SOYBEAN DEVELOPMENT STRATEGY IN KASIMPA JAYA VILLAGE SOUTH TIWORO DISTRICT WEST MUNA REGENCY

Suyanti Indramayu1), Rosmawaty1), La Ode Kasno Arief1)

1Department of Agribusiness Faculty of Agriculture Universitas Halu Oleo Kendari 93232 Indonesia

*Corresponding author: suyantiindramayu@gmail.com

To cite this article:

Received: July 20, 2023; Accepted: September 20, 2023; Published: October 01, 2023

ABSTRACT

This study aims to determine soybean production and productivity in Kasimpa Jaya Village, South Tiworo District, West Muna Regency, and to find out the strategies prioritized in the development of soybean crops in Kasimpa Jaya Village, South Tiworo District, West Muna Regency. Data analysis used to determine the amount of soybean production and productivity is by quantitative descriptive analysis. The Analysis Hierarchy Process (AHP) method determines soybean crop development strategies recommendations. Eight respondents from this study were purposely determined. The results showed that soybean production produced by soybean farmers in Kasimpa Jaya Village, South Tiworo District, was 14,900 kg with an average production yield of 1,862.5 kg and productivity of 7,426.66 Kg / Ha with an average value of 928.33 Kg/ha of soybeans. The results of the analysis of the soybean crop development strategy in Kasimpa Jaya Village, South Tiworo District, West Muna Regency, based on the Analysis Hierarchy Process (AHP), can be carried out using three main priority choices based on the results of the AHP, namely the procurement of facilities to soybean farmers, assistance (extension) to soybean farmers and increasing human resources in soybean farming activities.

Keywords: AHP; development strategy; production; productivity.

INTRODUCTION

Indonesia is a country known for its agricultural products, meaning that, in this case, agriculture plays an essential role in the overall national economy. Indonesia is an agricultural country where most of the population lives in agriculture (Zakaria, 2010). The agricultural sector still plays an essential role in the national economy, indicated by the large number of people or workers living off agriculture (Lubis et al., 2019).

Soybeans are the most essential food crop commodity after rice and corn. Soy contains high levels of vegetable protein, vitamins, fats, and minerals, which the body needs (Sumarmi, 2020). Soybeans can be used as processed food ingredients such as tofu, tempeh, soy milk, soy sauce, tempeh, and soy can also be used as industrial raw materials and animal feed (Hanum, 2008). The significant need for soybeans is not offset by the amount of domestic soybean production (Swastika, 2015).

West Muna Regency is one of the areas that is quite rapidly developing economically, especially in agriculture. The soybean harvest and production area in West Muna Regency in 2017 - 2020 showed a yearly decrease in harvest area and the amount of soybean production. In 2017, the total soybean production was 203.1 tons, with a harvest area of 115 ha. In 2018, the amount of production decreased from the previous year to 154 tons, and the soybean harvest area decreased to 93 ha from the previous year. In 2019, the total soybean production was 114.9, and the soybean harvest area was 85 ha. In 2020, soybean production dropped to the bottom of only 6 tons, with a land area shrinking from year to year, covering an area of 11 ha (BPS Muna Barat, 2020).

South Tiworo Subdistrict comprises five villages: Barakka Village, Kasimpa Jaya, Katangana, Parura Jaya and Sangia Tiworo. In Kasimpa Jaya Village, South Tiworo District, Soybean farmers
primarily contribute to farming production levels (on-farm) with added value or relatively small profits (Kurniati, 2015). The soybean crop area is shrinking yearly, so soybean production and productivity are also decreasing. Soybean farming has not fulfilled efforts to increase production through increasing productivity in Kasimp Jaya Village, South Tiworo District (Ningsih et al., 2015).

Research on soybean Development Strategies by using SWOT analysis to identify internal and external factors in soybean development (Anwar, 2019); (Patra et al., 2016); (Pratama & Sahaya, 2014); (Lubis et al., 2019); (Handayani et al., 2018); (Nurpitasari et al., 2017) as a result of the research, soybean development strategies are carried out to improve the function and role of farmer groups as a forum for communication and empowerment of farmers, and skilled workers are used to seize soybean market opportunities. Increased production output and quality to improve the welfare of farmers so that they always carry out soybean farming. Alternative development options for the government include area expansion and land mapping, regional agricultural partnerships, and the development of the soybean processing industry to expand the market.

The soybean Development Strategy in Kasimp Jaya Village, South Tiworo District, West Muna Regency uses the Analysis Hierarchy Process (AHP) method in decision-making to determine the soybean farming business development strategy. This development is carried out by determining criteria and alternatives from the cultivation stage to the marketing of soybeans. From the aspect of soybean cultivation in Kasimp Jaya Village, farmers still use many traditional methods in managing soybean crop farming. In addition, disease/pest attacks on soybean crops cause significant losses during harvest and decrease soybean production. The mechanism for selling soybean production in Kasimp Jaya Village only relies on intermediaries to sell their soybean products, making farmers reluctant to farm soybean crops. This study aims to determine how much soybean production and productivity there is in Kasimp Jaya Village and the strategy of soybean crop development in Kasimp Jaya Village, South Tiworo District.

MATERIALS AND METHODS

The location of this study was determined purposively considering that Kasimp Jaya Village is an area with land support to carry out soybean crop farming and has good potential for development. This research was carried out in November 2021 at Kasimp Jaya Village, South Tiworo District, West Muna Regency. The population in this study was soybean farmers in Kasimp Jaya Village. The sampling technique is used in the saturated sampling technique. The types of data used in this study are primary and secondary. Research data collection was carried out using direct interviews and literature studies. Research variables include respondent identity, production, and productivity and soybean development strategy variables, which include some criteria: cultivation technical, technology application, production continuity, and marketing. Meanwhile, alternative options include capital, human resources, cooperation, facilities, and assistance. The analysis used to answer the objectives of production and productivity research is quantitative descriptive analysis and productivity analysis (M.Sinungan, 2003) with the formula:

\[ \text{Productivity} = \frac{\text{Number of Productions (Kg)}}{\text{Land (Ha)}} \] (1)

To determine the soybean development strategy, the Analytic Hierarchy Process (AHP) is used in decision-making to recommend a strategy for soybean development in Kasimp Jaya Village, South Tiworo District, West Muna Regency. The respondents in the study were soybean farmers who were still working on soybean farming and had been doing soybean farming for quite a long time. The respondents to this study were eight people.

RESULTS AND DISCUSSION

Identity of Respondents

The identity of the respondent is a description of the respondent's self. The respondents' identities for soybean farmers to be observed in this study include age, level of education, number of family members, experience farming soybeans, and land area of soybean crops.

According to the Manpower Law No. 13 of 2003, "those who are not workers are those who are under 15 years old and over 64 years old". Under the Act, it can be concluded that the working age is 15-64 years, with the provision that students, students, housewives, and people with special needs are not referred to in the labour category. The age of the respondents showed that the overall productive age of the respondent farmers was 15-64 years. The younger the age, the farmers tend to
have a more muscular physique and dynamic in managing their farming, so they can work stronger than farmers who are generally old (Setawan & Faturida, 2016). This gives the idea that respondent farmers still have the physical strength to work to process soybean farming, so with these conditions, they are expected to carry out activities optimally and increase their income. The age of a farmer can generally affect farming activities in managing his business, in this case, affecting physical condition and thinking ability (Anwar, 2019). In addition, younger farmers dare to bear the risks of trying innovations to advance their farming business (Tuwo, 2011).

Table 1. Characteristics of respondents

<table>
<thead>
<tr>
<th>No</th>
<th>Identity of the respondent</th>
<th>Respondents</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Age (Years)</td>
<td>15-64</td>
<td>8</td>
</tr>
<tr>
<td>2</td>
<td>Education Level</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Elementary school</td>
<td>4</td>
<td>50,00</td>
</tr>
<tr>
<td></td>
<td>Lower Secondary School</td>
<td>1</td>
<td>12,50</td>
</tr>
<tr>
<td></td>
<td>Upper Secondary School</td>
<td>2</td>
<td>25,00</td>
</tr>
<tr>
<td></td>
<td>Higher Education</td>
<td>1</td>
<td>12,50</td>
</tr>
<tr>
<td>3</td>
<td>Family Dependents (Person)</td>
<td>2-4</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>&gt;4</td>
<td>1</td>
<td>12,50</td>
</tr>
<tr>
<td>4</td>
<td>Farming Experience (Years)</td>
<td>&lt;5</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>5-10</td>
<td>2</td>
<td>25,00</td>
</tr>
<tr>
<td>5</td>
<td>Land (Ha)</td>
<td>0.5-2</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>&gt;2</td>
<td>2</td>
<td>25,00</td>
</tr>
</tbody>
</table>

Source: Primary Data Processing in 2021

The education in question is the formal education of the respondent farmers. Education is one of the factors that can determine the level of perception and motivation for a farmer to make changes toward better conditions continually. A person with a higher level of education will undoubtedly have higher reasoning power compared to a person with a low level of education. Education Level is the level of education obtained by respondents, for example, elementary, junior high, high school, and higher education. The level of education of respondent farmers is still relatively low, so to increase the knowledge and skills of farmers, assistance from Field Agricultural Extension Officers or parties who can provide knowledge to farmers is needed (Lubis et al., 2019). The results showed that most respondent farmers had a low level of education, namely at the elementary level. The above conditions affect the mindset of respondent farmers in making decisions related to their farming activities. A person's education and knowledge can determine the attitude in managing his farming business. Education is considered a means of obtaining quality human resources. Education is considered capable of producing a high-quality workforce with a modern mindset and way of acting to move the wheels of future agricultural sector development (Sumarta & Martono, 2011). The higher one's education, the greater the chance of success in managing a business that is done and vice versa (Riska et al., 2018). Farmer knowledge is essential because farmers' knowledge can increase their understanding and ability. Knowledge can increase insight and will strengthen the motivation of farmers to achieve success as farmers become more confident in their abilities.

Family Dependents affect respondents' economic activity in managing their business. The number of significant family dependents and productive age will undoubtedly provide a large amount of family labour in trying that it will affect family income, but if the family members are prominent and aged have not or are not productive, it will be a burden on family dependents in providing food, clothing, and others (Suratayah, 2006). The results showed that the number of dependents of farmer families ranged from 2 to 4 people/person in one family. This shows that the burden of dependents on the families of soybean farmers in Kasimpa Jaya Village, South Tiworo District, West Muna Regency, is still relatively small. If there are three people, the number of dependents in the family is said to be a small family, four to six people are said to be medium families, and more than six people are said to be large families (Zakaria, 2010). Thus, labour within the family is reasonably available when trying to farm, so using outside labour is unnecessary (Zakaria, 2010).

The experience of trying to farm a farmer is an educational process obtained from outside the school bench. Farming experience will always bring changes to farmers in managing their farming business (Riska et al., 2018). A farmer with much experience is expected to determine a better
alternative concerning his farming. A lot of experience can provide a valuable lesson for farmers because they can learn from mistakes that have happened to them so that they can be used as guidelines for changing bad habits in a better direction in the future. The processed data shows that soybean farmers have less agricultural experience. The experience of soybean farmers in doing soybean farming ranges from 2 years to 5 years. For all farmers with long-standing farming experience in soybeans for < 5 years, the number is 6 people; for those with experience in soybean farming for 5-10 years, the number is as many as 2 people. This shows that soybean farmers in Kasimpa Jaya Village, South Tiworo District, West Muna Regency, are generally not experienced enough in doing soybean farming business, so they still need guidance and direction from extension workers and the government (Anwar, 2019). Experience is an educational process obtained from an event or events that have been experienced that is very beneficial for a person to be better than before (Tuwo, 2011).

From an efficiency point of view, the wider the land cultivated, the higher the production and tapping per unit area (Ningsih et al., 2015). Total land area is the total amount of land on the farm, including rice fields, tegal, canal road yards, and so on (Suratliyah, 2006). The processed land area data shows that soybean farmers who have a land area of < 0.5 Ha are not there and who have a land area of 0.5-2 Ha, as many as 6 people or 75.00%, while those who have a land area above 2 Ha, as many as 2 people or 25.00%. The overall land area of the respondent farmers is 16 ha, with the average land area of soybean farming in Kasimpa Jaya Village, which is 2 ha. Based on the grouping of land area by Fhadoli Hermanto, the land area in Kasimpa Jaya Village is based on the average land area entered on arable land.

### Soybean Production and Productivity

Production and productivity are two different meanings. Increased production indicates an increase in the number of results achieved, while increased productivity contains an understanding of improvements in how to achieve the product (M.Sinungan, 2003). Soybean production activities by farmers in Kasimpa Jaya Village were initially carried out continuously for a year. Still, due to erratic weather conditions and not following community predictions, the community planted soybeans by alternating with rice. Based on the results of interviews with soybean farmers, it is known that producing good quality soybean production in one production depends on the weather and the care of the crops given due to pest attacks that can suddenly damage the soybean crop, so production becomes threatened. As for the seeds used by farmers, most of them choose the Anjasmor type of seeds as quality seeds to produce quality products.

<table>
<thead>
<tr>
<th>Respondents</th>
<th>Production (kg)</th>
<th>Land (Ha)</th>
<th>Productivity(Kg/ha)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>450</td>
<td>0.5</td>
<td>900.00</td>
</tr>
<tr>
<td>2</td>
<td>2.500</td>
<td>3</td>
<td>833.33</td>
</tr>
<tr>
<td>3</td>
<td>2.000</td>
<td>2</td>
<td>1.000.00</td>
</tr>
<tr>
<td>4</td>
<td>1.800</td>
<td>2</td>
<td>900.00</td>
</tr>
<tr>
<td>5</td>
<td>4.800</td>
<td>5</td>
<td>960.00</td>
</tr>
<tr>
<td>6</td>
<td>800</td>
<td>1</td>
<td>800.00</td>
</tr>
<tr>
<td>7</td>
<td>1.000</td>
<td>1</td>
<td>1.000.00</td>
</tr>
<tr>
<td>8</td>
<td>1.550</td>
<td>1.5</td>
<td>1.033.33</td>
</tr>
<tr>
<td><strong>Sum</strong></td>
<td><strong>14.900</strong></td>
<td><strong>16</strong></td>
<td><strong>7.426.66</strong></td>
</tr>
<tr>
<td><strong>Average</strong></td>
<td><strong>1862.5</strong></td>
<td><strong>2</strong></td>
<td><strong>928.33</strong></td>
</tr>
</tbody>
</table>

Source: Processing Primary Data in 2021

Based on Table 2. It can be seen that the highest production level of soybeans is 4,800 kg, and the highest productivity of soybeans in Kasimpa Jaya Village, South Tiworo District, West Muna Regency, is 1,033.33 Kg/Ha, with a total production of 1,550 kg and a land area of 1.5 ha. The average productivity of the carrying capacity of soybean agricultural land in Kasimpa Jaya Village, South Tiworo District, West Muna Regency, is 928.33 /ha. These results show that the same land area does not determine the amount of production and productivity of soybeans owned by farmers, which is also the same (Purnasari et al., 2018). Many factors can affect this, such as the availability of production facilities, poorly understood soybean cultivation techniques, and insufficient assistance to farmers in the field (Setiawan & Fafurida, 2016). Factors that affect the low production in soybean farming in Kasimpa Jaya Village, South Tiworo District, West Muna Regency include the
availability of production facilities and infrastructure such as seeds, fertilizers, pesticides, capital, human resources, and extension assistance to farmers. Production factors sacrificed for crops to produce well, including land, capital, seeds, fertilizers, and labour, are the most important (Soekartawi, 2003). The development of the agricultural sector needs to be carried out to advance the agricultural sector through increasing production output (Pratama & Sahaya, 2014). Judging from the production and productivity of other regions in Southeast Sulawesi province, such as South Konawe Regency, soybean production is 210 tons (BPS, 2020). This is still far from the soybean production of West Muna regency, so it needs to increase production for the sustainability of soybean production continuity.

**Soybean Development Strategy**

The analysis of soybean crop development strategies in Kasimpa Jaya Village, South Tiworo District, West Muna Regency, was formulated using the AHP (Analysis Hierarchy Process) method. The objectives, criteria, and alternative strategies used in the AHP stage are formulated from surveys and discussions with soybean farmers (Oelviani, 2013). The criteria chosen in this soybean crop development strategy are cultivation technical, application of technology, continuity of production, and marketing. Alternative decisions in the soybean crop development strategy are needed to achieve the predetermined goals for the selected criteria. Determination alternatives in the soybean crop development strategy are facilities, assistance, human resources, capital, and cooperation.

![Graphique 1. Result of combination criteria & Alternative for soybean Development strategies](image)

**1. Provision of assistance for farming facilities**

  Farming facilities support the success of farming activities carried out in soybean farming. Providing production facilities in the form of seeds, fertilizers, pesticides, and agricultural materials, Alsina has an essential role in increasing soybean production (Setiawan & Fafurida, 2016).

  As a result of the research, soybean farmers obtained superior varieties of seed production from the government. However, farmers who obtain the means of seed production are not evenly distributed. In this case, there are only 6 soybean farmers out of eight soybean farmers in the area. The government assists seed production facilities once a year to farmers, and is still not evenly distributed. The low selling price of soybeans at the farmer level and the high price of fertilizers and pesticides cause soybean farming to be unprofitable. Supporting institutional facilities to support farming are not running well. Farmers do not manage such institutions to be active and pay attention to what farmers lack. Institutional facilities are only intended for people in farmer groups with membership cards, making the facilities supporting soybean farming less smooth. The facilities needed by soybean farmers can be fulfilled with government assistance by empowering soybean farmer groups in Kasimpa Jaya Village as well as preparing a definitive plan for the needs of facilities needed by soybean farmers so that the government can make every effort to procure facilities related to the needs of soybean farmers.

  Procurement of facilities and distribution of inputs is formulated in the soybean farming business strategy by providing subsidies for production inputs following the needs of farmers, providing agricultural production facilities on time, quantity, price, and quality (SAPROTAN) (Pratama & Sahaya, 2014).

**2. Agricultural Extension Assistance**

  Improve production facility quality must also be followed by good supervision (Lubis et al., 2019). The assistance referred to here is the assistance of agricultural extension workers to soybean farmers carrying out soybean crop cultivation activities (Djualiansah et al., 2020). Based on the conditions related to soybean crop farming activities in Kasimpa Jaya Village, South Tiworo District, soybean farmers feel very poorly about the role of mentoring agricultural extension workers. Stimuli to
farmers related to soybean cultivation were not felt. This is characterized by the lack of extension workers in assisting farmers when carrying out soybean crop farming or communication related to farmer constraints in soybean farming, especially in eradicating pests/diseases of soybean crops, assistance to the use of technology. The strategy of increasing assistance to soybean farmers in Kasimpa Jaya Village, South Tiworo District, West Muna Regency, can be carried out by optimizing the presence and role and performance of agricultural extension workers to soybean farmers.

According to Pratama and Sahaya (2014), The aspects formulated in the soybean crop development strategy through cultivation criteria are mentoring farmers to apply appropriate soybean cultivation technology to increase crop yields, stimulating increased use of organic fertilizers and vegetable pesticides, stimulating farmers to use labelled soybean seeds and improve farmers’ knowledge of skills.

3. Human Resource Improvement

Humans are drivers in this farming business activity, and abundant human resources are needed to continue farming activities in agriculture (Sumarta & Martono, 2011). Conditions in the field are not only related to production facilities and the lack of counselling assistance to farming businesses, but the availability of human resources is also one of the factors that affect the production of soybean crop farming.

Human resource problems in soybean farming in Kasimpa Jaya Village, South Tiworo District, West Muna Regency include the reduction of soybean crop farming actors due to a lack of knowledge of land management of soybean farming, maintenance knowledge of soybean farming is very lacking, pest and disease control in soybean crops is less technically understood. Hence, farmers are reluctant to do farming because of the lack of knowledge, as mentioned above. The lack of human resource capacity in soybean farming also needs to be addressed so that soybean farming in Kasimpa Village can continue to run and increase. Strategies for increasing human resources in the development of soybean crops can be carried out by improving skills, continuous cultivation in management, motivating the farming community to participate in agricultural development programs, and empowerment processes to build the quality of human resources and changes in youth mindset, especially agricultural graduates.

The improvement of soybean cultivation knowledge and skills implicitly shows that the main problem in the cultivation criteria is the lack of knowledge and skills in cultivating soy. Human resources are reduced for it to be necessary to improve cultivation knowledge and skills (Pratama & Sahaya, 2014). Agricultural and human resources must be innovative to pay attention to agricultural development and knowledge systems changes. Millennial farmers need an innovation system in agriculture to reach all aspects of management in agriculture, such as production, technology, markets, and institutions (Suradal et al., 2017).

4. Capital

Capital is a production factor that is no less important in soybean cultivation activities. This is because, with capital, farmers can buy fertilizers, pesticides, or agricultural equipment to support soybean cultivation activities (Setiawan & Fafurida, 2016).

According to interviews with soybean farmers, the capital owned by farmers to cultivate soybean crops comes from their own and borrowed capital. The average capital farmers use in their soybean farming business is 2.5 to 3 million. Still, according to farmers, the capital owned is insufficient for farmers in soybean farming, especially for purchasing fertilizers and pesticides. Supporting institutions that provide capital for soybean farmers are expected to support the farming efforts that are carried out.

Capital assistance for the needs of soybean farmers is intended to reduce marketing chains that are too long from farmers to consumers. Through capital assistance facilities, farmer groups are expected to buy soybean seeds so that soybean farmers do not sell soybeans individually to wholesalers or the soybean processing industry (Pratama & Sahaya, 2014).

5. Collaborate

The cooperation referred to here is cooperation in helping each other, both soybean farmers and the government, whether they exchange information with farmers or vice versa (Lubis et al., 2019). The research results in cooperation carried out by farmers, namely in terms of planting or harvesting activities where farmers help each other. This collaboration is built based on helping to fight between fellow farmers as well as strengthening relations between farmers. Voluntarily, soybean farmers in Kasimpa Jaya Village come to help soybean farmers both during planting and harvesting activities. This cooperation in soybean farming is not prioritized in achieving the expected goals.
CONCLUSIONS AND SUGGESTIONS

Based on the results of the study, it can be concluded that soybean production and productivity in Kasimpa Jaya Village, South Tiworo District, still need to be improved to maintain the continuity of soybean production. Soybean crop development strategies can be carried out using three preferred priorities as follows based on the results, namely: procurement of farming facilities to soybean farmers, assistance (extension workers) to soybean farmers, increasing human resources in soybean farming activities, capital, and cooperation. It is necessary to increase soybean production and productivity so that the continuity of production continues to run, and government assistance in terms of providing capital institution facilities and the role of agricultural extension assistance needs to be increased in assisting soybean farmers because technically, cultivation has not been fully mastered by soybean farmers.

REFERENCES


