production and BMC analysis in business sustainability.

3 Results

From the results of interviews with Pondok Agro leaders, information on the organic fertilizer business as described in the BMC was obtained as seen in table 1.

Table 1. Organic fertilizer business information

Key Partners Materials Suppliers Resellers Farmers Agricultural Shop Agricultural Exstension	Key Activities Procurement of raw materials production supply chan	Value Proposition Organic Easy to Use Applicable to any plants	Customer Relationship Direct Relationship	Customer Segment Gardening hobbyist Farmers Local community
	Key Resources Materisls to produce good organic fertilizer		Channels Farmer Group / Community Media social	
Cost Structure Operational cost Transportation Raw Materials		Revenue Streams Product Selling		

From observation at the business location, information was obtained that this organic fertilizer uses goat waste as raw material. This goat waste is obtained from goat farmers those around the place of business. The goat waste is then processed in a certain way so that it becomes organic fertilizer that is ready to be used. Observation results also show that this organic fertilizer is used continuously on his own land and that of several neighbors. It was also seen that people who needed organic fertilizer came directly to the production location and saw various plants that had used organic fertilizer. Besides the business of making organic fertilizer, Pondok Agro also produces POC and planting media. This planting medium uses a mixture of soil, coconut fiber, huks and roasted huks. This planting medium is packaged in transparent plastic measuring 25 x 40 centimeters.

The leaders of Pondok Agro explained that there are four parts to the organic fertilizer business, namely : value, product creation, outbound relationship, and finance. wich are then explained in theory Business Model Canvas (BMC) (Osterwalder & Pigneur, 2010), wich includes : Value Proposition, Key Partners, Key Activities, key Resources, Customer Relationships, Channels, Customer Segments, Cost Structure, dan Revenue Streams.

Value Proposion, (1) Organic, namely comes from goat waste. (2) Easy to use, because it is in small granules so it is easy to sow or dig. (3) Applicable to any plants, including horticultural crops, main food crops, plantation crops, and ornamental plants.

Key Partners, (1) Material supplier, which comes from goat farmers around the business location. (2) Reseller, is a person who deliberately transfer the benefit of organic fertilizer to other parties by making a profit. (3) Agricultural Shop, namely agricultural shop that collaborates with Pondok Agro to sell organic fertilizer. (4) Agricultural extention, namely people who have a very good role in disseminating information on organic farming system.

Key Activities, (1) Procurement of raw materials, taken from goat farm around the production place. (2) Production, the production process begins with drying, enrichment, fermentation, weighing, and packaging. (3) Supply chain, namely relationship with raw material supliers.

Key Resource, Materials to product good organic fertilizers. raw materials are taken from goat waste that has been in the sheller for 6 months or more, or if it has not yet reached 6 months then it will be stored first for 6 moths or more.

Customer Relationships, Direct Relationship, The public can see directly the location of organic fertilizer use which is located at "Pondok Agro"

Channels, (1) Agriclultural Shop, namely shops selling medicines and agricultural fertilizers (2) Farmers groups / communities, namely flower sellers on a small and large scale (3) social media, such as WhatsApp and Instagram.

Customers Segments, (1) Gardening Hobbyist, namely lovers of ornamental plants and horticulture. (2) Farmers Local Community, namely farmers around the Solokuro district.

Cost Structure, (1) operational cost, (2) Transportation, (3) Raw material. In simple terms, the total costs for 1 production can be seen in table 2.

Table 2. total production cost

Number	Description	Unit	Many	Unit cost	Amount
1	Raw material cost	Kg	200	500	100,000
2	Direct labor cost	Person	1	100,000	100,000
3	Packaging cost	Grain	33	1,500	49,500
4	Consumption cost	Person	1	20,000	20,000
	Total variable cost				269,500

Revenue Streams, obtained from the sale of fertilizer. For 1 production, it produces 198 kg or 33 bags measuring 6 kg, it cost IDR 269,500. If the selling price is IDR 20,000/bag then the sales proceeds are $33 \times \text{IDR } 20,000 = \text{IDR } 660,000$. So the profit for 1 production is IDR 390,500. Bussiness feasibility analysis Ratio = $B/C = 390,500/269,500 = 1.45$ (profitable).

4 Discussion

The benefits and advantages of this organic fertilizer can be seen in the soil and plants around Pondok Agro. The soil looks crumbly and the plants grow well without using chemical fertilizers. This organic fertilizer does not undergo laboratory testing so it is not known exactly what percentage of nutrients it contains, including nitrogen, phosphorus and potassium. However, based on experience, the leadership of Pondok Agro is able to explain when it is time to use organic fertilizer as basic fertilizer and when it is time to use organic fertilizer as supplementary fertilizer.

For Key Partners, it is good because the location around Pondok Agro is a goat farming location, so it has an impact on the availability of goat waste stock which in turn streamlines the production process. Likewise, the production results can be sold because there are already resellers and agricultural shops who are ready to collaborate. Meanwhile, agricultural extension workers do not yet have an optimal role regarding the sustainability of this organic fertilizer.

In Key Activities, relationships with raw material suppliers have been well established so that the need for goat waste can be met and the production process can run smoothly. The obstacle in production activities is that we don't use a drying machine. Drying goat waste goat waste is still done manually under sunlight so the length of sunlight has a big influence on the drying speed. The second obstacle in production activities is that copper machines are not yet used. A coper machine is used to crush goat waste. If the company uses a coper machine, production speed can be increased.

In Channels, this channel already exists but is not functioning optimally. Sales in farm shops remain low. Agricultural shops are not yet equipped with sufficient promotional media. Sales at flower shops are also not as busy as at production sites. Flower shops are also not equipped with sufficient promotional media. The use of social media has begun to function. In the future, social media can be used to provide education to the public about the use of organic fertilizer.

In the Customers Segments, the main target consumers are garden hobbyists and local farmers. In reality there are already organic fertilizer users but not all local farmers use organic fertilizer.

In the Cost Structure, you can see the cost for 1 production is 269,500. With description : Raw material cost, direct labor cost, packaging cost, and consumption cost.

In Revenue Stream, from the sales results it can be seen that there is a profit of 390,500 for 1 production. with a Ratio of 1.45 (profitable business) but still thin.

In general, based on observations and interviews, organic fertilizer from goat waste has an influence on providing soil nutrient requirements which in turn increases plant fertility. This organic fertilizer can be used as an example by farmers to increase agricultural production without using synthetic chemical fertilizers.

In terms of output, the benefits of this organic fertilizer cannot yet be felt by the desired target market because the company's channels are not yet fully functional. For today's times, what is no less interesting is marketing via social media. Marketing via social media has the advantages of low cost, quick reach of targets and so on.

In terms of costs, an analysis has been carried out from production costs to sales. and from this organic fertilizer business, Pondok Agro makes a profit with a ratio of 1.45. A profit that is quite worthy of being maintained and increased.

5 Conclusions

Organic fertilizer made from goat waste and processed organically. The organic content in Organic fertilizer contributes to environmental improvement. As it offers not only the goodness of its produced (organic, easy to use, applicable to any plants) but also the contribution to the environment, business-wise, it also has a chance of increasing value, which leads to improving community welfare. A relationship with related communities, such as farmer group and gardening hobbyists, should be maintained to keep the business revenue, in the future, this is expected to support the business sustainability of Organic fertilizer.

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